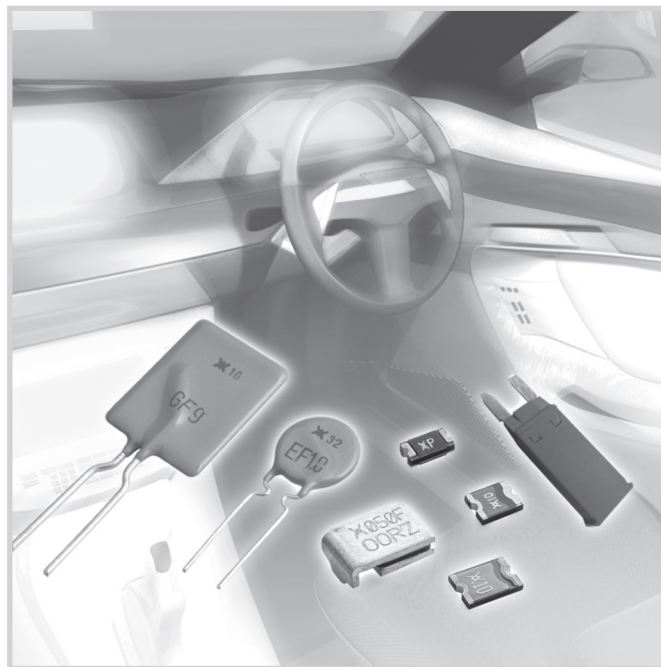


## PolySwitch Resettable Devices

### Automotive Devices

We have provided PPTC resettable devices for the automotive industry for over 25 years. With the advent of TS16949 and our continued involvement in the automotive industry, TE Circuit Protection developed automotive-specific versions of our PolySwitch PPTC devices (the nanoASMD, microASMD, miniASMD, AHS, ASMD, AHRF, AHEF, AGRF and BD families). These products are qualified and sold under the PS400 specification which is derived from AEC-Q200, the standard for electronic components used in the automotive industry. The key difference between these product families and other protection devices in our circuit protection product portfolio is the qualification process that is followed that includes a series of rigorous tests related to the automotive environment. As a result, they are characterized by specific additional values determined following automotive-related testing.



#### Benefits

- Expertise from the world's leading resettable overcurrent protection manufacturer
- High-quality products from the world's largest passive component manufacturer
- Worldwide team dedicated to support automotive applications
- Wide range of dedicated automotive surface-mount and radial-leaded resettable overcurrent devices
- High-performance transient voltage protection devices

#### Features

- RoHS compliant
- Overcurrent and overvoltage circuit protection devices
- Resettable and single-use overcurrent devices
- Wide range of form factor and termination methods
- Products meet applicable automotive industry standards
- Devices compatible with high-volume electronics assembly

#### Applications

- Motor and motor circuit protection including power door-locks, mirrors, lumbar pumps, seats, sunroofs and windows
- Electronic Control Unit (ECU) I/O protection
- Heating, Ventilation and Cooling (HVAC) motor and I/O protection
- Telematics, infotainment and navigations systems
- Liquid Crystal Display (LCD) back-light heaters
- Power and cigarette lighter outlets, plugs and adapter/chargers
- Powered networks and buses
- Air-flow detection and overcurrent protection in HVAC and cooling fan systems
- Stall detection in express window and sunroof circuits
- Resettable overcurrent protection for power distribution, electrical centers and junction boxes
- Wire downsizing
- Motor electromagnetic interference (EMI) suppression
- Electrostatic discharge (ESD) damage protection
- Load dump and other transient voltage protection

**Table A1** Product Series - Current Rating, Voltage Rating / Typical Resistance for PolySwitch Automotive Devices

| Voltage Rating          | AGRF<br>16V | AHRF<br>16V | AHRF<br>30V | AHEF<br>32V | AHS<br>16V | ASMD<br>16V | ASMD<br>30V | ASMD<br>60V | BD<br>14V |
|-------------------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-----------|
| <b>Hold Current (A)</b> |             |             |             |             |            |             |             |             |           |
| 0.30                    | —           | —           | —           | —           | —          | —           | —           | 2.90Ω       | —         |
| 0.50                    | —           | —           | 0.565Ω      | 0.5650Ω     | —          | —           | —           | 0.90Ω       | —         |
| 0.70                    | —           | —           | 0.385Ω      | 0.3850Ω     | —          | —           | —           | —           | —         |
| 0.75                    | —           | —           | —           | —           | —          | —           | 0.60Ω       | —           | —         |
| 0.80                    | —           | —           | —           | —           | 0.250Ω     | —           | —           | —           | —         |
| 1.00                    | —           | —           | 0.225Ω      | 0.2250Ω     | —          | —           | 0.30Ω       | —           | —         |
| 1.20                    | —           | —           | —           | —           | 0.245Ω     | —           | —           | —           | —         |
| 1.25                    | —           | —           | —           | —           | —          | 0.160Ω      | —           | —           | —         |
| 1.50                    | —           | —           | —           | —           | —          | 0.140Ω      | —           | —           | —         |
| 1.60                    | —           | —           | —           | —           | 0.100Ω     | —           | —           | —           | —         |
| 1.85                    | —           | —           | —           | —           | —          | 0.079Ω      | —           | —           | —         |
| 2.00                    | —           | 0.0565Ω     | —           | —           | 0.070Ω     | 0.090Ω      | —           | —           | —         |
| 2.50                    | —           | —           | —           | —           | —          | 0.060Ω      | —           | —           | —         |
| 3.00                    | —           | 0.0410Ω     | —           | 0.0520Ω     | 0.050Ω     | —           | —           | —           | —         |
| 4.00                    | 0.0300Ω     | 0.0305Ω     | —           | —           | —          | —           | —           | —           | —         |
| 4.50                    | —           | 0.0290Ω     | —           | —           | —          | —           | —           | —           | —         |
| 5.00                    | 0.0192Ω     | —           | —           | 0.0200Ω     | —          | —           | —           | —           | —         |
| 5.50                    | —           | 0.0190Ω     | —           | —           | —          | —           | —           | —           | —         |
| 6.00                    | 0.0145Ω     | 0.0180Ω     | —           | —           | —          | —           | —           | —           | —         |
| 6.50                    | —           | 0.0140Ω     | —           | —           | —          | —           | —           | —           | —         |
| 7.00                    | 0.0105Ω     | 0.0126Ω     | —           | —           | —          | —           | —           | —           | —         |
| 7.50                    | —           | 0.0120Ω     | —           | 0.0120Ω     | —          | —           | —           | —           | —         |
| 8.00                    | 0.0086Ω     | 0.0104Ω     | —           | —           | —          | —           | —           | —           | 0.01150Ω  |
| 9.00                    | 0.0070Ω     | 0.0100Ω     | —           | —           | —          | —           | —           | —           | —         |
| 10.00                   | 0.0056Ω     | 0.0083Ω     | —           | 0.0083Ω     | —          | —           | —           | —           | —         |
| 11.00                   | 0.0050Ω     | 0.0069Ω     | —           | —           | —          | —           | —           | —           | —         |
| 12.00                   | 0.0046Ω     | —           | —           | —           | —          | —           | —           | —           | 0.00600Ω  |
| 13.00                   | —           | 0.0055Ω     | —           | —           | —          | —           | —           | —           | —         |
| 14.00                   | 0.0040Ω     | 0.0050Ω     | —           | —           | —          | —           | —           | —           | —         |
| 15.00                   | —           | 0.0050Ω     | —           | —           | —          | —           | —           | —           | —         |
| 16.00                   | —           | —           | —           | —           | —          | —           | —           | —           | 0.00365Ω  |
| 20.00                   | —           | —           | —           | —           | —          | —           | —           | —           | 0.00285Ω  |
| 21.00                   | —           | —           | —           | —           | —          | —           | —           | —           | 0.00260Ω  |

| Voltage Rating          | nanoASMD<br>48V | nanoASMD<br>24V | nanoASMD<br>16V | microASMD<br>30V | miniASMD<br>60V | miniASMD<br>30V | miniASMD<br>24V | miniASMD<br>16V |
|-------------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|
| <b>Hold Current (A)</b> |                 |                 |                 |                  |                 |                 |                 |                 |
| 0.05                    | —               | —               | —               | 26.80Ω           | —               | —               | —               | —               |
| 0.10                    | —               | —               | —               | 8.55Ω            | 6.70Ω           | —               | —               | —               |
| 0.12                    | 3.95Ω           | —               | —               | —                | —               | —               | —               | —               |
| 0.14                    | —               | —               | —               | —                | 3.75Ω           | —               | —               | —               |
| 0.16                    | 3.05Ω           | —               | —               | —                | —               | —               | —               | —               |
| 0.20                    | —               | 1.875Ω          | —               | —                | —               | 1.950Ω          | —               | —               |
| 0.30                    | —               | —               | —               | —                | —               | 0.975Ω          | —               | —               |
| 0.35                    | —               | —               | 0.90Ω           | —                | —               | —               | —               | —               |
| 0.50                    | —               | —               | —               | —                | —               | —               | 0.575Ω          | —               |
| 0.75                    | —               | —               | —               | —                | —               | —               | 0.190Ω          | —               |
| 1.10                    | —               | —               | —               | —                | —               | —               | 0.120Ω          | 0.1200Ω         |
| 1.25                    | —               | —               | —               | —                | —               | —               | —               | 0.0950Ω         |
| 1.50                    | —               | —               | —               | —                | —               | —               | 0.080Ω          | 0.0750Ω         |
| 2.60                    | —               | —               | —               | —                | —               | —               | —               | 0.0325Ω         |

**Table A2 Thermal Derating for PolySwitch Automotive Devices**  
**[Hold Current (A) at Ambient Temperature (°C)]**

| Part Number                    | Maximum Ambient Temperature |       |       |      |      |      |       |      |      |       |       |
|--------------------------------|-----------------------------|-------|-------|------|------|------|-------|------|------|-------|-------|
|                                | -40°C                       | -20°C | 0°C   | 20°C | 25°C | 40°C | 50°C  | 60°C | 70°C | 85°C  | 125°C |
| <b>AGRF</b>                    |                             |       |       |      |      |      |       |      |      |       |       |
| <b>16V — Radial-leaded</b>     |                             |       |       |      |      |      |       |      |      |       |       |
| AGRF400                        | 5.9                         | 5.3   | 4.8   | 4.1  | 4.0  | 3.5  | 3.2   | 2.8  | 2.5  | 1.9   | —     |
| AGRF500                        | 7.3                         | 6.6   | 6.0   | 5.2  | 5.0  | 4.4  | 4.0   | 3.6  | 3.1  | 2.4   | —     |
| AGRF600                        | 8.8                         | 8.0   | 7.2   | 6.2  | 6.0  | 5.2  | 4.8   | 4.2  | 3.8  | 2.8   | —     |
| AGRF700                        | 10.3                        | 9.3   | 8.4   | 7.3  | 7.0  | 6.2  | 5.6   | 5.0  | 4.4  | 3.3   | —     |
| AGRF800                        | 11.7                        | 10.7  | 9.6   | 8.3  | 8.0  | 6.9  | 6.4   | 5.6  | 5.1  | 3.7   | —     |
| AGRF900                        | 13.2                        | 11.9  | 10.7  | 9.4  | 9.0  | 7.9  | 7.2   | 6.4  | 5.6  | 4.2   | —     |
| AGRF1000                       | 14.7                        | 13.3  | 12.0  | 10.3 | 10.0 | 8.7  | 8.0   | 7.0  | 6.3  | 4.7   | —     |
| AGRF1100                       | 16.1                        | 14.6  | 13.1  | 11.5 | 11.0 | 9.7  | 8.8   | 7.8  | 6.9  | 5.2   | —     |
| AGRF1200                       | 17.6                        | 16.0  | 14.4  | 12.4 | 12.0 | 10.4 | 9.6   | 8.4  | 7.6  | 5.6   | —     |
| AGRF1400                       | 20.5                        | 18.7  | 16.8  | 14.5 | 14.0 | 12.1 | 11.2  | 9.8  | 8.9  | 6.5   | —     |
| <b>AHRF (High Temperature)</b> |                             |       |       |      |      |      |       |      |      |       |       |
| <b>30V — Radial-leaded</b>     |                             |       |       |      |      |      |       |      |      |       |       |
| AHRF050                        | 0.7                         | 0.6   | 0.6   | 0.5  | 0.5  | 0.4  | 0.4   | 0.4  | 0.3  | 0.3   | 0.1   |
| AHRF070                        | 1.0                         | 0.9   | 0.8   | 0.7  | 0.7  | 0.6  | 0.6   | 0.5  | 0.5  | 0.4   | 0.2   |
| AHRF100                        | 1.4                         | 1.2   | 1.1   | 1.0  | 1.0  | 0.9  | 0.8   | 0.7  | 0.7  | 0.6   | 0.2   |
| <b>AHRF (High Temperature)</b> |                             |       |       |      |      |      |       |      |      |       |       |
| <b>16V — Radial-leaded</b>     |                             |       |       |      |      |      |       |      |      |       |       |
| AHRF200                        | 2.7                         | 2.5   | 2.3   | 2.1  | 2.0  | 1.8  | 1.6   | 1.5  | 1.3  | 1.1   | 0.5   |
| AHRF300                        | 4.1                         | 3.7   | 3.4   | 3.1  | 3.0  | 2.7  | 2.4   | 2.2  | 2.0  | 1.7   | 0.7   |
| AHRF400                        | 5.6                         | 5.1   | 4.7   | 4.2  | 4.0  | 3.6  | 3.3   | 3.0  | 2.7  | 2.3   | 1.0   |
| AHRF450                        | 6.1                         | 5.6   | 5.1   | 4.6  | 4.5  | 4.0  | 3.6   | 3.3  | 3.0  | 2.5   | 1.1   |
| AHRF550                        | 7.5                         | 6.9   | 6.2   | 5.7  | 5.5  | 4.9  | 4.4   | 4.0  | 3.7  | 3.1   | 1.4   |
| AHRF600                        | 8.2                         | 7.5   | 6.8   | 6.2  | 6.0  | 5.3  | 4.9   | 4.4  | 4.0  | 3.3   | 1.5   |
| AHRF650                        | 8.8                         | 8.1   | 7.4   | 6.7  | 6.5  | 5.7  | 5.3   | 4.8  | 4.3  | 3.6   | 1.6   |
| AHRF700                        | 9.5                         | 8.7   | 8.0   | 7.2  | 7.0  | 6.2  | 5.6   | 5.2  | 4.7  | 3.9   | 1.7   |
| AHRF750                        | 10.2                        | 9.4   | 8.6   | 7.7  | 7.5  | 6.6  | 6.1   | 5.6  | 5.0  | 4.1   | 1.9   |
| AHRF800                        | 10.9                        | 10.0  | 9.1   | 8.2  | 8.0  | 7.1  | 6.4   | 5.9  | 5.3  | 4.4   | 2.0   |
| AHRF900                        | 12.2                        | 11.2  | 10.2  | 9.3  | 9.0  | 8.0  | 7.2   | 6.6  | 6.0  | 5.0   | 2.2   |
| AHRF1000                       | 13.6                        | 12.5  | 11.4  | 10.3 | 10.0 | 8.8  | 8.1   | 7.4  | 6.6  | 5.5   | 2.5   |
| AHRF1100                       | 14.9                        | 13.7  | 12.5  | 11.3 | 11.0 | 9.7  | 8.8   | 8.1  | 7.3  | 6.1   | 2.7   |
| AHRF1300                       | 17.7                        | 16.3  | 14.8  | 13.4 | 13.0 | 11.4 | 10.5  | 9.6  | 8.6  | 7.2   | 3.3   |
| AHRF1400                       | 19.0                        | 17.5  | 15.9  | 14.4 | 14.0 | 12.4 | 11.2  | 10.3 | 9.3  | 7.8   | 3.5   |
| AHRF1500                       | 20.4                        | 18.8  | 17.1  | 15.5 | 15.0 | 13.2 | 12.1  | 11.1 | 9.9  | 8.3   | 3.8   |
| <b>AHEF (High Temperature)</b> |                             |       |       |      |      |      |       |      |      |       |       |
| <b>32V — Radial-leaded</b>     |                             |       |       |      |      |      |       |      |      |       |       |
| AHEF050                        | 0.7                         | 0.6   | 0.60  | 0.5  | 0.5  | 0.4  | 0.400 | 0.40 | 0.30 | 0.300 | 0.1   |
| AHEF070                        | 1.0                         | 0.9   | 0.80  | 0.7  | 0.7  | 0.6  | 0.600 | 0.50 | 0.50 | 0.400 | 0.2   |
| AHEF100                        | 1.4                         | 1.2   | 1.10  | 1.0  | 1.0  | 0.9  | 0.800 | 0.70 | 0.70 | 0.600 | 0.2   |
| AHEF300                        | 4.1                         | 3.8   | 3.42  | 3.1  | 3.0  | 2.7  | 2.430 | 2.22 | 1.98 | 1.650 | 0.6   |
| AHEF500                        | 6.8                         | 6.3   | 5.70  | 5.2  | 5.0  | 4.5  | 4.050 | 3.70 | 3.30 | 2.750 | 1.0   |
| AHEF750                        | 10.2                        | 9.4   | 8.55  | 7.7  | 7.5  | 6.7  | 6.075 | 5.55 | 4.95 | 4.125 | 1.5   |
| AHEF1000                       | 13.6                        | 12.5  | 11.40 | 10.3 | 10.0 | 8.9  | 8.100 | 7.40 | 6.60 | 5.500 | 2.0   |
| <b>AHS (High Temperature)</b>  |                             |       |       |      |      |      |       |      |      |       |       |
| <b>16V — Surface-mount</b>     |                             |       |       |      |      |      |       |      |      |       |       |
| AHS080-2018                    | 1.20                        | 1.04  | 0.90  | 0.8  | 0.77 | 0.68 | 0.62  | 0.60 | 0.53 | 0.46  | 0.26  |
| <b>NEW</b> AHS120              | 1.72                        | 1.54  | 1.36  | 1.2  | 1.14 | 1.01 | 0.92  | 0.83 | 0.74 | 0.61  | 0.25  |
| AHS160                         | 2.15                        | 1.96  | 1.78  | 1.6  | 1.55 | 1.42 | 1.33  | 1.24 | 1.15 | 1.01  | 0.64  |
| AHS200                         | 2.90                        | 2.50  | 2.20  | 2.0  | 1.94 | 1.80 | 1.75  | 1.70 | 1.40 | 1.18  | 0.67  |
| AHS300                         | 4.20                        | 3.80  | 3.70  | 3.0  | 2.92 | 2.63 | 2.44  | 2.10 | 2.00 | 1.76  | 1.00  |

**Table A2 Thermal Derating for PolySwitch Automotive Devices**  
[Hold Current (A) at Ambient Temperature (°C)]

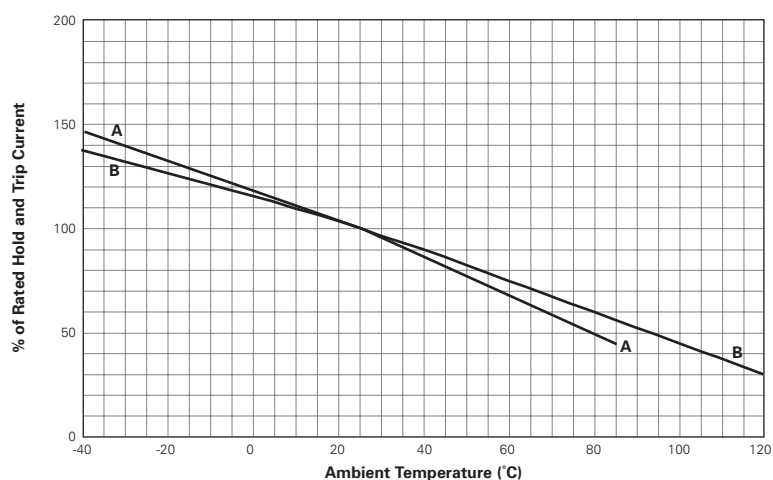
Cont'd

| Part Number                   | Maximum Ambient Temperature |       |      |      |      |      |      |      |      |      |       |
|-------------------------------|-----------------------------|-------|------|------|------|------|------|------|------|------|-------|
|                               | -40°C                       | -20°C | 0°C  | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C | 125°C |
| <b>ASMD</b>                   |                             |       |      |      |      |      |      |      |      |      |       |
| <b>16-60V — Surface-mount</b> |                             |       |      |      |      |      |      |      |      |      |       |
| ASMD030F                      | 0.35                        | 0.31  | 0.27 | 0.23 | 0.22 | 0.19 | 0.17 | 0.15 | 0.13 | 0.11 | —     |
| ASMD050F                      | 0.59                        | 0.53  | 0.46 | 0.39 | 0.37 | 0.33 | 0.29 | 0.26 | 0.23 | 0.18 | —     |
| ASMD075F                      | 0.91                        | 0.81  | 0.71 | 0.60 | 0.58 | 0.50 | 0.45 | 0.40 | 0.35 | 0.28 | —     |
| ASMD100F                      | 1.37                        | 1.22  | 1.06 | 0.90 | 0.86 | 0.76 | 0.68 | 0.60 | 0.52 | 0.41 | —     |
| ASMD125F                      | 1.58                        | 1.40  | 1.23 | 1.04 | 1.00 | 0.87 | 0.78 | 0.70 | 0.60 | 0.48 | —     |
| ASMD150F                      | 1.93                        | 1.70  | 1.50 | 1.27 | 1.22 | 1.07 | 0.95 | 0.85 | 0.74 | 0.58 | —     |
| ASMD185F                      | 2.93                        | 2.58  | 2.30 | 1.93 | 1.85 | 1.62 | 1.44 | 1.30 | 1.12 | 0.88 | —     |
| ASMD200F                      | 2.63                        | 2.34  | 2.04 | 1.73 | 1.66 | 1.45 | 1.30 | 1.16 | 1.00 | 0.80 | —     |
| ASMD250F                      | 3.00                        | 2.66  | 2.32 | 1.97 | 1.89 | 1.65 | 1.48 | 1.32 | 1.14 | 0.91 | —     |
| <b>nanoASMD</b>               |                             |       |      |      |      |      |      |      |      |      |       |
| <b>16-48V — Surface-mount</b> |                             |       |      |      |      |      |      |      |      |      |       |
| nanoASMD012F                  | 0.20                        | 0.17  | 0.15 | 0.13 | 0.12 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | —     |
| nanoASMD016F                  | 0.21                        | 0.20  | 0.18 | 0.16 | 0.16 | 0.14 | 0.13 | 0.12 | 0.11 | 0.09 | —     |
| nanoASMD020F                  | 0.34                        | 0.30  | 0.26 | 0.22 | 0.20 | 0.17 | 0.15 | 0.13 | 0.11 | 0.08 | —     |
| nanoASMD035F                  | 0.58                        | 0.51  | 0.44 | 0.38 | 0.35 | 0.31 | 0.28 | 0.24 | 0.21 | 0.16 | —     |
| <b>microASMD</b>              |                             |       |      |      |      |      |      |      |      |      |       |
| <b>30V — Surface-mount</b>    |                             |       |      |      |      |      |      |      |      |      |       |
| microASMD005F                 | 0.08                        | 0.07  | 0.06 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | —     |
| microASMD010F                 | 0.15                        | 0.13  | 0.12 | 0.10 | 0.10 | 0.09 | 0.08 | 0.06 | 0.06 | 0.05 | —     |
| <b>miniASMD</b>               |                             |       |      |      |      |      |      |      |      |      |       |
| <b>16-60V — Surface-mount</b> |                             |       |      |      |      |      |      |      |      |      |       |
| miniASMD010F                  | 0.17                        | 0.15  | 0.13 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.04 | —     |
| miniASMD014F                  | 0.23                        | 0.20  | 0.17 | 0.14 | 0.13 | 0.11 | 0.10 | 0.09 | 0.07 | 0.05 | —     |
| miniASMD020F                  | 0.30                        | 0.27  | 0.23 | 0.20 | 0.19 | 0.17 | 0.15 | 0.13 | 0.12 | 0.09 | —     |
| miniASMD030F                  | 0.49                        | 0.44  | 0.39 | 0.32 | 0.30 | 0.27 | 0.24 | 0.22 | 0.18 | 0.14 | —     |
| miniASMD050F                  | 0.59                        | 0.57  | 0.55 | 0.50 | 0.48 | 0.45 | 0.43 | 0.35 | 0.30 | 0.23 | —     |
| miniASMD075F/24               | 1.50                        | 1.25  | 1.00 | 0.75 | 0.73 | 0.65 | 0.60 | 0.55 | 0.50 | 0.43 | —     |
| miniASMD0110F/16              | 1.68                        | 1.49  | 1.30 | 1.10 | 1.05 | 0.92 | 0.83 | 0.75 | 0.64 | 0.50 | —     |
| miniASMD0110F/24              | 2.00                        | 1.70  | 1.40 | 1.10 | 1.06 | 0.95 | 0.88 | 0.80 | 0.73 | 0.61 | —     |
| miniASMD0125F/16              | 2.00                        | 1.69  | 1.47 | 1.25 | 1.17 | 1.03 | 0.92 | 0.90 | 0.69 | 0.53 | —     |
| miniASMD0150F/16              | 2.40                        | 2.10  | 1.80 | 1.50 | 1.44 | 1.25 | 1.13 | 1.00 | 0.88 | 0.69 | —     |
| miniASMD0150F/24              | 2.10                        | 1.90  | 1.70 | 1.50 | 1.44 | 1.25 | 1.13 | 1.00 | 0.88 | 0.69 | —     |
| miniASMD0260F/16              | 3.50                        | 3.20  | 3.00 | 2.60 | 2.53 | 2.30 | 2.15 | 2.00 | 1.85 | 1.63 | —     |
| <b>BD</b>                     |                             |       |      |      |      |      |      |      |      |      |       |
| <b>14V — Bladed Device</b>    |                             |       |      |      |      |      |      |      |      |      |       |
| BD280-1130-10/16              | 12.4                        | 11.0  | 9.7  | 8.3  | 8.0  | 7.0  | 6.3  | 5.6  | 5.0  | 4.0  | —     |
| BD280-1130-15/16              | 17.4                        | 15.7  | 14.1 | 12.4 | 12.0 | 10.8 | 9.9  | 9.1  | 8.3  | 7.0  | —     |
| BD280-1130-20/16              | 24.0                        | 21.6  | 19.1 | 16.6 | 16.0 | 14.1 | 12.9 | 11.7 | 10.4 | 8.6  | —     |
| BD280-1927-25/16-W            | 32.0                        | 28.3  | 24.6 | 20.9 | 20.0 | 17.2 | 15.4 | 13.5 | 11.7 | 8.9  | —     |
| BD280-1927-30/16-W            | 34.1                        | 30.1  | 26.0 | 22.0 | 21.0 | 18.0 | 16.0 | 14.0 | 11.9 | 9.1  | —     |

# Figures A1-A4 Thermal Derating Curves for PolySwitch Automotive Devices

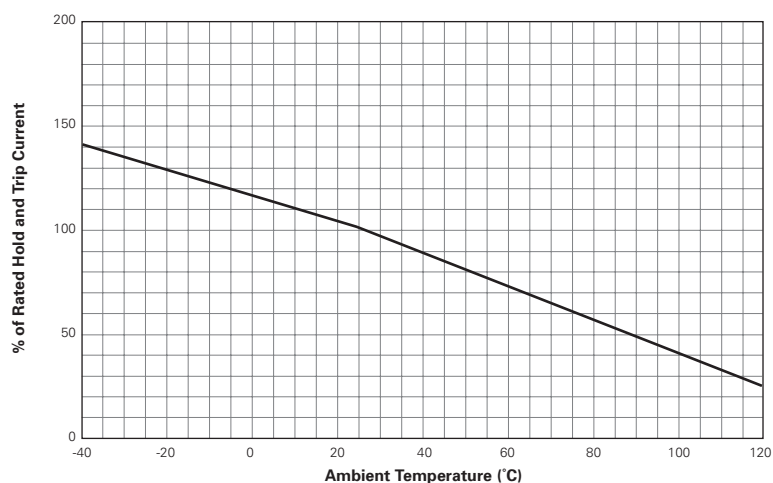
A = AGRF  
B = AHRF

Figure A1



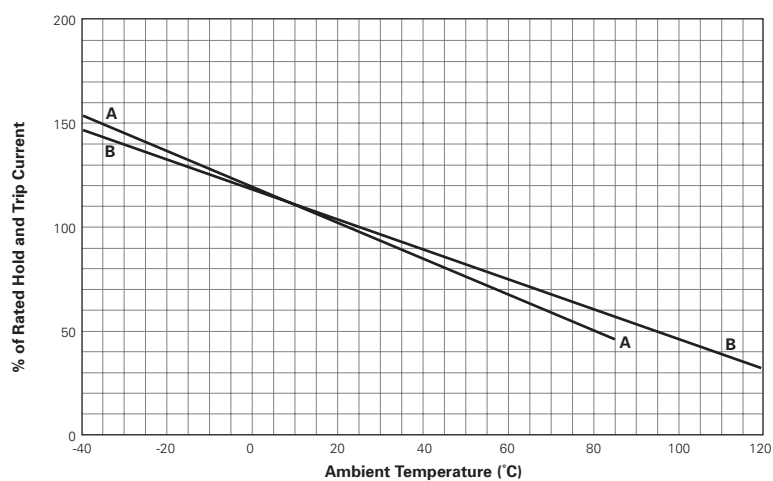
AHEF

Figure A2

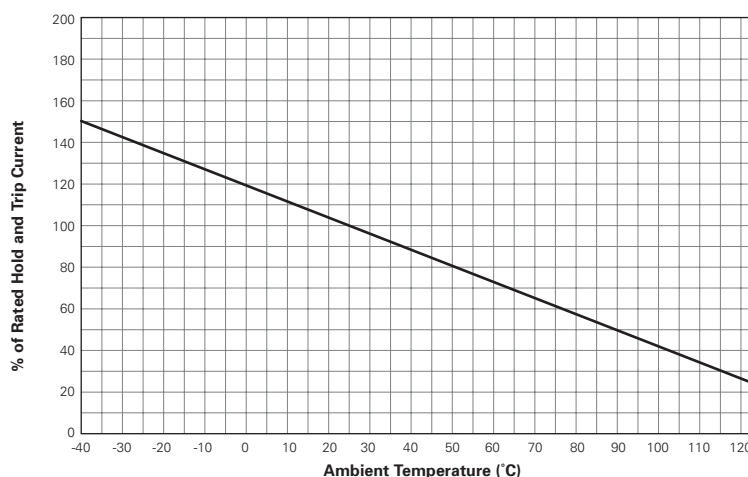


A = ASMD, nanoASMD, microASMD, miniASMD  
B = AHS

Figure A3



BD

**Figure A4**

**Table A3 Electrical Characteristics for PolySwitch Automotive Devices**

| Part Number             | I <sub>H</sub> (A)@<br>R <sub>1MAX</sub> | I <sub>H</sub> (A)@<br>R <sub>aMAX</sub> | I <sub>T</sub><br>(A) | V <sub>MAX</sub><br>(V <sub>DC</sub> ) | I <sub>MAX</sub><br>(A) | P <sub>D Typ</sub><br>(W) | Max. Time-to-trip<br>(A) (s) |      | R <sub>MIN</sub><br>(Ω) | R <sub>1MAX</sub><br>(Ω) | R <sub>aMAX</sub><br>(Ω) | Figure for Dimensions |
|-------------------------|------------------------------------------|------------------------------------------|-----------------------|----------------------------------------|-------------------------|---------------------------|------------------------------|------|-------------------------|--------------------------|--------------------------|-----------------------|
| AGRF                    |                                          |                                          |                       |                                        |                         |                           |                              |      |                         |                          |                          |                       |
| 16V — Radial-leaded     |                                          |                                          |                       |                                        |                         |                           |                              |      |                         |                          |                          |                       |
| AGRF400                 | 4.0                                      | 3.0                                      | 7.6                   | 16                                     | 100                     | 2.5                       | 20.0                         | 2.0  | 0.0186                  | 0.0610                   | 0.0850                   | A5, A8, A9            |
| AGRF500                 | 5.0                                      | 4.3                                      | 9.4                   | 16                                     | 100                     | 2.7                       | 25.0                         | 2.5  | 0.0140                  | 0.0340                   | 0.0480                   | A5, A8, A9            |
| AGRF600                 | 6.0                                      | 5.3                                      | 10.7                  | 16                                     | 100                     | 2.8                       | 30.0                         | 3.5  | 0.0095                  | 0.0280                   | 0.0320                   | A5, A8, A9            |
| AGRF700                 | 7.0                                      | 6.5                                      | 13.2                  | 16                                     | 100                     | 3.0                       | 35.0                         | 4.0  | 0.0066                  | 0.0200                   | 0.0220                   | A5, A8, A9            |
| AGRF800                 | 8.0                                      | 7.6                                      | 15.0                  | 16                                     | 100                     | 3.2                       | 40.0                         | 5.5  | 0.0049                  | 0.0175                   | 0.0181                   | A5, A8, A9            |
| AGRF900                 | 9.0                                      | 8.6                                      | 16.5                  | 16                                     | 100                     | 3.4                       | 45.0                         | 6.0  | 0.0041                  | 0.0135                   | 0.0140                   | A5, A8, A9            |
| AGRF1000                | 10.0                                     | 9.6                                      | 18.5                  | 16                                     | 100                     | 3.6                       | 50.0                         | 7.0  | 0.0034                  | 0.0102                   | 0.0106                   | A5, A8, A9            |
| AGRF1100                | 11.0                                     | 10.5                                     | 20.3                  | 16                                     | 100                     | 3.7                       | 55.0                         | 7.5  | 0.0033                  | 0.0089                   | 0.0093                   | A5, A8, A9            |
| AGRF1200                | 12.0                                     | 11.5                                     | 22.1                  | 16                                     | 100                     | 4.2                       | 60.0                         | 8.0  | 0.0030                  | 0.0086                   | 0.0091                   | A5, A8, A9            |
| AGRF1400                | 14.0                                     | 13.0                                     | 27.3                  | 16                                     | 100                     | 4.6                       | 70.0                         | 9.0  | 0.0022                  | 0.0064                   | 0.0067                   | A5, A8, A9            |
| AHRF (High Temperature) |                                          |                                          |                       |                                        |                         |                           |                              |      |                         |                          |                          |                       |
| 30V — Radial-leaded     |                                          |                                          |                       |                                        |                         |                           |                              |      |                         |                          |                          |                       |
| AHRF050                 | 0.5                                      | 0.5                                      | 1.0                   | 30                                     | 40                      | 0.9                       | 2.5                          | 3.0  | 0.3500                  | 1.100                    | 1.100                    | A8, A9, A11           |
| AHRF070                 | 0.7                                      | 0.7                                      | 1.4                   | 30                                     | 40                      | 1.4                       | 3.5                          | 3.2  | 0.2300                  | 0.800                    | 0.800                    | A5, A8, A9            |
| AHRF100                 | 1.0                                      | 1.0                                      | 1.9                   | 30                                     | 40                      | 1.4                       | 5.0                          | 6.2  | 0.1500                  | 0.430                    | 0.430                    | A8, A9, A10           |
| AHRF (High Temperature) |                                          |                                          |                       |                                        |                         |                           |                              |      |                         |                          |                          |                       |
| 16V — Radial-leaded     |                                          |                                          |                       |                                        |                         |                           |                              |      |                         |                          |                          |                       |
| AHRF200                 | 2.0                                      | 2.0                                      | 3.8                   | 16                                     | 100                     | 1.4                       | 10.0                         | 4.8  | 0.0390                  | 0.1100                   | 0.1100                   | A8, A9, A10           |
| AHRF300                 | 3.0                                      | 3.0                                      | 6.5                   | 16                                     | 100                     | 3.0                       | 15.0                         | 5.0  | 0.0290                  | 0.0790                   | 0.0790                   | A5, A8, A9            |
| AHRF400                 | 4.0                                      | 4.0                                      | 7.4                   | 16                                     | 100                     | 3.3                       | 20.0                         | 5.0  | 0.0210                  | 0.0600                   | 0.0600                   | A5, A8, A9            |
| AHRF450                 | 4.5                                      | 4.5                                      | 8.7                   | 16                                     | 100                     | 3.6                       | 22.5                         | 4.0  | 0.0170                  | 0.0540                   | 0.0540                   | A5, A8, A9            |
| AHRF550                 | 5.5                                      | 5.5                                      | 10.0                  | 16                                     | 100                     | 3.5                       | 27.5                         | 6.0  | 0.0130                  | 0.0370                   | 0.0370                   | A5, A8, A9            |
| AHRF600                 | 6.0                                      | 6.0                                      | 12.0                  | 16                                     | 100                     | 4.1                       | 30.0                         | 6.5  | 0.0100                  | 0.0320                   | 0.0320                   | A5, A8, A9            |
| AHRF650                 | 6.5                                      | 6.5                                      | 13.7                  | 16                                     | 100                     | 4.3                       | 32.5                         | 7.0  | 0.0090                  | 0.0260                   | 0.0260                   | A5, A8, A9            |
| AHRF700                 | 7.0                                      | 7.0                                      | 13.1                  | 16                                     | 100                     | 4.0                       | 35.0                         | 7.0  | 0.0087                  | 0.0250                   | 0.0250                   | A5, A8, A9            |
| AHRF750                 | 7.5                                      | 7.5                                      | 14.8                  | 16                                     | 100                     | 4.5                       | 37.5                         | 8.0  | 0.0074                  | 0.0220                   | 0.0220                   | A5, A8, A9            |
| AHRF800                 | 8.0                                      | 8.0                                      | 15.0                  | 16                                     | 100                     | 4.2                       | 40.0                         | 8.0  | 0.0072                  | 0.0200                   | 0.0200                   | A5, A8, A9            |
| AHRF900                 | 9.0                                      | 9.0                                      | 18.5                  | 16                                     | 100                     | 5.0                       | 45.0                         | 11.5 | 0.0061                  | 0.0170                   | 0.0170                   | A5, A8, A9            |
| AHRF1000                | 10.0                                     | 10.0                                     | 20.5                  | 16                                     | 100                     | 5.3                       | 50.0                         | 10.5 | 0.0051                  | 0.0150                   | 0.0150                   | A5, A8, A9            |
| AHRF1100                | 11.0                                     | 11.0                                     | 21.2                  | 16                                     | 100                     | 5.5                       | 55.0                         | 11.0 | 0.0048                  | 0.0130                   | 0.0130                   | A5, A8, A9            |
| AHRF1300                | 13.0                                     | 13.0                                     | 27.0                  | 16                                     | 100                     | 6.9                       | 65.0                         | 15.0 | 0.0034                  | 0.0100                   | 0.0100                   | A5, A8, A9            |
| AHRF1400                | 14.0                                     | 14.0                                     | 28.3                  | 16                                     | 100                     | 6.9                       | 70.0                         | 15.5 | 0.0029                  | 0.0090                   | 0.0090                   | A5, A8, A9            |
| AHRF1500                | 15.0                                     | 15.0                                     | 33.0                  | 16                                     | 100                     | 7.0                       | 75.0                         | 20.0 | 0.0027                  | 0.0092                   | 0.0092                   | A5, A8, A9            |

**Table A3 Electrical Characteristics for PolySwitch Automotive Devices**

Cont'd

| Part Number             | I <sub>H</sub> (A)@<br>R <sub>1MAX</sub> | I <sub>H</sub> (A)@<br>R <sub>aMAX</sub> | I <sub>T</sub><br>(A) | V <sub>MAX</sub><br>(V <sub>DC</sub> ) | I <sub>MAX</sub><br>(A) | P <sub>D</sub> T <sub>YP</sub><br>(W) | Max. Time-to-trip<br>(A) (s) |       | R <sub>MIN</sub><br>(Ω) | R <sub>1MAX</sub><br>(Ω) | R <sub>aMAX</sub><br>(Ω) | Figure for<br>Dimensions |
|-------------------------|------------------------------------------|------------------------------------------|-----------------------|----------------------------------------|-------------------------|---------------------------------------|------------------------------|-------|-------------------------|--------------------------|--------------------------|--------------------------|
| AHEF (High Temperature) |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| 32V — Radial-leaded     |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| AHEF050                 | 0.5                                      | 0.5                                      | 1.0                   | 32                                     | 100                     | 0.9                                   | 2.5                          | 3.0   | 0.3500                  | 1.100                    | 1.100                    | A8, A9, A10              |
| AHEF070                 | 0.7                                      | 0.7                                      | 1.4                   | 32                                     | 100                     | 0.9                                   | 3.5                          | 3.2   | 0.2300                  | 0.800                    | 0.800                    | A8, A9, A11              |
| AHEF100                 | 1.0                                      | 1.0                                      | 1.9                   | 32                                     | 100                     | 1.4                                   | 5.0                          | 6.2   | 0.1500                  | 0.430                    | 0.430                    | A8, A9, A10              |
| AHEF300                 | 3.0                                      | 3.0                                      | 6.0                   | 32                                     | 100                     | 3.2                                   | 15.0                         | 5.0   | 0.0350                  | 0.110                    | 0.110                    | A8, A9, A12              |
| AHEF500                 | 5.0                                      | 5.0                                      | 10.0                  | 32                                     | 100                     | 5.3                                   | 25.0                         | 9.0   | 0.0150                  | 0.040                    | 0.040                    | A8, A9, A12              |
| AHEF750                 | 7.5                                      | 7.5                                      | 15.0                  | 32                                     | 100                     | 6.5                                   | 37.5                         | 13.0  | 0.0074                  | 0.023                    | 0.023                    | A8, A9, A12              |
| AHEF1000                | 10.0                                     | 10.0                                     | 20.0                  | 32                                     | 100                     | 7.0                                   | 50.0                         | 15.0  | 0.0060                  | 0.016                    | 0.016                    | A8, A9, A12              |
| AHS (High Temperature)  |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| 16V — Surface-mount     |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| AHS080-2018             | 0.80                                     | 0.80                                     | 2.00                  | 16                                     | 70                      | 1.5                                   | 8.0                          | 9.0   | 0.130                   | 0.550                    | 0.550                    | A6                       |
| AHS120                  | 1.20                                     | 1.20                                     | 2.30                  | 16                                     | 50                      | 2.2                                   | 8.0                          | 2.0   | 0.150                   | 0.340                    | 0.340                    | A7                       |
| AHS160                  | 1.60                                     | 1.60                                     | 3.20                  | 16                                     | 70                      | 2.2                                   | 8.0                          | 15.0  | 0.050                   | 0.150                    | 0.150                    | A7                       |
| AHS200                  | 2.00                                     | 2.00                                     | 4.00                  | 16                                     | 70                      | 2.3                                   | 8.0                          | 13.4  | 0.050                   | 0.140                    | 0.140                    | A7                       |
| AHS300                  | 3.00                                     | 3.00                                     | 6.00                  | 16                                     | 70                      | 3.0                                   | 15.0                         | 8.0   | 0.024                   | 0.083                    | 0.083                    | A7                       |
| ASMD                    |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| 16-60V — Surface-mount  |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| ASMD030F                | 0.23                                     | 0.23                                     | 0.59                  | 60                                     | 10                      | 1.1                                   | 1.15                         | 12.0  | 0.980                   | 4.800                    | 4.800                    | A7                       |
| ASMD050F                | 0.37                                     | 0.37                                     | 0.98                  | 60                                     | 10                      | 1.7                                   | 1.95                         | 20.0  | 0.290                   | 1.400                    | 1.400                    | A7                       |
| ASMD075F                | 0.60                                     | 0.60                                     | 1.48                  | 30                                     | 40                      | 1.1                                   | 3.00                         | 20.0  | 0.290                   | 1.000                    | 1.000                    | A7                       |
| ASMD100F                | 0.90                                     | 0.90                                     | 2.16                  | 30                                     | 40                      | 1.1                                   | 4.50                         | 20.0  | 0.098                   | 0.480                    | 0.480                    | A7                       |
| ASMD125F                | 1.04                                     | 1.04                                     | 2.46                  | 16                                     | 40                      | 1.1                                   | 5.20                         | 20.0  | 0.057                   | 0.250                    | 0.250                    | A7                       |
| ASMD150F                | 1.27                                     | 1.27                                     | 2.95                  | 16                                     | 40                      | 1.2                                   | 6.35                         | 25.0  | 0.049                   | 0.250                    | 0.250                    | A7                       |
| ASMD185F                | 1.85                                     | 1.85                                     | 3.70                  | 16                                     | 40                      | 1.5                                   | 9.25                         | 11.3  | 0.032                   | 0.126                    | 0.126                    | A7                       |
| ASMD200F                | 1.73                                     | 1.73                                     | 3.93                  | 16                                     | 40                      | 1.2                                   | 8.65                         | 30.0  | 0.050                   | 0.120                    | 0.120                    | A7                       |
| ASMD250F                | 1.97                                     | 1.97                                     | 5.00                  | 16                                     | 40                      | 1.2                                   | 9.85                         | 30.0  | 0.035                   | 0.085                    | 0.085                    | A7                       |
| nanoASMDC               |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| 16-48V — Surface-mount  |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| nanoASMDC012F           | 0.12                                     | 0.12                                     | 0.39                  | 48                                     | 10                      | 0.5                                   | 1.0                          | 0.2   | 1.40                    | 6.50                     | 6.50                     | A15                      |
| nanoASMDC016F           | 0.16                                     | 0.16                                     | 0.45                  | 48                                     | 10                      | 0.5                                   | 1.0                          | 0.3   | 1.10                    | 5.00                     | 5.00                     | A15                      |
| nanoASMDC020F           | 0.20                                     | 0.20                                     | 0.42                  | 24                                     | 100                     | 0.6                                   | 8.0                          | 0.1   | 0.65                    | 3.10                     | 3.10                     | A15                      |
| nanoASMDC035F           | 0.35                                     | 0.75                                     | 0.75                  | 16                                     | 20                      | 0.6                                   | 3.5                          | 0.1   | 0.45                    | 1.35                     | 1.35                     | A15                      |
| microASMD               |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| 30V — Surface-mount     |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| microASMD005F           | 0.05                                     | 0.05                                     | 0.15                  | 30                                     | 10                      | 1.0                                   | 0.25                         | 1.5   | 3.6                     | 50.0                     | 50.0                     | A15                      |
| microASMD010F           | 0.10                                     | 0.10                                     | 0.25                  | 30                                     | 10                      | 0.8                                   | 0.50                         | 1.0   | 2.1                     | 15.0                     | 15.0                     | A15                      |
| miniASMDC               |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| 16-60V — Surface-mount  |                                          |                                          |                       |                                        |                         |                                       |                              |       |                         |                          |                          |                          |
| miniASMDC010F           | 0.10                                     | 0.10                                     | 0.30                  | 60                                     | 40                      | 0.75                                  | 0.5                          | 5.000 | 0.700                   | 12.70                    | 12.70                    | A15                      |
| miniASMDC014F           | 0.14                                     | 0.14                                     | 0.28                  | 60                                     | 10                      | 0.75                                  | 8.0                          | 0.008 | 1.500                   | 6.00                     | 6.00                     | A15                      |
| miniASMDC020F           | 0.20                                     | 0.20                                     | 0.40                  | 30                                     | 10                      | 0.80                                  | 8.0                          | 0.020 | 0.600                   | 3.30                     | 3.30                     | A15                      |
| miniASMDC030F           | 0.30                                     | 0.30                                     | 0.60                  | 30                                     | 40                      | 0.80                                  | 8.0                          | 0.100 | 0.200                   | 1.75                     | 1.75                     | A15                      |
| miniASMDC050F           | 0.50                                     | 0.50                                     | 1.00                  | 24                                     | 100                     | 0.80                                  | 8.0                          | 0.150 | 0.150                   | 1.00                     | 1.00                     | A15                      |
| miniASMDC075F/24        | 0.75                                     | 0.75                                     | 1.50                  | 24                                     | 40                      | 0.80                                  | 8.0                          | 0.300 | 0.090                   | 0.29                     | 0.29                     | A15                      |
| miniASMDC110F/16        | 1.10                                     | 1.10                                     | 2.20                  | 16                                     | 100                     | 0.80                                  | 8.0                          | 0.300 | 0.060                   | 0.18                     | 0.18                     | A15                      |
| miniASMDC110F/24        | 1.10                                     | 1.10                                     | 2.20                  | 24                                     | 20                      | 0.80                                  | 8.0                          | 0.500 | 0.060                   | 0.18                     | 0.18                     | A15                      |
| miniASMDC125F/16        | 1.25                                     | 1.25                                     | 2.50                  | 16                                     | 100                     | 0.80                                  | 8.0                          | 0.400 | 0.050                   | 0.14                     | 0.14                     | A15                      |
| miniASMDC150F/16        | 1.50                                     | 1.50                                     | 2.80                  | 16                                     | 100                     | 0.80                                  | 8.0                          | 0.500 | 0.040                   | 0.11                     | 0.11                     | A15                      |
| miniASMDC150F/24        | 1.50                                     | 1.50                                     | 3.00                  | 24                                     | 20                      | 1.00                                  | 8.0                          | 1.500 | 0.040                   | 0.12                     | 0.12                     | A15                      |
| miniASMDC260F/16        | 2.60                                     | 2.60                                     | 5.00                  | 16                                     | 100                     | 1.20                                  | 8.0                          | 5.000 | 0.015                   | 0.05                     | 0.05                     | A15                      |

**Table A3 Electrical Characteristics for PolySwitch Automotive Devices**

Cont'd

| Part Number         | I <sub>H</sub> (A)@<br>R <sub>1MAX</sub> | I <sub>H</sub> (A)@<br>R <sub>aMAX</sub> | I <sub>T</sub><br>(A) | V <sub>MAX</sub><br>(V <sub>DC</sub> ) | I <sub>MAX</sub><br>(A) | P <sub>D Typ</sub><br>(W) | Max. Time-to-trip<br>(A) (s) |    | R <sub>MIN</sub><br>(Ω) | R <sub>1MAX</sub><br>(Ω) | R <sub>aMAX</sub><br>(Ω) | Figure for<br>Dimensions |
|---------------------|------------------------------------------|------------------------------------------|-----------------------|----------------------------------------|-------------------------|---------------------------|------------------------------|----|-------------------------|--------------------------|--------------------------|--------------------------|
| BD                  |                                          |                                          |                       |                                        |                         |                           |                              |    |                         |                          |                          |                          |
| 14V — Bladed Device |                                          |                                          |                       |                                        |                         |                           |                              |    |                         |                          |                          |                          |
| BD280-1130-10/16    | 8                                        | 8                                        | 13                    | 14                                     | 100                     | 4.4                       | 40                           | 8  | 0.0095                  | 0.0185                   | 0.0185                   | A13                      |
| BD280-1130-15/16    | 12                                       | 12                                       | 20                    | 14                                     | 100                     | 4.5                       | 60                           | 8  | 0.0050                  | 0.0070                   | 0.0070                   | A13                      |
| BD280-1130-20/16    | 16                                       | 16                                       | 26                    | 14                                     | 100                     | 5.2                       | 80                           | 10 | 0.0028                  | 0.0064                   | 0.0064                   | A13                      |
| BD280-1927-25/16-W  | 20                                       | 20                                       | 32                    | 14                                     | 100                     | 6.0                       | 100                          | 13 | 0.0024                  | 0.0042                   | 0.0042                   | A14                      |
| BD280-1927-30/16-W  | 21                                       | 21                                       | 38                    | 14                                     | 100                     | 6.2                       | 120                          | 13 | 0.0021                  | 0.0043                   | 0.0043                   | A14                      |

**Notes:**
 $I_H$  : Hold current: maximum current device will pass without interruption in 25°C, unless otherwise specified (20°C for ASMD).

 $I_T$  : Trip current: minimum current that will switch the device from low-resistance to high-resistance in 25°C still air, unless otherwise specified.

 $V_{MAX}$  : Maximum voltage device can withstand without damage at rated current.

 $I_{MAX}$  : Maximum fault current device can withstand without damage at rated voltage.

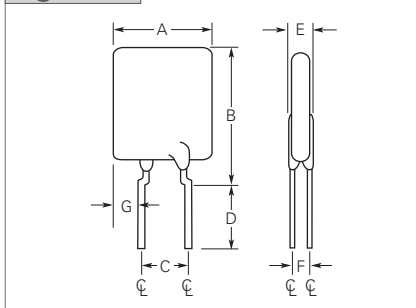
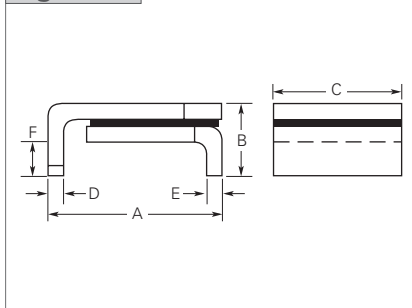
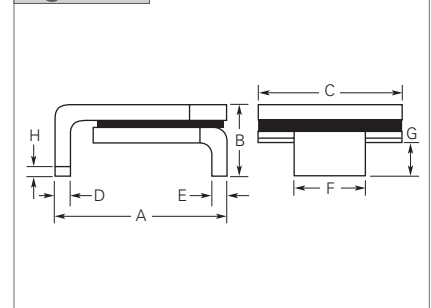
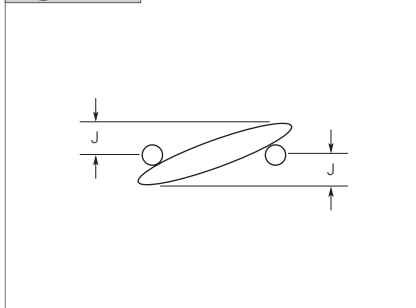
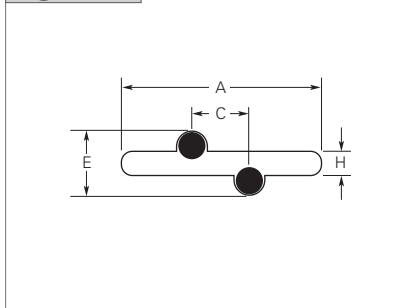
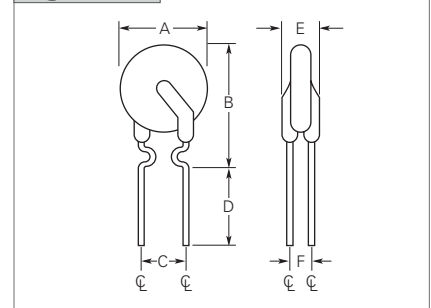
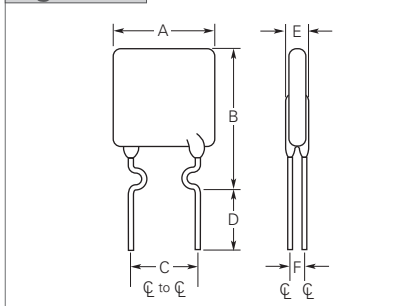
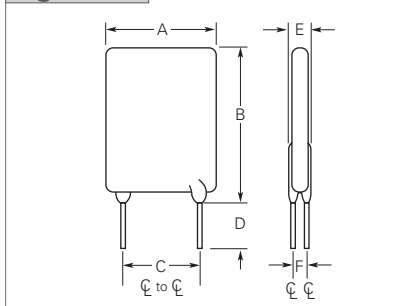
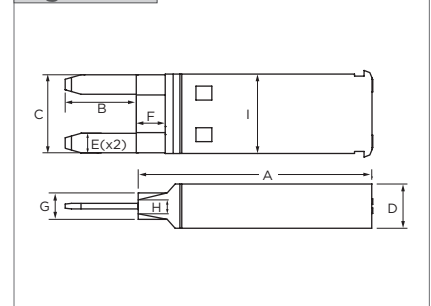
 $P_D$  : Power dissipated from device when in the tripped state in 25°C still air, unless otherwise specified.

 $R_{MIN}$  : Minimum resistance of device as supplied at 25°C, unless otherwise specified.

 $R_{1MAX}$  : Maximum resistance of device when measured one hour post reflow (surface-mount device) or one hour post trip (radial-leaded device) at 25°C unless otherwise specified.

 $R_{aMAX}$  : Maximum functional resistance of device after being subjected to the stresses described in PS400 at 25°C, unless otherwise specified.

 $R_{aMIN}$  : Minimum functional resistance of device after being subjected to the stresses described in PS400 at 25°C, unless otherwise specified.

**Figures A5-A15 Dimension Figures for PolySwitch Automotive Devices**
**Figure A5**

**Figure A6**

**Figure A7**

**Figure A8**

**Figure A9**

**Figure A10**

**Figure A11**

**Figure A12**

**Figure A13**




# Figures A5-A15 Dimension Figures for PolySwitch Automotive Devices

Cont'd

Figure A14

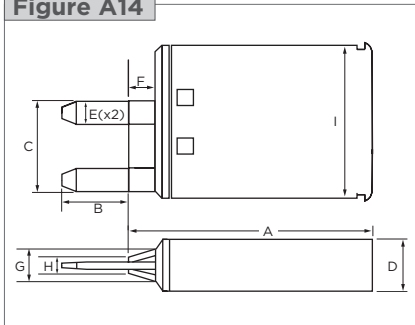
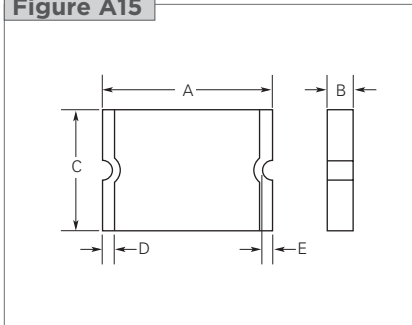


Figure A15



## Table A4 Dimensions for PolySwitch Automotive Devices in Millimeters and (Inches)

| Part Number             | A   |                  | B   |                | C             |                | D             |     | E   |               | F             |     | G   |                 | H               |               | J              |  |
|-------------------------|-----|------------------|-----|----------------|---------------|----------------|---------------|-----|-----|---------------|---------------|-----|-----|-----------------|-----------------|---------------|----------------|--|
|                         | Min | Max              | Min | Max            | Min           | Max            | Min           | Max | Min | Max           | Min           | Max | Min | Max             | Typ             | Max           | Figure         |  |
| AGRF                    |     |                  |     |                |               |                |               |     |     |               |               |     |     |                 |                 |               |                |  |
| 16V — Radial-leaded     |     |                  |     |                |               |                |               |     |     |               |               |     |     |                 |                 |               |                |  |
| AGRF400                 | —   | 8.9<br>(0.350)   | —   | 14.1<br>(0.56) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.15) | —   | —   | 3.10<br>(0.120) | 1.24<br>(0.049) | 1.4<br>(0.06) | A5, A8,<br>A9  |  |
| AGRF500                 | —   | 10.4<br>(0.410)  | —   | 15.6<br>(0.61) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 3.94<br>(0.155) | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |
| AGRF600                 | —   | 10.7<br>(0.420)  | —   | 18.4<br>(0.73) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 4.07<br>(0.160) | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |
| AGRF700                 | —   | 11.2<br>(0.440)  | —   | 21.0<br>(0.73) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 4.49<br>(0.177) | 1.24<br>(0.049) | 1.7<br>(0.07) | A5, A8,<br>A9  |  |
| AGRF800                 | —   | 12.7<br>(0.500)  | —   | 22.2<br>(0.88) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 5.08<br>(0.200) | 1.24<br>(0.049) | 1.8<br>(0.07) | A5, A8,<br>A9  |  |
| AGRF900                 | —   | 14.0<br>(0.550)  | —   | 23.0<br>(0.91) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 5.69<br>(0.224) | 1.24<br>(0.049) | 2.0<br>(0.08) | A5, A8,<br>A9  |  |
| AGRF1000                | —   | 16.51<br>(0.650) | —   | 25.7<br>(1.01) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 6.96<br>(0.274) | 1.24<br>(0.049) | 2.0<br>(0.08) | A5, A8,<br>A9  |  |
| AGRF1100                | —   | 17.5<br>(0.690)  | —   | 26.5<br>(1.04) | 4.3<br>(0.17) | 5.8<br>(0.20)  | 7.6<br>(0.3)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 7.47<br>(0.294) | 1.24<br>(0.049) | 2.4<br>(0.09) | A5, A8,<br>A9  |  |
| AGRF1200                | —   | 17.5<br>(0.690)  | —   | 28.8<br>(1.14) | 9.4<br>(0.37) | 10.9<br>(0.43) | 7.6<br>(0.3)  | —   | —   | 3.5<br>(0.14) | 1.4<br>(0.06) | —   | —   | 4.83<br>(0.190) | 1.45<br>(0.057) | 1.5<br>(0.06) | A5, A8,<br>A9  |  |
| AGRF1400                | —   | 23.5<br>(0.925)  | —   | 28.7<br>(1.13) | 9.4<br>(0.37) | 10.9<br>(0.43) | 7.6<br>(0.3)  | —   | —   | 3.5<br>(0.14) | 1.4<br>(0.06) | —   | —   | 7.82<br>(0.308) | 1.45<br>(0.057) | 1.9<br>(0.07) | A5, A8,<br>A9  |  |
| AHRF (High Temperature) |     |                  |     |                |               |                |               |     |     |               |               |     |     |                 |                 |               |                |  |
| 30V — Radial-leaded     |     |                  |     |                |               |                |               |     |     |               |               |     |     |                 |                 |               |                |  |
| AHRF050                 | —   | 7.4<br>(0.29)    | —   | 12.7<br>(0.50) | 4.3<br>(0.17) | 5.8<br>(0.23)  | 7.6<br>(0.30) | —   | —   | 3.3<br>(0.13) | 1.2<br>(0.05) | —   | —   | —<br>(0.049)    | 1.24<br>(0.049) | 1.6<br>(0.06) | A8, A9,<br>A10 |  |
| AHRF070                 | —   | 6.9<br>(0.27)    | —   | 10.8<br>(0.43) | 4.3<br>(0.17) | 5.8<br>(0.23)  | 7.6<br>(0.30) | —   | —   | 3.3<br>(0.13) | 1.2<br>(0.05) | —   | —   | —<br>(0.049)    | 1.24<br>(0.049) | 1.6<br>(0.06) | A8, A9,<br>A11 |  |
| AHRF100                 | —   | 9.7<br>(0.38)    | —   | 13.6<br>(0.54) | 4.3<br>(0.17) | 5.8<br>(0.23)  | 7.6<br>(0.30) | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —<br>(0.049)    | 1.24<br>(0.049) | 1.6<br>(0.06) | A8, A9,<br>A10 |  |

**Table A4 Dimensions for PolySwitch Automotive Devices in Millimeters and (Inches)**

Cont'd

| Part Number             | A   |                 | B   |                | C              |                | D              |     | E   |               | F             |     | G   |                 | H               |               | J              |  | Figure |
|-------------------------|-----|-----------------|-----|----------------|----------------|----------------|----------------|-----|-----|---------------|---------------|-----|-----|-----------------|-----------------|---------------|----------------|--|--------|
|                         | Min | Max             | Min | Max            | Min            | Max            | Min            | Max | Min | Max           | Min           | Max | Min | Max             | Typ             | Max           |                |  |        |
| AHRF (High Temperature) |     |                 |     |                |                |                |                |     |     |               |               |     |     |                 |                 |               |                |  |        |
| 16V — Radial-leaded     |     |                 |     |                |                |                |                |     |     |               |               |     |     |                 |                 |               |                |  |        |
| AHRF200                 | —   | 9.4<br>(0.37)   | —   | 14.4<br>(0.57) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A8, A9,<br>A10 |  |        |
| AHRF300                 | —   | 8.8<br>(0.35)   | —   | 13.8<br>(0.55) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF400                 | —   | 10.0<br>(0.39)  | —   | 15.0<br>(0.59) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF450                 | —   | 10.4<br>(0.41)  | —   | 15.6<br>(0.61) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 3.94<br>(0.155) | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF550                 | —   | 11.2<br>(0.44)  | —   | 18.9<br>(0.74) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF600                 | —   | 11.2<br>(0.44)  | —   | 21.0<br>(0.73) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 4.49<br>(0.177) | 1.24<br>(0.049) | 1.7<br>(0.07) | A5, A8,<br>A9  |  |        |
| AHRF650                 | —   | 12.7<br>(0.50)  | —   | 22.2<br>(0.88) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 5.08<br>(0.200) | 1.24<br>(0.049) | 1.8<br>(0.07) | A5, A8,<br>A9  |  |        |
| AHRF700                 | —   | 14.0<br>(0.55)  | —   | 21.9<br>(0.86) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF750                 | —   | 14.0<br>(0.55)  | —   | 23.5<br>(0.93) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 5.69<br>(0.224) | 1.24<br>(0.049) | 2.0<br>(0.08) | A5, A8,<br>A9  |  |        |
| AHRF800                 | —   | 16.5<br>(0.65)  | —   | 22.5<br>(0.88) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF900                 | —   | 16.5<br>(0.65)  | —   | 25.7<br>(1.01) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | —               | —             | A5, A8,<br>A9  |  |        |
| AHRF1000                | —   | 17.5<br>(0.69)  | —   | 26.5<br>(1.04) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | 7.47<br>(0.294) | 1.24<br>(0.049) | 1.5<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF1100                | —   | 21.0<br>(0.83)  | —   | 26.1<br>(1.03) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | 1.2<br>(0.05) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF1300                | —   | 23.5<br>(0.925) | —   | 28.7<br>(1.13) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 3.5<br>(0.14) | 1.4<br>(0.06) | —   | —   | 7.82<br>(0.308) | 1.45<br>(0.057) | 1.9<br>(0.08) | A5, A8,<br>A9  |  |        |
| AHRF1400                | —   | 23.5<br>(0.93)  | —   | 28.7<br>(1.13) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 3.6<br>(0.14) | 1.4<br>(0.06) | —   | —   | —               | 1.24<br>(0.049) | 1.6<br>(0.06) | A5, A8,<br>A9  |  |        |
| AHRF1500                | —   | 23.5<br>(0.93)  | —   | 28.7<br>(1.13) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 3.5<br>(0.14) | 1.4<br>(0.06) | —   | —   | 7.82<br>(0.308) | —               | —             | A5, A8,<br>A9  |  |        |
| AHEF (High Temperature) |     |                 |     |                |                |                |                |     |     |               |               |     |     |                 |                 |               |                |  |        |
| 32V — Radial-leaded     |     |                 |     |                |                |                |                |     |     |               |               |     |     |                 |                 |               |                |  |        |
| AHEF050                 | —   | 7.4<br>(0.29)   | —   | 12.7<br>(0.50) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.3<br>(0.13) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A10 |  |        |
| AHEF070                 | —   | 6.9<br>(0.27)   | —   | 10.8<br>(0.43) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A11 |  |        |
| AHEF100                 | —   | 9.7<br>(0.38)   | —   | 13.6<br>(0.54) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 7.6<br>(0.30)  | —   | —   | 3.0<br>(0.12) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A10 |  |        |
| AHEF300                 | —   | 10.2<br>(0.40)  | —   | 15.5<br>(0.61) | 4.32<br>(0.17) | 5.84<br>(0.23) | 7.6<br>(0.30)  | —   | —   | 3.8<br>(0.15) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A12 |  |        |
| AHEF500                 | —   | 14.0<br>(0.55)  | —   | 24.1<br>(0.95) | 4.3<br>(0.17)  | 5.8<br>(0.23)  | 11.5<br>(0.45) | —   | —   | 3.8<br>(0.15) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A12 |  |        |
| AHEF750                 | —   | 21.1<br>(0.83)  | —   | 24.9<br>(0.98) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 3.8<br>(0.15) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A12 |  |        |
| AHEF1000                | —   | 23.5<br>(0.93)  | —   | 27.9<br>(1.10) | 9.4<br>(0.37)  | 10.9<br>(0.43) | 7.6<br>(0.30)  | —   | —   | 4.0<br>(0.16) | —             | —   | —   | —               | —               | —             | A8, A9,<br>A12 |  |        |

**Table A4 Dimensions for PolySwitch Automotive Devices in Millimeters and (Inches)**

Cont'd

| Part Number            | A               |                 | B               |                 | C               |                 | D               |                 | E               |                 | F                |                 | G               |                 | H               |     | Figure |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----|--------|
|                        | Min             | Max             | Min             | Max             | Min             | Max             | Min             | Max             | Min             | Max             | Min              | Max             | Min             | Max             | Min             | Max |        |
| AHS (High Temperature) |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| 16V — Surface-mount    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| AHS080-2018            | 4.72<br>(0.186) | 5.44<br>(0.214) | —               | 1.52<br>(0.060) | 4.22<br>(0.166) | 4.93<br>(0.194) | 0.25<br>(0.010) | 0.36<br>(0.014) | 0.25<br>(0.010) | 0.36<br>(0.014) | 0.30<br>(0.012)  | 0.46<br>(0.018) | —               | —               | —               | —   | A6     |
| NEW AHS120             | 6.73<br>(0.265) | 7.98<br>(0.314) | —               | 3.00<br>(0.118) | 4.8<br>(0.19)   | 5.44<br>(0.214) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 2.16<br>(0.085)  | 2.41<br>(0.095) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| AHS160                 | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.24)   | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| AHS200                 | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.240)  | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| AHS300                 | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.240)  | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD                   |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| 16-60V — Surface-mount |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| ASMD030F               | 6.73<br>(0.265) | 7.98<br>(0.314) | —               | 3.18<br>(0.125) | 4.8<br>(0.19)   | 5.44<br>(0.214) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 2.16<br>(0.085)  | 2.41<br>(0.095) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD050F               | 6.73<br>(0.265) | 7.98<br>(0.314) | —               | 3.18<br>(0.125) | 4.8<br>(0.19)   | 5.44<br>(0.214) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 2.16<br>(0.085)  | 2.41<br>(0.095) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD075F               | 6.73<br>(0.265) | 7.98<br>(0.314) | —               | 3.18<br>(0.125) | 4.8<br>(0.19)   | 5.44<br>(0.214) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 2.16<br>(0.085)  | 2.41<br>(0.095) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD100F               | 6.73<br>(0.265) | 7.98<br>(0.314) | —               | 3.00<br>(0.118) | 4.8<br>(0.19)   | 5.44<br>(0.214) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 2.16<br>(0.085)  | 2.41<br>(0.095) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD125F               | 6.73<br>(0.265) | 7.98<br>(0.314) | —               | 3.00<br>(0.118) | 4.8<br>(0.19)   | 5.44<br>(0.214) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 2.16<br>(0.085)  | 2.41<br>(0.095) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD150F               | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.24)   | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD185F               | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.24)   | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD200F               | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.24)   | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
| ASMD250F               | 8.00<br>(0.315) | 9.40<br>(0.370) | —               | 3.00<br>(0.118) | 6.0<br>(0.24)   | 6.71<br>(0.264) | 0.56<br>(0.022) | 0.71<br>(0.028) | 0.56<br>(0.022) | 0.71<br>(0.028) | 3.68<br>(0.145)  | 3.94<br>(0.155) | 0.66<br>(0.026) | 1.37<br>(0.054) | 0.43<br>(0.017) | —   | A7     |
|                        |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| Part Number            | A               |                 | B               |                 | C               |                 | D               |                 | E               |                 | F                |                 | G               |                 | H               |     | Figure |
|                        | Min             | Max             | Min             | Max             | Min             | Max             | Min             | Max             | Min             | Max             | Min              | Max             | Min             | Max             | Min             | Max |        |
| nanoASMD               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| 30V — Surface-mount    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| nanoASMD012F           |                 |                 | 3.00<br>(0.118) | 3.40<br>(0.134) | 0.62<br>(0.024) | 1.00<br>(0.039) | 1.37<br>(0.054) | 1.80<br>(0.071) | 0.25<br>(0.010) | 0.75<br>(0.030) | 0.076<br>(0.003) | —               |                 |                 |                 |     | A15    |
| nanoASMD016F           |                 |                 | 3.00<br>(0.118) | 3.40<br>(0.134) | 0.62<br>(0.024) | 1.00<br>(0.039) | 1.37<br>(0.054) | 1.80<br>(0.071) | 0.25<br>(0.010) | 0.75<br>(0.030) | 0.076<br>(0.003) | —               |                 |                 |                 |     | A15    |
| nanoASMD020F           |                 |                 | 3.00<br>(0.118) | 3.40<br>(0.134) | 0.58<br>(0.023) | 0.82<br>(0.032) | 1.37<br>(0.054) | 1.80<br>(0.071) | 0.25<br>(0.010) | 0.75<br>(0.030) | 0.076<br>(0.003) | —               |                 |                 |                 |     | A15    |
| nanoASMD035F           |                 |                 | 3.00<br>(0.118) | 3.40<br>(0.134) | 0.58<br>(0.023) | 0.82<br>(0.032) | 1.37<br>(0.054) | 1.80<br>(0.071) | 0.25<br>(0.010) | 0.75<br>(0.030) | 0.076<br>(0.003) | —               |                 |                 |                 |     | A15    |
| microASMD              |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| 30V — Surface-mount    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |     |        |
| microASMD005F          |                 |                 | 3.0<br>(0.118)  | 3.43<br>(0.135) | 0.50<br>(0.019) | 0.85<br>(0.034) | 2.35<br>(0.092) | 2.80<br>(0.110) | 0.25<br>(0.010) | 0.75<br>(0.030) | 0.076<br>(0.003) | —               |                 |                 |                 |     | A15    |
| microASMD010F          |                 |                 | 3.0<br>(0.118)  | 3.43<br>(0.135) | 0.50<br>(0.019) | 0.85<br>(0.034) | 2.35<br>(0.092) | 2.80<br>(0.110) | 0.25<br>(0.010) | 0.75<br>(0.030) | 0.076<br>(0.003) | —               |                 |                 |                 |     | A15    |

**Table A4 Dimensions for PolySwitch Automotive Devices in Millimeters and (Inches)**

Cont'd

| Part Number            | A               |                 | B                |                 | C               |                 | D               |                 | E               |     | Figure |
|------------------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----|--------|
|                        | Min             | Max             | Min              | Max             | Min             | Max             | Min             | Max             | Min             | Max |        |
| miniASMDC              |                 |                 |                  |                 |                 |                 |                 |                 |                 |     |        |
| 16-60V — Surface-mount |                 |                 |                  |                 |                 |                 |                 |                 |                 |     |        |
| miniASMDC010F          | 4.37<br>(0.172) | 4.73<br>(0.186) | 0.635<br>(0.025) | 0.89<br>(0.035) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC014F          | 4.37<br>(0.172) | 4.73<br>(0.186) | 0.635<br>(0.025) | 0.89<br>(0.035) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC020F          | 4.37<br>(0.172) | 4.73<br>(0.186) | 0.635<br>(0.025) | 0.89<br>(0.035) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC030F          | 4.37<br>(0.172) | 4.73<br>(0.186) | 0.635<br>(0.025) | 0.89<br>(0.035) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC050F          | 4.37<br>(0.172) | 4.73<br>(0.186) | 0.38<br>(0.015)  | 0.62<br>(0.025) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC075F/24       | 4.37<br>(0.172) | 4.83<br>(0.190) | 0.81<br>(0.032)  | 1.46<br>(0.057) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC110F/16       | 4.37<br>(0.172) | 4.83<br>(0.190) | 0.28<br>(0.011)  | 0.48<br>(0.019) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC110F/24       | 4.37<br>(0.172) | 4.83<br>(0.190) | 0.81<br>(0.032)  | 1.46<br>(0.057) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC125F/16       | 4.37<br>(0.172) | 4.83<br>(0.190) | 0.28<br>(0.011)  | 0.48<br>(0.019) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC150F/16       | 4.37<br>(0.172) | 4.83<br>(0.190) | 0.28<br>(0.011)  | 0.48<br>(0.019) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC150F/24       | 4.37<br>(0.172) | 4.83<br>(0.190) | 1.00<br>(0.040)  | 1.94<br>(0.077) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |
| miniASMDC260F/16       | 4.37<br>(0.172) | 4.83<br>(0.190) | 1.02<br>(0.042)  | 1.52<br>(0.060) | 3.07<br>(0.121) | 3.41<br>(0.134) | 0.25<br>(0.010) | 0.95<br>(0.040) | 0.20<br>(0.008) | —   | A15    |

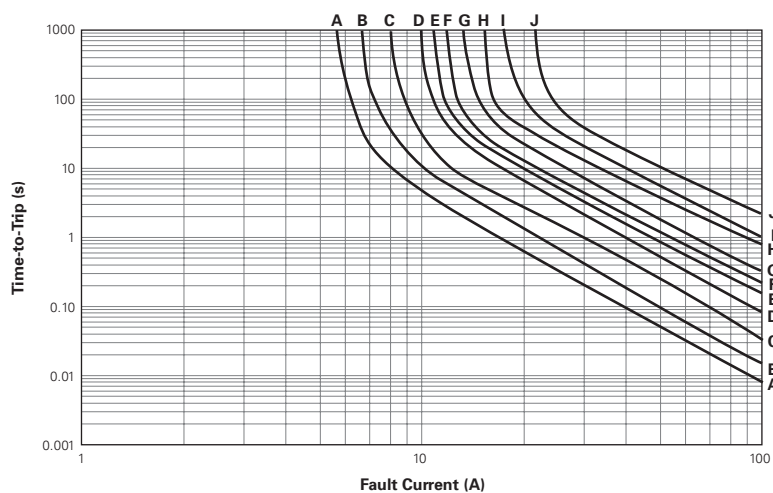
| Part Number         | A       |         | B       |         | C       |         | D       |         | E(x2)   |         | F       |         | G       |         | H       |         | I       |         | Figure |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
|                     | Min     | Max     | Min     | Max     | Min     | Max     | Min     | Max     | Min     | Max     | Min     | Max     | Min     | Max     | Min     | Max     | Min     | Max     |        |
| BD                  |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |        |
| 14V — Bladed Device |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |        |
| BD280-1130-10/16    | 29.50   | 30.10   | 8.70    | 9.30    | 10.75   | 11.25   | 6.05    | 6.65    | 2.55    | 3.05    | 3.30    | 3.90    | 3.40    | 4.00    | 1.70    | 2.30    | 10.90   | 11.50   | A13    |
|                     | (1.173) | (1.185) | (0.343) | (0.366) | (0.423) | (0.443) | (0.238) | (0.262) | (0.100) | (0.120) | (0.130) | (0.154) | (0.134) | (0.157) | (0.067) | (0.091) | (0.429) | (0.453) |        |
| BD280-1130-15/16    | 29.50   | 30.10   | 8.70    | 9.30    | 10.75   | 11.25   | 6.05    | 6.65    | 2.55    | 3.05    | 3.30    | 3.90    | 3.40    | 4.00    | 1.70    | 2.30    | 10.90   | 11.50   | A13    |
|                     | (1.173) | (1.185) | (0.343) | (0.366) | (0.423) | (0.443) | (0.238) | (0.262) | (0.100) | (0.120) | (0.130) | (0.154) | (0.134) | (0.157) | (0.067) | (0.091) | (0.429) | (0.453) |        |
| BD280-1130-20/16    | 29.50   | 30.10   | 8.70    | 9.30    | 10.75   | 11.25   | 6.05    | 6.65    | 2.55    | 3.05    | 3.30    | 3.90    | 3.40    | 4.00    | 1.70    | 2.30    | 10.90   | 11.50   | A13    |
|                     | (1.173) | (1.185) | (0.343) | (0.366) | (0.423) | (0.443) | (0.238) | (0.262) | (0.100) | (0.120) | (0.130) | (0.154) | (0.134) | (0.157) | (0.067) | (0.091) | (0.429) | (0.453) |        |
| BD280-1927-25/16-W  | 26.65   | 27.35   | 8.60    | 9.20    | 10.75   | 11.25   | 6.05    | 6.65    | 2.55    | 3.05    | 1.80    | 2.20    | 3.50    | 3.90    | 1.70    | 2.30    | 19.00   | 19.40   | A14    |
|                     | (1.049) | (1.077) | (0.339) | (0.362) | (0.423) | (0.443) | (0.238) | (0.262) | (0.100) | (0.120) | (0.071) | (0.087) | (0.138) | (0.154) | (0.067) | (0.091) | (0.748) | (0.764) |        |
| BD280-1927-30/16-W  | 26.65   | 27.35   | 8.60    | 9.20    | 10.75   | 11.25   | 6.05    | 6.65    | 2.55    | 3.05    | 1.80    | 2.20    | 3.50    | 3.90    | 1.70    | 2.30    | 19.00   | 19.40   | A14    |
|                     | (1.049) | (1.077) | (0.339) | (0.362) | (0.423) | (0.443) | (0.238) | (0.262) | (0.100) | (0.120) | (0.071) | (0.087) | (0.138) | (0.154) | (0.067) | (0.091) | (0.748) | (0.764) |        |

**Figures A16-A24 Typical Time-to-Trip at 25°C for PolySwitch Automotive Devices**

**AGRF**

- A = AGRF400
- B = AGRF500
- C = AGRF600
- D = AGRF700
- E = AGRF800
- F = AGRF900
- G = AGRF1000
- H = AGRF1100
- I = AGRF1200
- J = AGRF1400

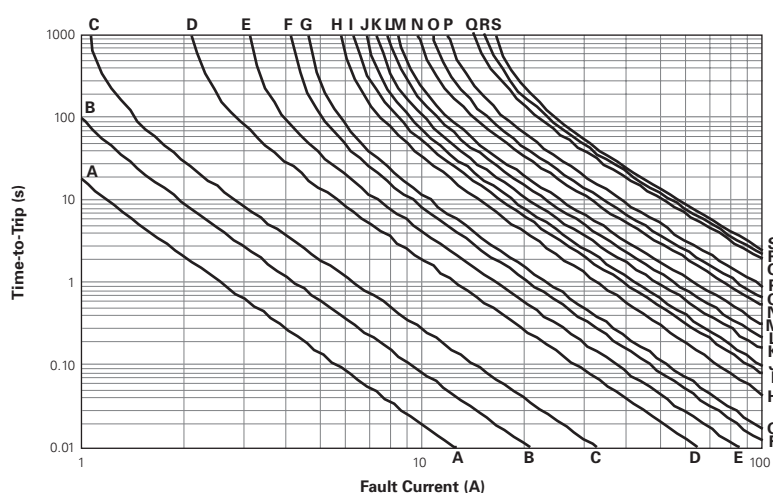
**Figure A16**



**AHRF**

- A = AHRF050
- B = AHRF070
- C = AHRF100
- D = AHRF200
- E = AHRF300
- F = AHRF400
- G = AHRF450
- H = AHRF550
- I = AHRF600
- J = AHRF650
- K = AHRF700
- L = AHRF750
- M = AHRF800
- N = AHRF900
- O = AHRF1000
- P = AHRF1100
- Q = AHRF1300
- R = AHRF1400
- S = AHRF1500

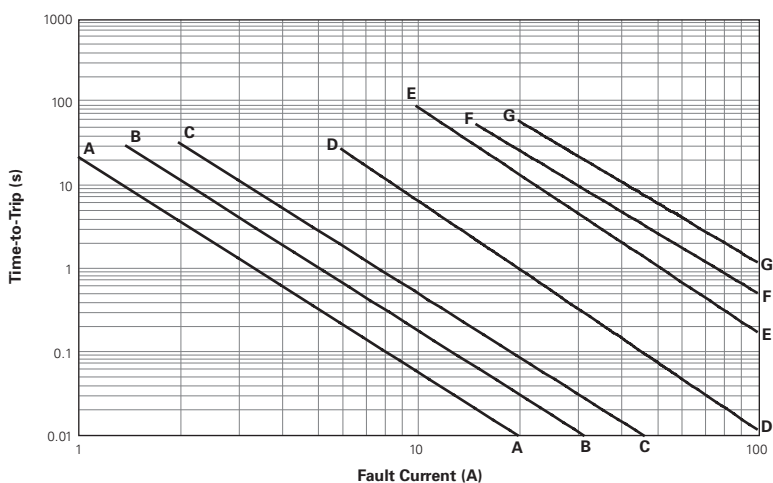
**Figure A17**



**AHEF**

- A = AHEF050
- B = AHEF070
- C = AHEF100
- D = AHEF300
- E = AHEF500
- F = AHEF750
- G = AHEF1000

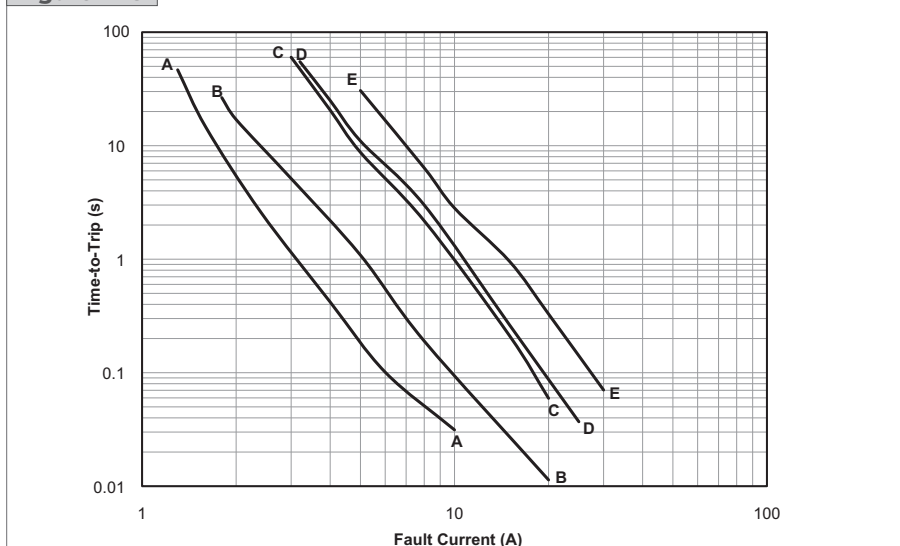
**Figure A18**



**AHS**

- A = AHS080-2018
- B = AHS120
- C = AHS160
- D = AHS200
- E = AHS300

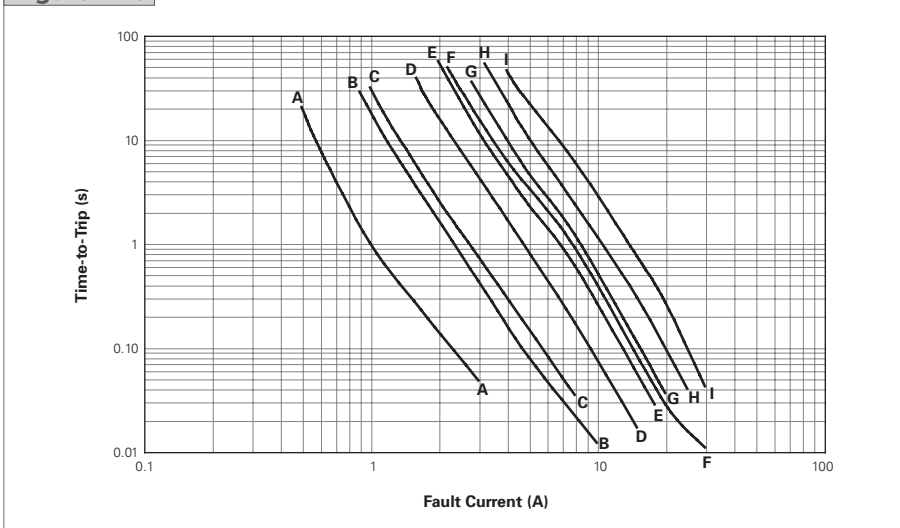
**Figure A19**



**ASMD**

- A = ASMD030F
- B = ASMD050F
- C = ASMD075F
- D = ASMD100F
- E = ASMD125F
- F = ASMD150F
- G = ASMD185F
- H = ASMD200F
- I = ASMD250F

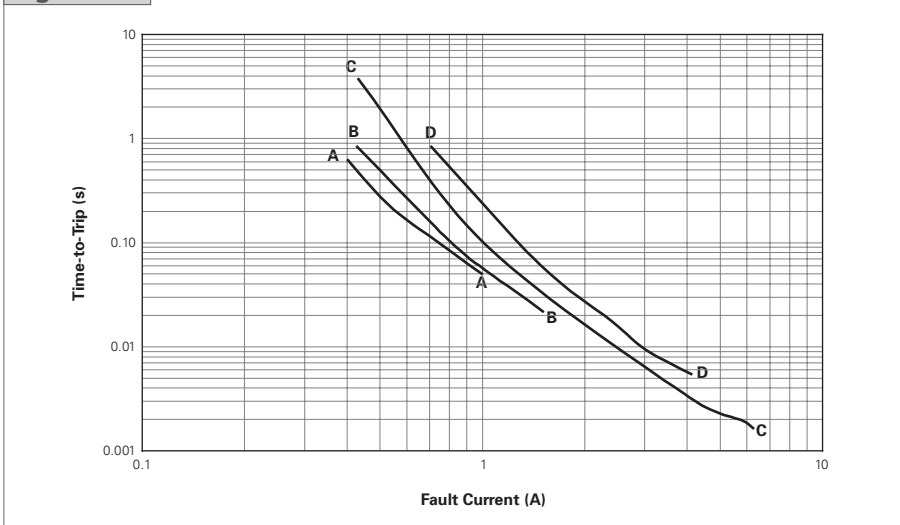
**Figure A20**



**nanoASMD**

- A = nanoASMD012F
- B = nanoASMD016F
- C = nanoASMD020F
- D = nanoASMD035F

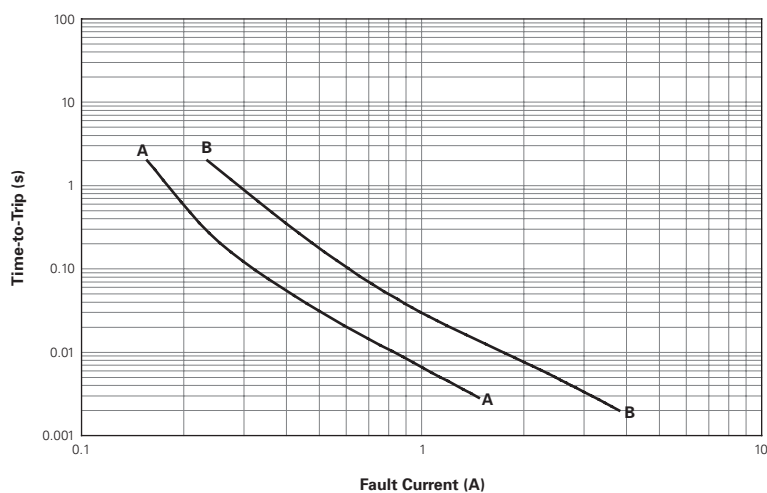
**Figure A21**



**microASMD**

- A = microASMD005F
- B = microASMD010F

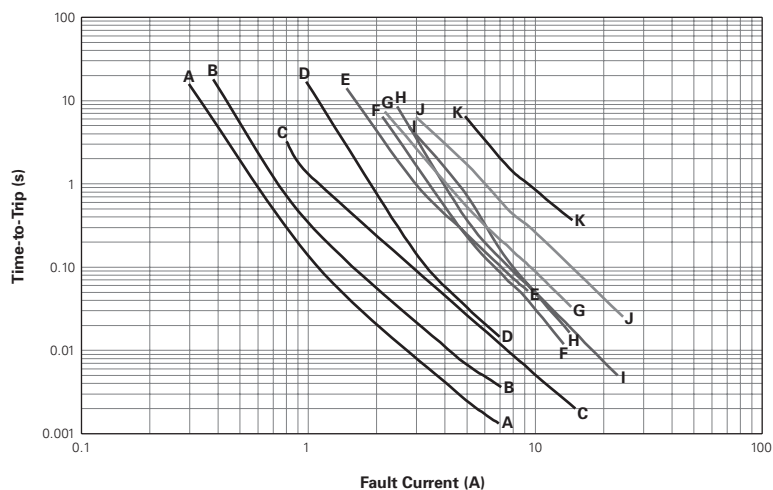
**Figure A22**



**miniASMDC**

- A = miniASMDC010F, miniASMDC014F
- B = miniASMDC020F
- C = miniASMDC030F
- D = miniASMDC050F
- E = miniASMDC075F/24
- F = miniASMDC110F/16
- G = miniASMDC110F/24
- H = miniASMDC125F/16
- I = miniASMDC150F/16
- J = miniASMDC150F/24
- K = miniASMDC260F/16

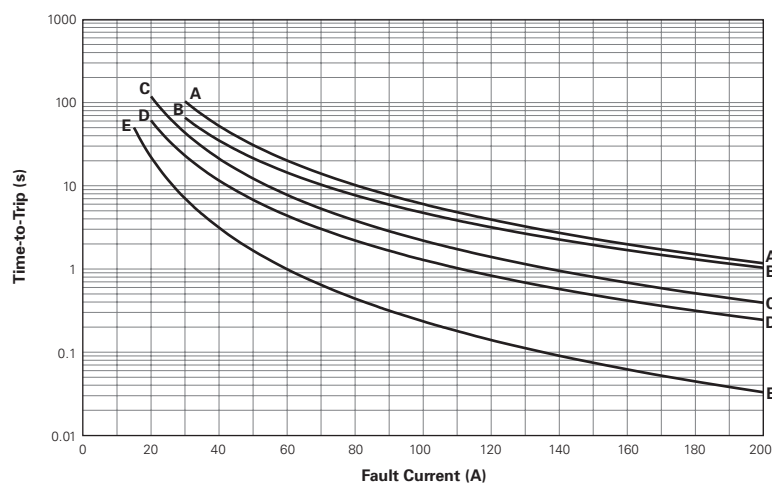
**Figure A23**



**BD**

- A = BD30A
- B = BD25A
- C = BD20A
- D = BD15A
- E = BD10A

**Figure A24**



**Table A5 Physical Characteristics and Environmental Specifications for PolySwitch Automotive Devices**
**AGRF**
**Physical Characteristics**

|                           |                                                                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Material             | AGRF400 to AGRF1100 : Tin-plated Copper, 0.52mm <sup>2</sup> (20AWG) ø 0.8 mm/0.032in<br>AGRF1200 to AGRF1400 : Tin-plated Copper, 0.82mm <sup>2</sup> (18AWG) ø 1.0mm/0.040in                   |
| Soldering Characteristics | Solderability per ANSI/J-STD-002 Category 3                                                                                                                                                      |
| Solder Heat Withstand     | AGRF400: per IEC68-2-20 Test Tb, Method 1A, Condition A: Can Withstand 5 s at 260°C ± 5°C<br>AGRF500-AGRF1400: per IEC68-2-20 Test Tb, Method 1A, Condition B: Can Withstand 10 s at 260°C ± 5°C |
| Insulating Material       | Cured, Flame-retardant Epoxy Polymer; Meets UL 94V-0                                                                                                                                             |
| Operation Temperature     | -40°C~85°C                                                                                                                                                                                       |

**Note:** See PS400 for other physical characteristics.  
Devices are not intended to be placed through a reflow process.

**Environmental Specifications**

| Test               | Conditions               | Resistance Change |
|--------------------|--------------------------|-------------------|
| Passive Aging      | 70°C, 1000 hrs           | ±5%               |
|                    | 85°C, 1000 hrs           | ±5%               |
| Humidity Aging     | 85°C, 85% RH, 1000 hrs   | ±5%               |
| Thermal Shock      | 85°C, -40°C (10 Times)   | ±5%               |
| Solvent Resistance | MIL-STD-202, Method 215F | No Change         |

**Note:** See PS400 for other environmental specifications.

**AHRF**
**Physical Characteristics**

|                           |                                                                                                                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead material             | AHRF050 to AHRF200 : Tin-plated Copper-clad Steel, 0.205mm <sup>2</sup> (24 AWG), ø 0.51mm/0.020in<br>AHRF300 to AHRF1100 : Tin-plated Copper 0.52mm <sup>2</sup> (20 AWG), ø 0.81mm/0.032in<br>AHRF1300 to AHRF1500 : Tin-plated Copper 0.82mm <sup>2</sup> (18 AWG), ø 1.0mm/0.04in |
| Soldering Characteristics | Solderability per ANSI/J-STD 002 Category 3                                                                                                                                                                                                                                           |
| Solder Heat Withstand     | Per IEC 68-2-20, Test Tb, Method 1A, Condition B; Can Withstand 10 s at 260°C ± 5°C                                                                                                                                                                                                   |
| Insulating Material       | Cured, Flame-retardant Epoxy Polymer; Meets UL 94V-0 Requirements                                                                                                                                                                                                                     |
| Operation Temperature     | -40°C~125°C                                                                                                                                                                                                                                                                           |

**Note:** See PS400 for other physical characteristics.  
Devices are not intended to be placed through a reflow process.

**Environmental Specifications**

| Test               | Conditions               | Resistance Change |
|--------------------|--------------------------|-------------------|
| Passive Aging      | 70°C, 1000 hrs           | ±5%               |
|                    | 85°C, 1000 hrs           | ±5%               |
| Humidity Aging     | 85°C, 85% RH, 1000 hrs   | ±5%               |
| Thermal Shock      | 125°C, -40°C (10 Times)  | ±5%               |
| Solvent Resistance | MIL-STD-202, Method 215F | No Change         |

**Note:** See PS400 for other environmental specifications.

**AHEF**
**Physical Characteristics**

|                           |                                                                                                                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Material             | AHEF050 to AHEF100 : Tin-plated Copper-clad Steel, 0.205mm <sup>2</sup> (24 AWG), ø 0.51mm/0.020in.<br>AHEF300 to AHEF750 : Tin-plated Copper 0.52mm <sup>2</sup> (20 AWG), ø 0.81mm/0.032in<br>AHEF1000 : Tin-plated Copper 0.82mm <sup>2</sup> (18 AWG), ø 1.0mm/0.04in |
| Soldering Characteristics | Solderability per ANSI/J-STD 002 Category 3                                                                                                                                                                                                                               |
| Solder Heat Withstand     | Per IEC 68-2-20, Test Tb, Method 1A, Condition B; Can Withstand 10 s at 260°C ± 5°C                                                                                                                                                                                       |
| Insulating Material       | Cured, Flame-retardant Epoxy Polymer; Meets UL 94V-0 Requirements                                                                                                                                                                                                         |
| Operation Temperature     | -40°C~125°C                                                                                                                                                                                                                                                               |

**Note:** See PS400 for other physical characteristics.  
Devices are not intended to be placed through a reflow process.



**Table A5 Physical Characteristics and Environmental Specifications for PolySwitch Automotive Devices** Cont'd

**AHEF**
**Environmental Specifications**

| Test               | Conditions               | Resistance Change |
|--------------------|--------------------------|-------------------|
| Passive Aging      | 70°C, 1000 hrs           | ±5%               |
|                    | 85°C, 1000 hrs           | ±5%               |
| Humidity Aging     | 85°C, 85% RH, 1000 hrs   | ±5%               |
| Thermal Shock      | 125°C, -40°C (10 Times)  | ±5%               |
| Solvent Resistance | MIL-STD-202, Method 215F | No Change         |

**Note:** See PS400 for other environmental specifications.

**AHS**
**Physical Characteristics**

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| Lead Material             | Tin-plated Brass to MIL-T-10727B                   |
| Soldering Characteristics | Solderability per ANSI-J-STD-002 Category 1        |
| Solder Heat Withstand     | Per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A |
| Flammability              | Per IEC 695-2-2 Needle Flame Test for 20 s         |
| Operation Temperature     | -40°C~125°C                                        |

**Note:** See PS400 for other physical characteristics.

**Environmental Specifications**

| Test               | Conditions              | Resistance Change |
|--------------------|-------------------------|-------------------|
| Passive Aging      | 70°C, 1000 hrs          | ±3% Typical       |
|                    | 85°C, 1000 hrs          | ±5% Typical       |
| Humidity Aging     | 85°C, 85% RH, 1000 hrs  | ±1.2% Typical     |
| Thermal Shock      | 125°C, -40°C (20 Times) | -33% Typical      |
| Solvent Resistance | Freon                   | No Change         |
|                    | Trichloroethane         | No Change         |
|                    | Hydrocarbons            | No Change         |

**Note:** See PS400 for other environmental specifications.

**ASMD**
**Physical Characteristics**

|                                |                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------|
| Terminal Pad Material          | 98%+ Tin-plated Brass                                                                           |
| Soldering Characteristics      | Solderability per ANSI-J-STD-002 Category 1                                                     |
| Solder Heat Withstand          | Per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A                                              |
| Flammability Resistance        | Per IEC 695-2-2 Needle Flame Test for 20 s                                                      |
| Recommended Storage Conditions | 40°C max, 70% RH max; Devices May Not Meet Specified Ratings if Storage Conditions are Exceeded |
| Operation Temperature          | -40°C~85°C                                                                                      |

**Note:** See PS400 for other physical characteristics.

**Environmental Specifications**

| Test               | Conditions              | Resistance Change |
|--------------------|-------------------------|-------------------|
| Passive Aging      | 60°C, 1000 hrs          | ±3% Typical       |
|                    | 85°C, 1000 hrs          | ±5% Typical       |
| Humidity Aging     | 85°C, 85% RH, 100 hrs   | ±1.2% Typical     |
| Thermal Shock      | 85°C, -40°C (20 Times)  | -33% Typical      |
|                    | 125°C, -55°C (10 Times) | -33% Typical      |
| Solvent Resistance | Freon                   | No Change         |
|                    | Trichloroethane         | No Change         |
|                    | Hydrocarbons            | No Change         |

**Note:** See PS400 for other environmental specifications.

**Table A5 Physical Characteristics and Environmental Specifications for PolySwitch Automotive Devices** Cont'd

**nanoASMDC/microASMD/miniASMDC**
**Physical Characteristics**

|                                |                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------|
| Terminal Pad Material          | 100% Matte Tin with Nickel Underplate                                                           |
| Soldering Characteristics      | Solderability per ANSI-J-STD-002 Category 3                                                     |
| Solder Heat Withstand          | Per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A                                              |
| Flammability Resistance        | Per IEC 695-2-2 Needle Flame Test for 20 s                                                      |
| Recommended Storage Conditions | 40°C max, 70% RH max; Devices May Not Meet Specified Ratings if Storage Conditions are Exceeded |
| Operation Temperature          | -40°C~85°C                                                                                      |

**Note:** See PS400 for other physical characteristics.

**Environmental Specifications**

| Test               | Conditions              | Resistance Change |
|--------------------|-------------------------|-------------------|
| Passive Aging      | 60°C, 1000 hrs          | ±3% Typical       |
|                    | 85°C, 1000 hrs          | ±5% Typical       |
| Humidity Aging     | 85°C, 85% RH, 100 hrs   | ±1.2% Typical     |
| Thermal Shock      | 85°C, -40°C (20 Times)  | -33% Typical      |
|                    | 125°C, -55°C (10 Times) | -33% Typical      |
| Solvent Resistance | Freon                   | No Change         |
|                    | Trichloroethane         | No Change         |
|                    | Hydrocarbons            | No Change         |

**Note:** See PS400 for other environmental specifications.

**BD**
**Physical Characteristics**

|                           |                                                         |
|---------------------------|---------------------------------------------------------|
| Lead Material             | Brass H65, Thickness: 0.8mm, Tin Plating Thickness: 5µm |
| Soldering Characteristics | NA                                                      |
| Solder Heat Withstand     | NA                                                      |
| Insulating Material       | Colored PBT, Meets UL94V-0 Requirements                 |
| Operation Temperature     | -40°C~125°C                                             |

**Note:** See PS400 for other physical characteristics.

**Environmental Specifications**

| Test               | Conditions                                          | Resistance Change |
|--------------------|-----------------------------------------------------|-------------------|
| Passive Aging      | 85°C, 1000 hrs                                      | ±5%               |
| Humidity Aging     | 85°C, 85% RH, 1000 hrs                              | ±5%               |
|                    | 85°C, 85% RH (with 10% I <sub>HOLD</sub> ), 500 hrs | ±5%               |
| Thermal Shock      | 85°C to -40°C (5 Times)                             | Meet SCD          |
| Solvent Resistance | MIL-STD-202, Method 215F                            | No Change         |

**Note:** See PS400 for other environmental specifications.

**Table A6 Packaging and Marking Information for PolySwitch Automotive Devices**

| Part Number                    | Bag Quantity | Tape and Reel Quantity | Ammo Pack Quantity | Standard Package Quantity | Part Marking | Agency Recognition |
|--------------------------------|--------------|------------------------|--------------------|---------------------------|--------------|--------------------|
| <b>AGRF</b>                    |              |                        |                    |                           |              |                    |
| <b>Radial-leaded</b>           |              |                        |                    |                           |              |                    |
| AGRF400                        | 500          | —                      | —                  | 10,000                    | G4           | *                  |
| AGRF400-2                      | —            | 2,500                  | —                  | 12,500                    | G4           | *                  |
| AGRF400-AP                     | —            | —                      | 2,000              | 10,000                    | G4           | *                  |
| AGRF500                        | 500          | —                      | —                  | 10,000                    | G5           | *                  |
| AGRF500-2                      | —            | 2,000                  | —                  | 10,000                    | G5           | *                  |
| AGRF500-AP                     | —            | —                      | 2,000              | 10,000                    | G5           | *                  |
| AGRF600                        | 500          | —                      | —                  | 10,000                    | G6           | *                  |
| AGRF600-2                      | —            | 2,000                  | —                  | 10,000                    | G6           | *                  |
| AGRF600-AP                     | —            | —                      | 2,000              | 10,000                    | G6           | *                  |
| AGRF700                        | 500          | —                      | —                  | 10,000                    | G7           | *                  |
| AGRF700-2                      | —            | 1,500                  | —                  | 7,500                     | G7           | *                  |
| AGRF700-AP                     | —            | —                      | 1,500              | 7,500                     | G7           | *                  |
| AGRF800                        | 500          | —                      | —                  | 10,000                    | G8           | *                  |
| AGRF800-2                      | —            | 1,000                  | —                  | 5,000                     | G8           | *                  |
| AGRF800-AP                     | —            | —                      | 1,000              | 5,000                     | G8           | *                  |
| AGRF900                        | 500          | —                      | —                  | 10,000                    | G9           | *                  |
| AGRF900-2                      | —            | 1,000                  | —                  | 5,000                     | G9           | *                  |
| AGRF900-AP                     | —            | —                      | 1,000              | 5,000                     | G9           | *                  |
| AGRF1000                       | 250          | —                      | —                  | 5,000                     | G10          | *                  |
| AGRF1000-2                     | —            | 1,000                  | —                  | 5,000                     | G10          | *                  |
| AGRF1000-AP                    | —            | —                      | 1,000              | 5,000                     | G10          | *                  |
| AGRF1100                       | 250          | —                      | —                  | 5,000                     | G11          | *                  |
| AGRF1100-2                     | —            | 1,000                  | —                  | 5,000                     | G11          | *                  |
| AGRF1100-AP                    | —            | —                      | 1,000              | 5,000                     | G11          | *                  |
| AGRF1200                       | 250          | —                      | —                  | 5,000                     | G12          | *                  |
| AGRF1200-2                     | —            | 1,000                  | —                  | 5,000                     | G12          | *                  |
| AGRF1200-AP                    | —            | —                      | 1,000              | 5,000                     | G12          | *                  |
| AGRF1400                       | 250          | —                      | —                  | 5,000                     | G14          | *                  |
| AGRF1400-2                     | —            | 1,000                  | —                  | 5,000                     | G14          | *                  |
| AGRF1400-AP                    | —            | —                      | 1,000              | 5,000                     | G14          | *                  |
| <b>AHRF (High Temperature)</b> |              |                        |                    |                           |              |                    |
| <b>Radial-leaded</b>           |              |                        |                    |                           |              |                    |
| AHRF050                        | 500          | —                      | —                  | 10,000                    | H0.5         | *                  |
| AHRF050-2                      | —            | 2,500                  | —                  | 12,500                    | H0.5         | *                  |
| AHRF050-AP                     | —            | —                      | 2,500              | 12,500                    | H0.5         | *                  |
| AHRF070                        | 500          | —                      | —                  | 10,000                    | H0.7         | *                  |
| AHRF070-2                      | —            | 2,500                  | —                  | 12,500                    | H0.7         | *                  |
| AHRF070-AP                     | —            | —                      | 2,500              | 12,500                    | H0.7         | *                  |
| AHRF100                        | 500          | —                      | —                  | 10,000                    | H1           | *                  |
| AHRF100-2                      | —            | 2,500                  | —                  | 12,500                    | H1           | *                  |
| AHRF100-AP                     | —            | —                      | 2,500              | 12,500                    | H1           | *                  |
| AHRF200                        | 500          | —                      | —                  | 10,000                    | H2           | *                  |
| AHRF200-2                      | —            | 2,500                  | —                  | 12,500                    | H2           | *                  |
| AHRF200-AP                     | —            | —                      | 2,500              | 12,500                    | H2           | *                  |
| AHRF300                        | 500          | —                      | —                  | 10,000                    | H3           | *                  |
| AHRF300-2                      | —            | 2,000                  | —                  | 10,000                    | H3           | *                  |
| AHRF300-AP                     | —            | —                      | 2,000              | 10,000                    | H3           | *                  |
| AHRF400                        | 500          | —                      | —                  | 10,000                    | H4           | *                  |
| AHRF400-2                      | —            | 1,500                  | —                  | 7,500                     | H4           | *                  |
| AHRF400-AP                     | —            | —                      | 1,500              | 7,500                     | H4           | *                  |

\* These devices are intended for use in automotive applications.

For commercial alternatives to these products please see the radial-leaded devices section or surface-mount devices section.

**Table A6 Packaging and Marking Information for PolySwitch Automotive Devices**

Cont'd

| Part Number                    | Bag Quantity | Tape and Reel Quantity | Ammo Pack Quantity | Standard Package Quantity | Part Marking | Agency Recognition |
|--------------------------------|--------------|------------------------|--------------------|---------------------------|--------------|--------------------|
| <b>AHRF (High Temperature)</b> |              |                        |                    |                           |              |                    |
| <b>Radial-leaded</b>           |              |                        |                    |                           |              |                    |
| AHRF450                        | 500          | —                      | —                  | 10,000                    | H4.5         | *                  |
| AHRF450-2                      | —            | 1,500                  | —                  | 7,500                     | H4.5         | *                  |
| AHRF450-AP                     | —            | —                      | 1,500              | 7,500                     | H4.5         | *                  |
| AHRF550                        | 500          | —                      | —                  | 10,000                    | H5.5         | *                  |
| AHRF550-2                      | —            | 2,000                  | —                  | 10,000                    | H5.5         | *                  |
| AHRF550-AP                     | —            | —                      | 2,000              | 10,000                    | H5.5         | *                  |
| AHRF600                        | 500          | —                      | —                  | 10,000                    | H6           | *                  |
| AHRF600-2                      | —            | 2,000                  | —                  | 10,000                    | H6           | *                  |
| AHRF600-AP                     | —            | —                      | 2,000              | 10,000                    | H6           | *                  |
| AHRF650                        | 500          | —                      | —                  | 10,000                    | H6.5         | *                  |
| AHRF650-2                      | —            | 1,500                  | —                  | 7,500                     | H6.5         | *                  |
| AHRF650-AP                     | —            | —                      | 1,500              | 7,500                     | H6.5         | *                  |
| AHRF700                        | 500          | —                      | —                  | 10,000                    | H7           | *                  |
| AHRF700-2                      | —            | 1,500                  | —                  | 7,500                     | H7           | *                  |
| AHRF700-AP                     | —            | —                      | 1,500              | 7,500                     | H7           | *                  |
| AHRF750                        | 500          | —                      | —                  | 10,000                    | H7.5         | *                  |
| AHRF750-2                      | —            | 1,000                  | —                  | 5,000                     | H7.5         | *                  |
| AHRF750-AP                     | —            | —                      | 1,000              | 5,000                     | H7.5         | *                  |
| AHRF800                        | 500          | —                      | —                  | 10,000                    | H8           | *                  |
| AHRF800-2                      | —            | 1,000                  | —                  | 5,000                     | H8           | *                  |
| AHRF800-AP                     | —            | —                      | 1,000              | 5,000                     | H8           | *                  |
| AHRF900                        | 250          | —                      | —                  | 5,000                     | H9           | *                  |
| AHRF900-2                      | —            | 1,000                  | —                  | 5,000                     | H9           | *                  |
| AHRF900-AP                     | —            | —                      | 1,000              | 5,000                     | H9           | *                  |
| AHRF1000                       | 250          | —                      | —                  | 5,000                     | H10          | *                  |
| AHRF1000-2                     | —            | 1,000                  | —                  | 5,000                     | H10          | *                  |
| AHRF1000-AP                    | —            | —                      | 1,000              | 5,000                     | H10          | *                  |
| AHRF1100                       | 250          | —                      | —                  | 5,000                     | H11          | *                  |
| AHRF1100-2                     | —            | 1,000                  | —                  | 5,000                     | H11          | *                  |
| AHRF1100-AP                    | —            | —                      | 1,000              | 5,000                     | H11          | *                  |
| AHRF1300                       | 250          | —                      | —                  | 5,000                     | H13          | *                  |
| AHRF1300-2                     | —            | 1,000                  | —                  | 5,000                     | H13          | *                  |
| AHRF1300-AP                    | —            | —                      | 1,000              | 5,000                     | H13          | *                  |
| AHRF1400                       | 250          | —                      | —                  | 5,000                     | H14          | *                  |
| AHRF1400-2                     | —            | 1,000                  | —                  | 5,000                     | H14          | *                  |
| AHRF1400-AP                    | —            | —                      | 1,000              | 5,000                     | H14          | *                  |
| AHRF1500                       | 250          | —                      | —                  | 5,000                     | H15          | *                  |
| AHRF1500-2                     | —            | 1,000                  | —                  | 5,000                     | H15          | *                  |
| AHRF1500-AP                    | —            | —                      | 1,000              | 5,000                     | H15          | *                  |
| <b>AHEF (High Temperature)</b> |              |                        |                    |                           |              |                    |
| <b>Radial-leaded</b>           |              |                        |                    |                           |              |                    |
| AHEF050                        | 500          | —                      | —                  | 10,000                    | E0.5         | *                  |
| AHEF070                        | 500          | —                      | —                  | 10,000                    | E0.7         | *                  |
| AHEF100                        | 500          | —                      | —                  | 10,000                    | E1           | *                  |
| AHEF300                        | 500          | —                      | —                  | 10,000                    | E3           | *                  |
| AHEF500                        | 250          | —                      | —                  | 5,000                     | E5           | *                  |
| AHEF750                        | 250          | —                      | —                  | 5,000                     | E7.5         | *                  |
| AHEF1000                       | 250          | —                      | —                  | 5,000                     | E10          | *                  |

\* These devices are intended for use in automotive applications.

For commercial alternatives to these products please see the radial-leaded devices section or surface-mount devices section.

**Table A6 Packaging and Marking Information for PolySwitch Automotive Devices**

Cont'd

|                        |                        |                           |              | Recommended Pad Layouts [mm(in)] See Figure A25] |                   |                   |                    |
|------------------------|------------------------|---------------------------|--------------|--------------------------------------------------|-------------------|-------------------|--------------------|
| Part Number            | Tape and Reel Quantity | Standard Package Quantity | Part Marking | Dimension A (Min*/Nom)                           | Dimension B (Nom) | Dimension C (Nom) | Agency Recognition |
| AHS (High Temperature) |                        |                           |              |                                                  |                   |                   |                    |
| Surface-mount          |                        |                           |              |                                                  |                   |                   |                    |
| AHS080-2018            | 4,000                  | 20,000                    | H08          | 4.6 (0.18)                                       | 1.5 (0.06)        | 3.4 (0.134)       | *                  |
| NEW                    | AHS120                 | 2,000                     | H12          | 3.1 (0.12)                                       | 2.3 (0.09)        | 5.1 (0.201)       | *                  |
|                        | AHS160                 | 1,500                     | 160          | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
|                        | AHS200                 | 1,500                     | H200         | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
|                        | AHS300                 | 1,500                     | H300         | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
|                        | ASMD                   |                           |              |                                                  |                   |                   |                    |
| Surface-mount          |                        |                           |              |                                                  |                   |                   |                    |
| ASMD030F               | 2,000                  | 10,000                    | 030F         | 3.1 (0.12)                                       | 2.3 (0.09)        | 5.1 (0.201)       | *                  |
| ASMD050F               | 2,000                  | 10,000                    | 050F         | 3.1 (0.12)                                       | 2.3 (0.09)        | 5.1 (0.201)       | *                  |
| ASMD075F               | 2,000                  | 10,000                    | 075F         | 3.1 (0.12)                                       | 2.3 (0.09)        | 5.1 (0.201)       | *                  |
| ASMD100F               | 2,000                  | 10,000                    | 100F         | 3.1 (0.12)                                       | 2.3 (0.09)        | 5.1 (0.201)       | *                  |
| ASMD125F               | 2,000                  | 10,000                    | 125F         | 3.1 (0.12)                                       | 2.3 (0.09)        | 5.1 (0.201)       | *                  |
| ASMD150F               | 1,500                  | 7,500                     | 150F         | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
| ASMD185F               | 1,500                  | 7,500                     | 185A         | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
| ASMD200F               | 1,500                  | 7,500                     | 200F         | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
| ASMD250F               | 1,500                  | 7,500                     | 250F         | 4.6 (0.18)                                       | 2.3 (0.09)        | 6.1 (0.240)       | *                  |
| nanoASMDC              |                        |                           |              |                                                  |                   |                   |                    |
| Surface-mount          |                        |                           |              |                                                  |                   |                   |                    |
| nanoASMDC012F          | 3,000                  | 15,000                    | P            | 1.60 (0.063)                                     | 1.00 (0.039)      | 2.00 (0.079)      | *                  |
| nanoASMDC016F          | 3,000                  | 15,000                    | N            | 1.60 (0.063)                                     | 1.00 (0.039)      | 2.00 (0.079)      | *                  |
| nanoASMDC020F          | 3,000                  | 15,000                    | 02           | 1.60 (0.063)                                     | 1.00 (0.039)      | 2.00 (0.079)      | *                  |
| nanoASMDC035F          | 3,000                  | 15,000                    | 03           | 1.60 (0.063)                                     | 1.00 (0.039)      | 2.00 (0.079)      | *                  |
| microASMD              |                        |                           |              |                                                  |                   |                   |                    |
| Surface-mount          |                        |                           |              |                                                  |                   |                   |                    |
| microASMD005F          | 4,000                  | 20,000                    | 05           | 2.50 (0.098)                                     | 1.00 (0.039)      | 2.00 (0.079)      | *                  |
| microASMD010F          | 4,000                  | 20,000                    | 10           | 2.50 (0.098)                                     | 1.00 (0.039)      | 2.00 (0.079)      | *                  |
| miniASMDC              |                        |                           |              |                                                  |                   |                   |                    |
| Surface-mount          |                        |                           |              |                                                  |                   |                   |                    |
| miniASMDC010F          | 2,000                  | 10,000                    | 10           | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC014F          | 2,000                  | 10,000                    | 14           | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC020F          | 2,000                  | 10,000                    | 2            | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC030F          | 2,000                  | 10,000                    | 3            | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC050F          | 2,000                  | 10,000                    | 5            | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC075F/24       | 1,500                  | 7,500                     | 075F 24V     | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC110F/16       | 2,000                  | 10,000                    | 110F 16V     | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC110F/24       | 1,500                  | 7,500                     | 110F 24V     | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC125F/16       | 2,000                  | 10,000                    | 125F 16V     | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC150F/16       | 2,000                  | 10,000                    | 150 16V      | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC150F/24       | 1,000                  | 5,000                     | 150F 24V     | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |
| miniASMDC260F/16       | 1,500                  | 7,500                     | 260F 16V     | 3.15 (0.124)                                     | 1.68 (0.066)      | 3.10 (0.122)      | *                  |

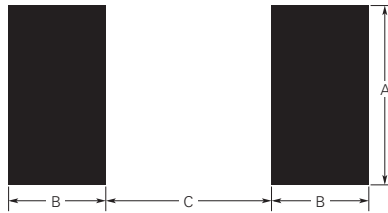
\* These devices are intended for use in automotive applications.

For commercial alternatives to these products please see the radial-leaded devices section or surface-mount devices section.

| Part Number          | Bag Quantity | Standard Package Quantity | Part Marking  | Agency Recognition |
|----------------------|--------------|---------------------------|---------------|--------------------|
| <b>BD</b>            |              |                           |               |                    |
| <b>Bladed Device</b> |              |                           |               |                    |
| BD280-1130-10/16     | 200          | 1600                      | BD280-1130-10 | *                  |
| BD280-1130-15/16     | 200          | 1600                      | BD280-1130-15 | *                  |
| BD280-1130-20/16     | 200          | 1600                      | BD280-1130-20 | *                  |
| BD280-1927-25/16-W   | 200          | 1600                      | BD280-1927-25 | *                  |
| BD280-1927-30/16-W   | 200          | 1600                      | BD280-1927-30 | *                  |

\* These devices are intended for use in automotive applications.

For commercial alternatives to these products please see the radial-leaded devices section or surface-mount devices section.

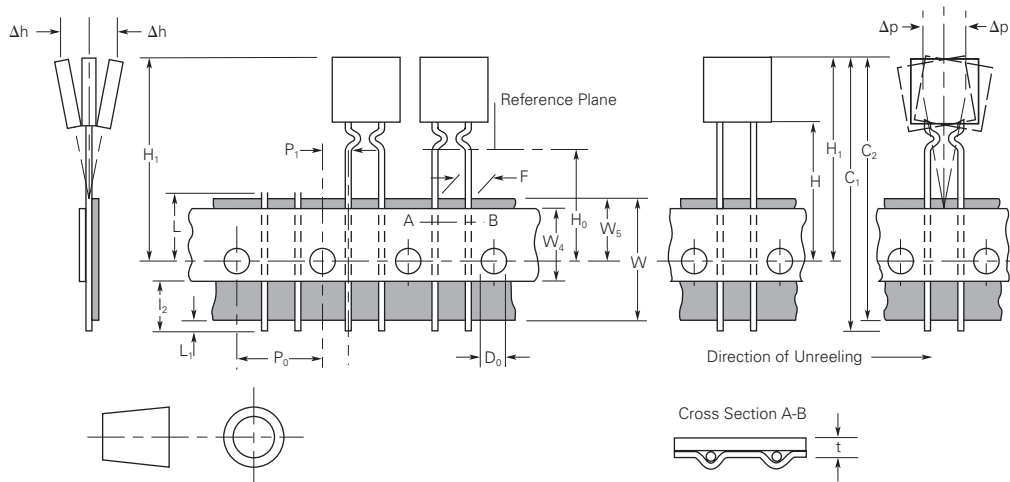
**Figure A25 Recommended Pad Layout for PolySwitch Automotive Devices**

**Table A7 Tape and Reel Specifications for AGRF/AHRF/AHEF PolySwitch Automotive Devices**

AGRF, AHRF and AHEF devices are available in tape and reel packaging per EIA468-B/IEC286-2 and EIA 481-2 standards.  
See Figures A26 and A27 for details.

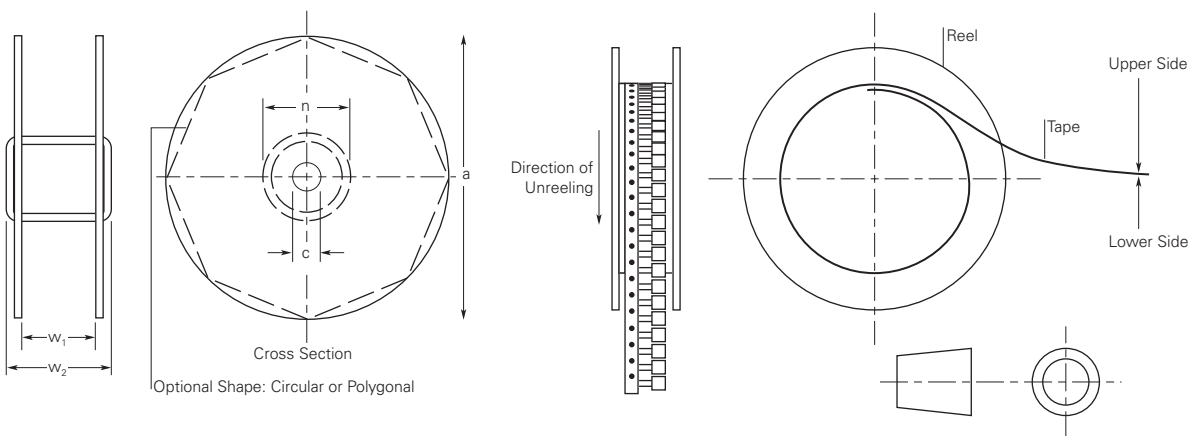
| Description                                                                                           | EIA Mark       | Dimension (mm) | Tolerance  |
|-------------------------------------------------------------------------------------------------------|----------------|----------------|------------|
| Carrier Tape Width                                                                                    | W              | 18.0           | -0.5/+1.0  |
| Hold Down Tape Width                                                                                  | W <sub>4</sub> | 11.0           | Minimum    |
| Top Distance between Tape Edges                                                                       | W <sub>6</sub> | 3.0            | Maximum    |
| Sprocket Hole Position                                                                                | W <sub>5</sub> | 9.0            | -0.5/+0.75 |
| Sprocket Hole Diameter                                                                                | D <sub>0</sub> | 4.0            | ±0.2       |
| Abscissa to Plane (Straight Lead) (AHEF300 to AHEF1000)                                               | H              | 20.3           | ±0.5       |
| Abscissa to Plane (Kinked Lead) (AGRF400 to AGRF1400, AHRF050 to AHRF1500, AHEF050 to AHEF100)        | H <sub>0</sub> | 16.0           | ±0.5       |
| Abscissa to Top (AGRF400 to AGRF600, AHRF050 to AHRF450, AHEF050 to AHEF300)                          | H <sub>1</sub> | 32.2           | Maximum    |
| Abscissa to Top (AGRF700 to AGRF1400, AHRF550 to AHRF1500*, AHEF500 to AHEF1000)                      | H <sub>1</sub> | 45.0           | Maximum    |
| Overall Width with Lead Protrusion (AGRF400 to AGRF600 & AHRF050 to AHRF450, AHEF050 to AHEF300)      | C <sub>1</sub> | 43.2           | Maximum    |
| Overall Width with Lead Protrusion (AGRF700 to AGRF1400, AHRF550 to AHRF1500, AHEF500 to AHEF1000)    | C <sub>1</sub> | 55.0           | Maximum    |
| Overall Width without Lead Protrusion (AGRF400 to AGRF600, AHRF050 to AHRF450, AHEF050 to AHEF300)    | C <sub>2</sub> | 42.5           | Maximum    |
| Overall Width without Lead Protrusion (AGRF700 to AGRF1400, AHRF550 to AHRF1500, AHEF500 to AHEF1000) | C <sub>2</sub> | 54.0           | Maximum    |
| Lead Protrusion                                                                                       | L <sub>1</sub> | 1.0            | Maximum    |
| Protrusion of Cut-out                                                                                 | L              | 11.0           | Maximum    |
| Protrusion Beyond Hold-Down Tape                                                                      | l <sub>2</sub> | Not specified  | —          |
| Sprocket Hole Pitch                                                                                   | P <sub>0</sub> | 12.7           | ± 0.3      |
| Device Pitch (AGRF400 to AGRF700, AHRF050 to AHRF600, AHEF050 to AHEF300)                             | —              | 12.7           | ± 0.3      |
| Device Pitch (AGRF800 to AGRF1400, AHRF650 to AHRF1500, AHEF500 to AHEF1000)                          | —              | 25.4           | ± 0.6      |
| Pitch Tolerance                                                                                       | —              | 20 consec.     | ± 0.1      |
| Tape Thickness                                                                                        | t              | 0.9            | Maximum    |
| Overall Tape and Lead Thickness (AGRF400 to AGRF1100, AHRF050 to AHRF1100*, AHEF050 to AHEF750)       | t <sub>1</sub> | 2.0            | Maximum    |
| Overall Tape and Lead Thickness (AGRF1200 to AGRF1400, AHRF1300 to AHRF1500*, AHEF1000)               | t <sub>1</sub> | 2.3            | Maximum    |
| Splice Sprocket Hole Alignment                                                                        | —              | 0              | ± 0.3      |
| Body Lateral Deviation                                                                                | Δh             | 0              | ± 1.0      |
| Body Tape Plane Deviation                                                                             | Δp             | 0              | ± 1.3      |
| Ordinate to Adjacent Component Lead (AGRF400 to AGRF1100, AHRF050 to AHRF900, AHEF050 to AHEF500)     | P <sub>1</sub> | 3.81           | ± 0.7      |
| Ordinate to Adjacent Component Lead (AGRF1200 to AGRF1400, AHRF1000 to AHRF1500, AHEF750 to AHEF1000) | P <sub>1</sub> | 7.62           | ± 0.7      |
| Lead Spacing (AGRF400 to AGRF1100, AHRF050 to AHRF900*, AHEF050 to AHEF500)                           | F              | 5.05           | ± 0.75     |
| Lead Spacing (AGRF1200 to AGRF1400, AHRF1000 to AHRF1500*, AHEF750 to AHEF1000)                       | F              | 10.15          | ± 0.75     |
| Reel Width (AGRF400 to AGRF600 & AHRF050 to AHRF450, AHEF050 to AHEF300)                              | w <sub>2</sub> | 56.0           | Maximum    |
| Reel Width (AGRF700 to AGRF1400, AHRF550 to AHRF1500*, AHEF500 to AHEF1000)                           | w <sub>2</sub> | 63.5           | Maximum    |
| Reel Diameter                                                                                         | a              | 370.0          | Maximum    |
| Space between Flanges* (AHEF050 to AHEF300)                                                           | w <sub>1</sub> | 48.0           | Maximum    |
| Space between Flanges* (AHEF500 to AHEF1000)                                                          | w <sub>1</sub> | 55.0           | Maximum    |
| Arbor Hold Diameter                                                                                   | c              | 26.0           | ±12.0      |
| Core Diameter*                                                                                        | n              | 91.0           | Maximum    |
| Box                                                                                                   | —              | 64/372/362     | Maximum    |
| Consecutive Missing Places                                                                            | —              | None           | —          |
| Empty Places per Reel                                                                                 | —              | 0.1%           | Maximum    |

\*Differs from EIA specification.

**Figure A26** EIA Referenced Taped Component Dimensions for AGRF/AHRF/AHEF PolySwitch Automotive Devices



**Figure A27** EIA Referenced Reel Dimensions for AGRF/AHRF/AHEF PolySwitch Automotive Devices



**Table A8** Tape and Reel Specifications for AHS/ASMD/nanoASMD/microASMD/miniASMD PolySwitch Automotive Devices (in Millimeters)

| Description        | nanoASMD<br>EIA 481-1 | microASMD<br>EIA 481-1 | miniASMD<br>EIA 481-1 | AHS080-2018<br>EIA 481-2 | AHS120<br>ASMD030F~ASMD125F<br>EIA 481-2 | AHS160~AHS300<br>ASMD150F~ASMD250F<br>EIA 481-2 |
|--------------------|-----------------------|------------------------|-----------------------|--------------------------|------------------------------------------|-------------------------------------------------|
| W                  | 8.0 ± 0.30            | 8.0 ± 0.30             | 12.0 ± 0.30           | 16.0 ± 0.30              | 16.0 ± 0.30                              | 16.0 ± 0.30                                     |
| P <sub>0</sub>     | 4.0 ± 0.10            | 4.0 ± 0.10             | 4.0 ± 0.10            | 4.0 ± 0.10               | 4.0 ± 0.10                               | 4.0 ± 0.10                                      |
| P <sub>1</sub>     | 4.0 ± 0.10            | 4.0 ± 0.10             | 8.0 ± 0.10            | 8.0 ± 0.10               | 8.0 ± 0.10                               | 12.0 ± 0.10                                     |
| P <sub>2</sub>     | 2.0 ± 0.05            | 2.0 ± 0.05             | 2.0 ± 0.05            | 2.0 ± 0.10               | 2.0 ± 0.10                               | 2.0 ± 0.10                                      |
| A <sub>0</sub>     | 1.95 ± 0.10           | 2.9 ± 0.10             | Table A9              | 5.11 ± 0.15              | 5.6 ± 0.23                               | 6.9 ± 0.23                                      |
| B <sub>0</sub>     | Table A9              | 3.50 ± 0.10            | Table A9              | 5.6 ± 0.23               | 8.1 ± 0.15                               | 9.6 ± 0.15                                      |
| B <sub>1</sub> max | 4.35                  | 4.35                   | 6.15                  | 12.1                     | 12.1                                     | 12.1                                            |
| D <sub>0</sub>     | 1.55 ± .05            | 1.55 ± .05             | 1.5 ± 0.10/-.00       | 1.5 ± 0.10/-.00          | 1.5 ± 0.10/-.00                          | 1.5 ± 0.10/-.00                                 |
| F                  | 3.50 ± 0.05           | 3.50 ± 0.05            | 5.50 ± 0.05           | 7.50 ± 0.10              | 7.50 ± 0.10                              | 7.50 ± 0.10                                     |
| E <sub>1</sub>     | 1.75 ± 0.10           | 1.75 ± 0.10            | 1.75 ± 0.10           | 1.75 ± 0.10              | 1.75 ± 0.10                              | 1.75 ± 0.10                                     |
| E <sub>2</sub> min | 6.25                  | 6.25                   | 10.25                 | 14.25                    | 14.25                                    | 14.25                                           |
| T max              | 0.3                   | 0.3                    | 0.35                  | 0.4                      | 0.4                                      | 0.4                                             |
| T <sub>1</sub> max | 0.1                   | 0.1                    | 0.1                   | 0.1                      | 0.1                                      | 0.1                                             |
| K <sub>0</sub>     | Table A9              | 0.9 ± 0.1              | Table A9              | 1.8 ± 0.15               | 3.2 ± 0.15                               | 3.4 ± 0.15                                      |
| Leader min         | 390                   | 390                    | 390                   | 400                      | 400                                      | 400                                             |
| Trailer min        | 160                   | 160                    | 160                   | 160                      | 160                                      | 160                                             |

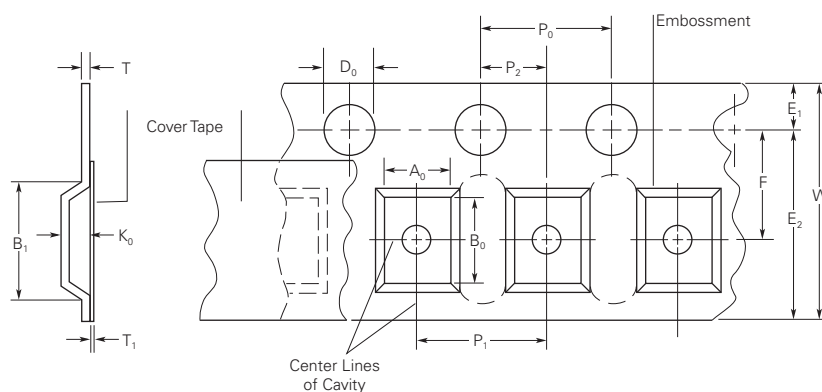
**Table A9** Tape and Reel Specifications for nanoASMDC/miniASMDC PolySwitch Automotive Devices (in Millimeters)

| Description    | nanoASMDC020F<br>nanoASMDC035F | nanoASMDC012F<br>nanoASMDC016F | miniASMDC010F-050F<br>miniASMDC110F/16<br>miniASMDC125F/16<br>miniASMDC150F/16 | miniASMDC075F/24<br>miniASMDC110F/24<br>miniASMDC260F/16 | miniASMDC150F/24 |
|----------------|--------------------------------|--------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------|------------------|
| A <sub>0</sub> | 1.95 ± 0.1                     | 1.95 ± 0.1                     | 3.5 ± 0.1                                                                      | 3.7 ± 0.1                                                | 3.7 ± 0.1        |
| B <sub>0</sub> | 3.50 +0.1/-0.08                | 3.5 ± 0.1                      | 4.95 ± 0.1                                                                     | 4.9 ± 0.1                                                | 4.9 ± 0.1        |
| K <sub>0</sub> | 0.89 ± 0.1                     | 1.27 ± 0.1                     | 0.9 ± 0.1                                                                      | 1.4 ± 0.1                                                | 1.78 ± 0.1       |

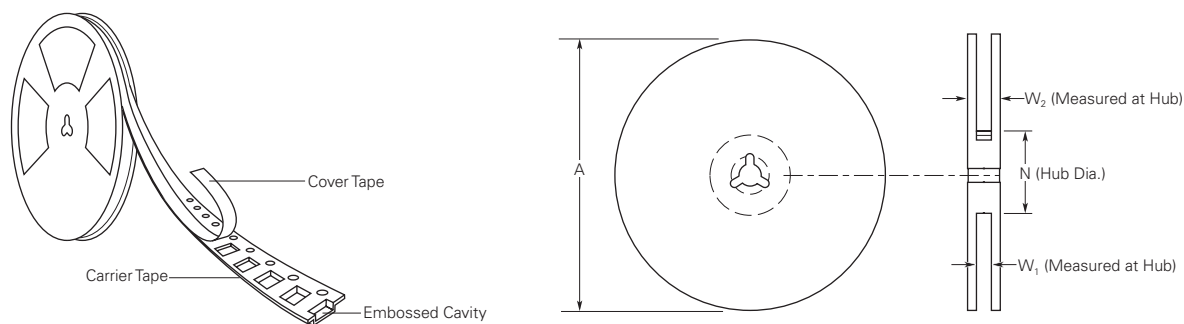
**Table A10** Reel Dimensions for AHS/ASMD/nanoASMDC/microASMD/miniASMDC PolySwitch Automotive Devices (in Millimeters)

| Description        | nanoASMDC<br>microASMD | miniASMDC        | AHS<br>ASMD      |
|--------------------|------------------------|------------------|------------------|
| A max              | 185                    | 185              | 330              |
| N min              | 50                     | 50               | 50               |
| W <sub>1</sub>     | 8.4 + 1.5/-0.00        | 12.4 + 2.0/-0.00 | 16.4 + 2.0/-0.00 |
| W <sub>2</sub> max | 14.4                   | 18.4             | 22.4             |

**Figure A28** EIA Referenced Taped Component Dimensions for AHS/ASMD/nanoASMDC/microASMD/miniASMDC PolySwitch Automotive Devices

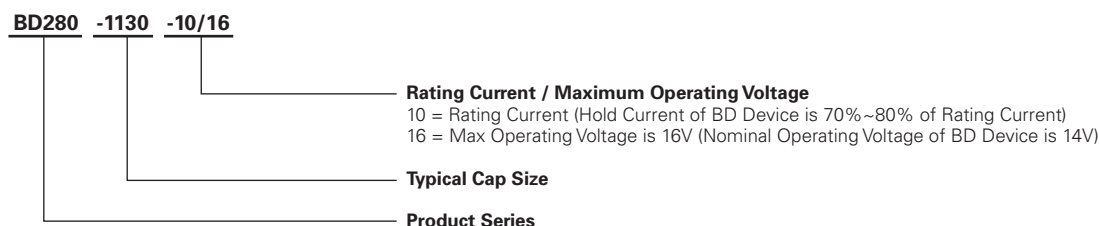
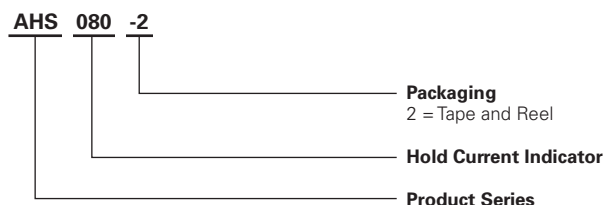
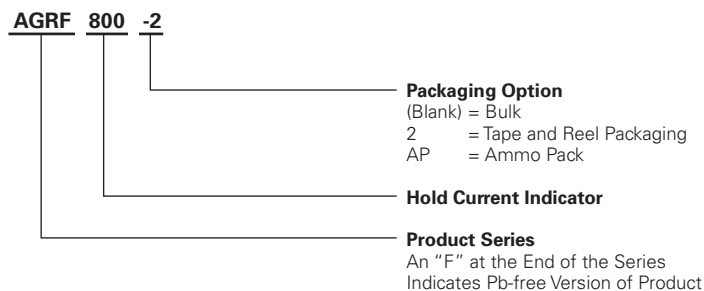


**Figure A29** EIA Referenced Reel Dimensions for AHS/ASMD/nanoASMDC/microASMD/miniASMDC PolySwitch Automotive Devices





## Part Numbering System for PolySwitch Automotive Devices



### Warning :

- Users should independently evaluate the suitability of and test each product selected for their own application.
- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- These devices are intended for protection against damage caused by occasional overcurrent or overtemperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Contamination of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- PPTC devices are not recommended for installation in applications where the device is constrained such that its PTC properties are inhibited, for example in rigid potting materials or in rigid housings, which lack adequate clearance to accommodate device expansion.
- Operation in circuits with a large inductance can generate a circuit voltage ( $Ldi/dt$ ) above the rated voltage of the device.