



**Absolute Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

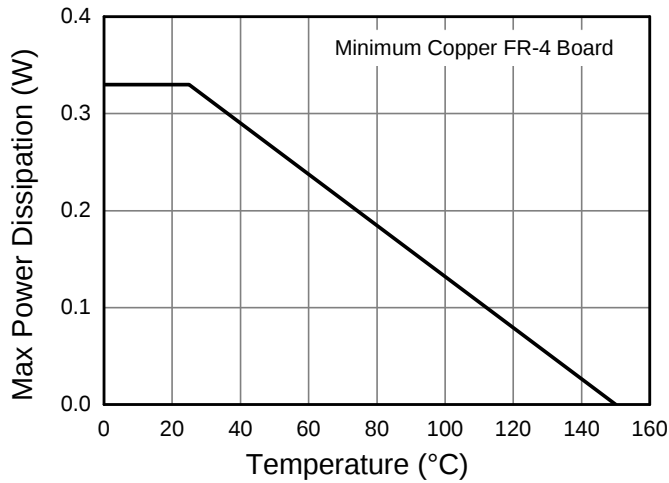
| Characteristic                   | Symbol               | Value     | Unit |
|----------------------------------|----------------------|-----------|------|
| Supply Voltage <Pin: (3) to (2)> | V <sub>CC</sub>      | -50       | V    |
| Input Voltage <Pin: (1) to (2)>  | V <sub>IN</sub>      | +7 to -20 | V    |
| Output Current                   | I <sub>O</sub>       | -100      | mA   |
| Output Current                   | I <sub>C</sub> (Max) | -100      | mA   |

**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

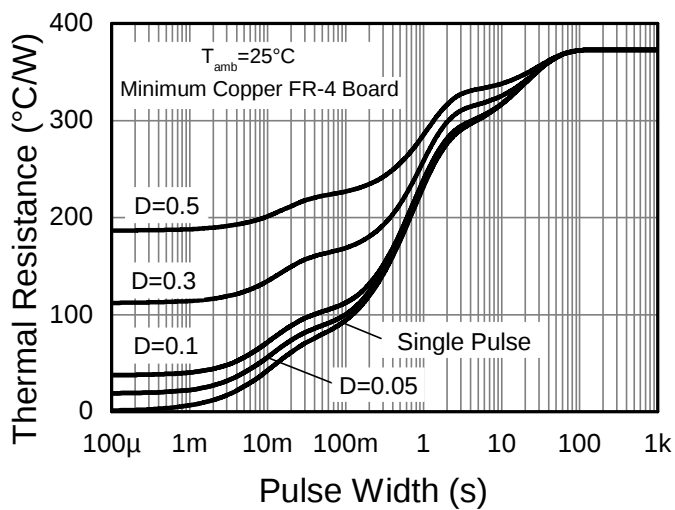
| Characteristic                                       | Symbol                            | Value       | Unit |
|------------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 6)                           | P <sub>D</sub>                    | 330         | mW   |
| Thermal Resistance, Junction to Ambient Air (Note 6) | R <sub>θJA</sub>                  | 375         | °C/W |
| Operating and Storage Temperature Range              | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

Note: 6. Mounted on FR-4 PC Board with minimum recommended pad layout.

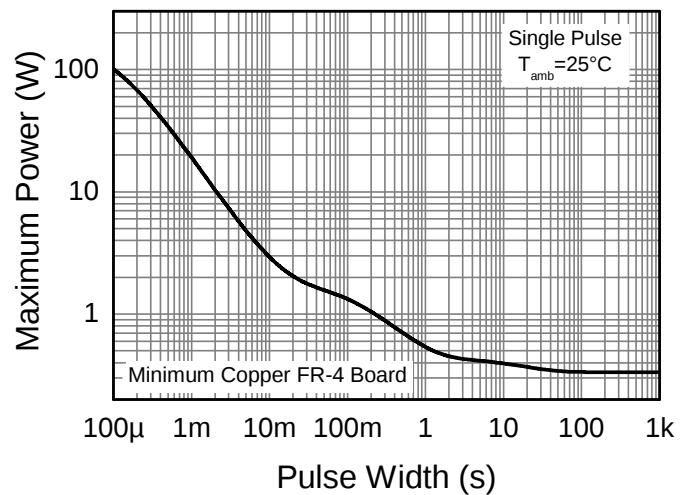
## Thermal Characteristics and Derating Information



**Derating Curve**



**Transient Thermal Impedance**



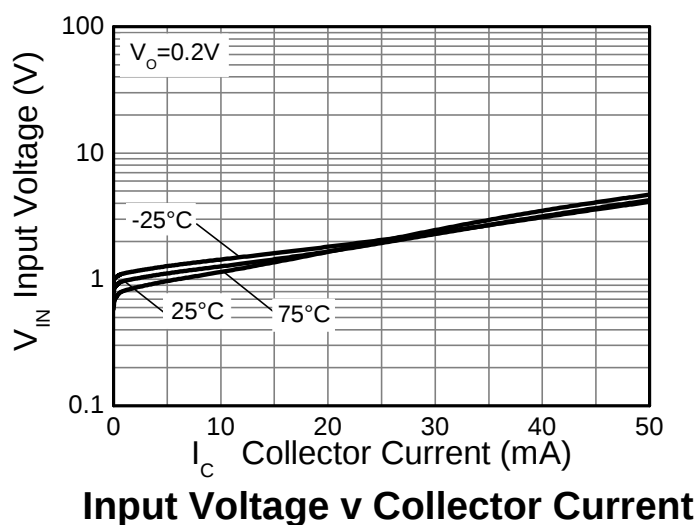
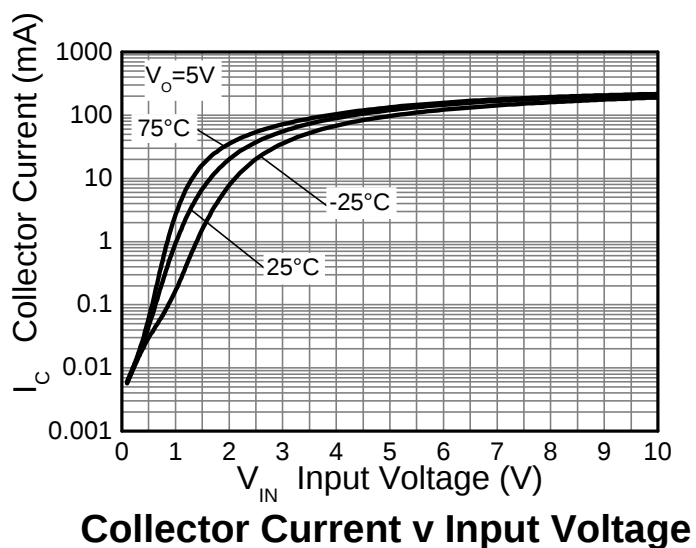
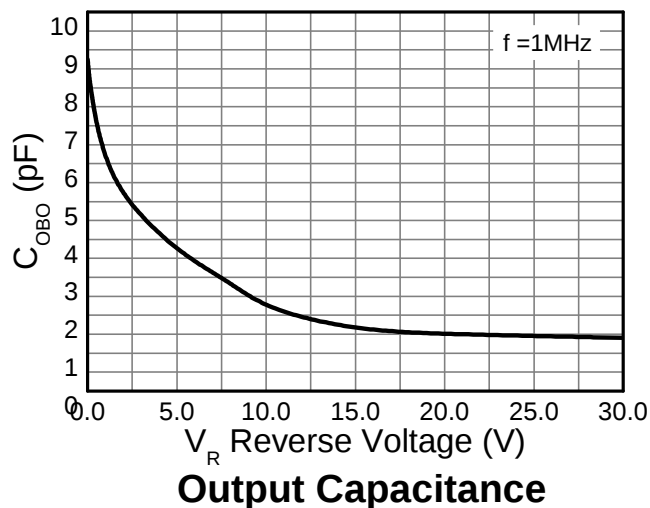
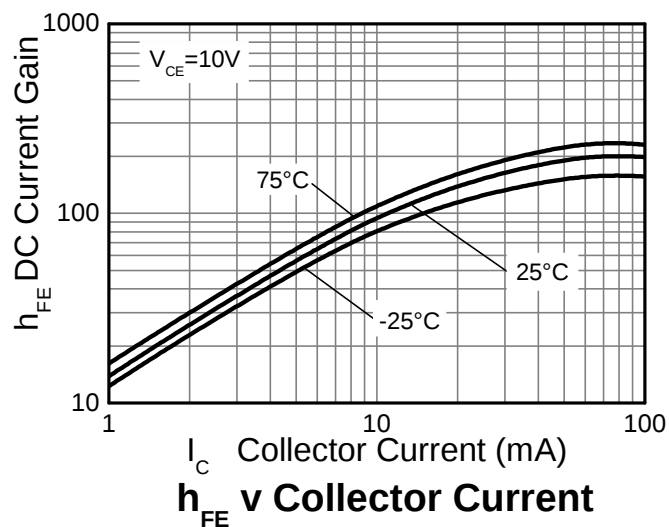
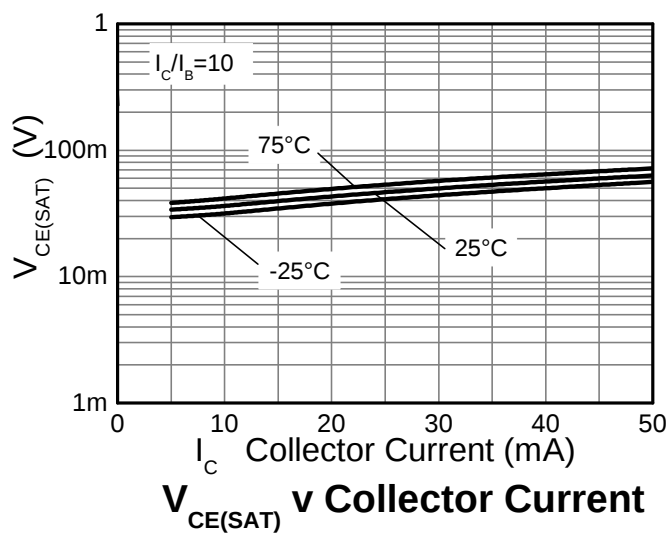
**Pulse Power Dissipation**

# Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                             | Symbol                          | Min  | Typ  | Max  | Unit | Test Condition                                            |
|--------------------------------------------|---------------------------------|------|------|------|------|-----------------------------------------------------------|
| Input Voltage                              | V <sub>I(OFF)</sub> (Note 7)    | -0.3 | —    | —    | V    | V <sub>CC</sub> = -5V, I <sub>O</sub> = -100μA            |
|                                            | V <sub>I(ON)</sub> (Note 8)     | —    | —    | -2.5 |      | V <sub>O</sub> = -0.3V, I <sub>O</sub> = -20mA            |
| Output Voltage                             | V <sub>O(ON)</sub>              | —    | -0.1 | -0.3 | V    | I <sub>O</sub> /I <sub>I</sub> = -10mA / -0.5mA           |
| Input Current                              | I <sub>I</sub>                  | —    | —    | -1.8 | mA   | V <sub>I</sub> = -5V                                      |
| Output Current                             | I <sub>O(OFF)</sub>             | —    | —    | -0.5 | μA   | V <sub>CC</sub> = -50V, V <sub>I</sub> = 0V               |
| DC Current Gain                            | G <sub>I</sub>                  | 30   | —    | —    | —    | V <sub>O</sub> = -5V, I <sub>O</sub> = -10mA              |
| Input Resistor (R <sub>1</sub> ) Tolerance | ΔR <sub>1</sub>                 | -30  | —    | +30  | %    | —                                                         |
| Resistance Ratio Tolerance                 | ΔR <sub>2</sub> /R <sub>1</sub> | -20  | —    | +20  | %    | —                                                         |
| Gain-Bandwidth Product (Note 9)            | f <sub>T</sub>                  | —    | 250  | —    | MHz  | V <sub>CE</sub> = -10V, I <sub>E</sub> = -5mA, f = 100MHz |

Notes: 7. Guarantees that the device will be switched OFF if the Input Voltage is less than -0.3V.  
8. Guarantees that the device will be switched ON if the Input Voltage is more than -2.5V.  
9. Transistor - For Reference Only.

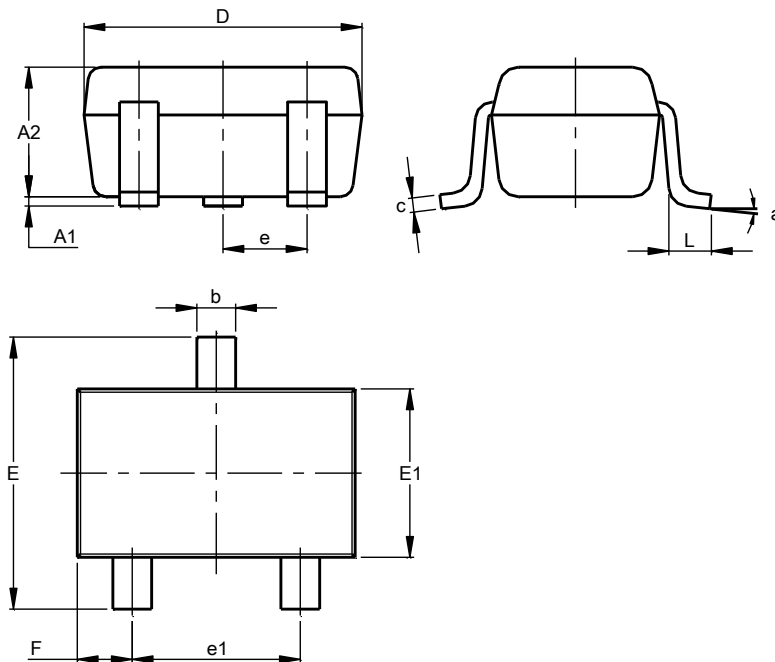
**Typical Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)



## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT323

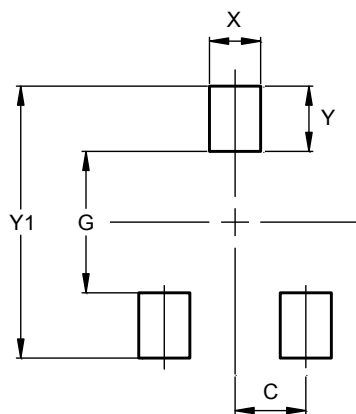


| SOT323               |           |       |       |
|----------------------|-----------|-------|-------|
| Dim                  | Min       | Max   | Typ   |
| A1                   | 0.00      | 0.10  | 0.05  |
| A2                   | 0.90      | 1.00  | 0.95  |
| b                    | 0.25      | 0.40  | 0.30  |
| c                    | 0.10      | 0.18  | 0.11  |
| D                    | 1.80      | 2.20  | 2.15  |
| E                    | 2.00      | 2.20  | 2.10  |
| E1                   | 1.15      | 1.35  | 1.30  |
| e                    | 0.650 BSC |       |       |
| e1                   | 1.20      | 1.40  | 1.30  |
| F                    | 0.375     | 0.475 | 0.425 |
| L                    | 0.25      | 0.40  | 0.30  |
| a                    | 0°        | 8°    | --    |
| All Dimensions in mm |           |       |       |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT323



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 0.650         |
| G          | 1.300         |
| X          | 0.470         |
| Y          | 0.600         |
| Y1         | 2.500         |

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