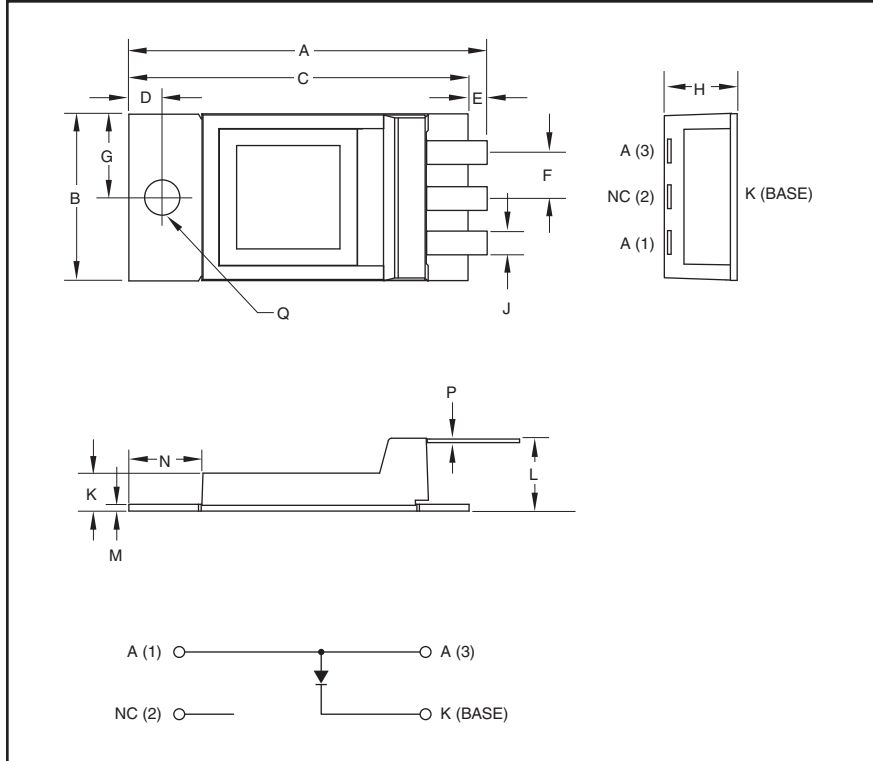
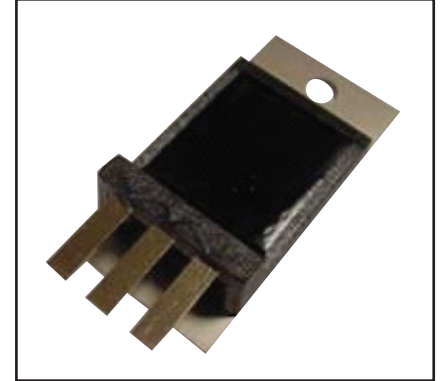


## Single Discrete Diode 60 Amperes/4500 Volts



| Dimensions | Inches    | Millimeters |
|------------|-----------|-------------|
| A          | 2.11      | 53.6        |
| B          | 0.98      | 25.0        |
| C          | 2.01      | 51.0        |
| D          | 0.2       | 5.0         |
| E.         | 0.1       | 2.5         |
| F          | 0.27      | 6.9         |
| G          | 0.49      | 12.5        |
| H          | 0.46 Max. | 11.8 Max.   |

| Dimensions | Inches    | Millimeters |
|------------|-----------|-------------|
| J          | 0.14      | 3.6         |
| K          | 0.22      | 5.7         |
| L          | 0.43      | 10.8        |
| M          | 0.04      | 1.0         |
| N          | 0.43      | 10.9        |
| P          | 0.02      | 0.5         |
| Q          | 0.21 Dia. | 5.3 Dia.    |



### Description:

Powerex Single Non-isolated Discrete is designed specially for customer high voltage applications.

### Features:

- ☐ Non-Isolated Package
- ☐ Molybdenum Mounting Plate

### Applications:

- ☐ Snubber Circuits
- ☐ Free Wheeling
- ☐ Switching Power Supplies

## QRS4506001

### Single Discrete Diode

60 Amperes/4500 Volts

### Maximum Ratings, $T_j = 25^\circ\text{C}$ unless otherwise specified

| Ratings                                                      | Symbol      | QRS4506001 | Units                  |
|--------------------------------------------------------------|-------------|------------|------------------------|
| Peak Reverse Blocking Voltage                                | $V_{RRM}$   | 4500       | Volts                  |
| Average Current (DC, $T_C = 94^\circ\text{C}$ )              | $V_{F(av)}$ | 60         | Amperes                |
| Peak 3-Cycle Surge (Non-Repetitive) On-State Current (60 Hz) | $I_{FSM}$   | 120        | Amperes                |
| $I^2t$ (for Fusing) (8.3 milliseconds)                       | $I^2t$      | 1900       | $\text{A}^2\text{sec}$ |
| Operating Temperature                                        | $T_j$       | -55 to 150 | $^\circ\text{C}$       |
| Storage Temperature                                          | $T_{stg}$   | -55 to 125 | $^\circ\text{C}$       |
| Mounting Torque, M5 Mounting Screws                          | —           | 30         | in-lb                  |
| Weight (Typical)                                             | —           | 21         | Grams                  |

### Electrical Characteristics, $T_j = 25^\circ\text{C}$ unless otherwise specified

| Characteristics                | Symbol    | Test Conditions                                                                        | Min. | Typ. | Max. | Units         |
|--------------------------------|-----------|----------------------------------------------------------------------------------------|------|------|------|---------------|
| Reverse Leakage Current (Peak) | $I_{RRM}$ | $V_{rrm} = 4500\text{V}$                                                               | —    | —    | 1.0  | mA            |
| Peak On-State Voltage          | $V_{FM}$  | $I_{FM} = 60\text{A}$                                                                  | —    | 5.6  | 6.2  | Volts         |
| Reverse Recovery Time          | $t_{rr}$  | $I_{FM} = 67\text{A}$ , $di/dt = -800\text{A}/\mu\text{S}$ , $V_r = \frac{1}{2}V_{RM}$ | —    | 230  | —    | nS            |
| Reverse Recovery Charge        | $Q_{rr}$  | $I_{FM} = 67\text{A}$ , $di/dt = -800\text{A}/\mu\text{S}$ , $V_r = \frac{1}{2}V_{RM}$ | —    | 11   | —    | $\mu\text{C}$ |

### Thermal and Mechanical Characteristics, $T_j = 25^\circ\text{C}$ unless otherwise specified

| Characteristics                      | Symbol        | Test Conditions                          | Min. | Typ. | Max. | Units                     |
|--------------------------------------|---------------|------------------------------------------|------|------|------|---------------------------|
| Thermal Resistance, Junction to Case | $R_{th(j-c)}$ | Diode                                    | —    | 0.15 | TBD  | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Case to Sink     | $R_{th(c-s)}$ | $\lambda_{grease} = 1\text{W}/\text{mK}$ | —    | 0.10 | —    | $^\circ\text{C}/\text{W}$ |
| Thermal Grease Applied               |               |                                          |      |      |      |                           |

