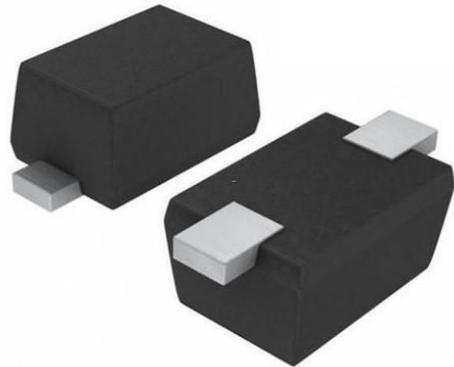


### »Features

- 40Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ( $C_j = 1pF$  typ.)
- Protection one data/power line
- IEC 61000-4-2  $\pm 10kV$  contact  $\pm 15kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3.0A (8/20 $\mu s$ )



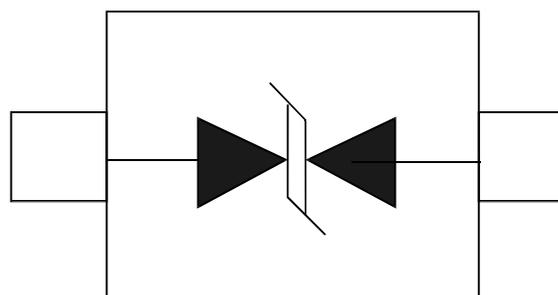
### »Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

### »Mechanical Data

- SOD523 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

### »Schematic & PIN Configuration



SOD-523

»Absolute Maximum Rating

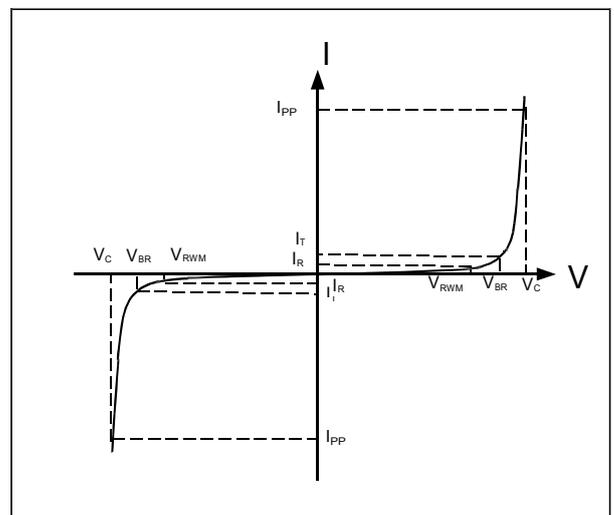
| Rating   | Symbol    | Value          | Units |
|--|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 40             | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ )(note1)                | $I_{pp}$  | 3.0            | A     |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 15<br>10       | kV    |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds) | °C    |
| Junction Temperature   | $T_J$     | -55 to + 125   | °C    |
| Storage Temperature  | $T_{stg}$ | -55 to + 125   | °C    |

»Electrical Characteristics

| Parameter                 | Symbol    | Conditions                       | Min | Typical | Max | Units   |
|---------------------------|-----------|----------------------------------|-----|---------|-----|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                  |     |         | 5.0 | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                      | 5.5 | 6.5     |     | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 5V, T = 25^\circ C$   |     |         | 0.1 | $\mu A$ |
| Peak Pulse Current        | $I_{pp}$  | $t_p = 8/20\mu s$                |     |         | 3.0 | A       |
| Clamping Voltage          | $V_C$     | $I_{pp} = 3.0A, t_p = 8/20\mu s$ |     |         | 13  | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$             |     | 1.0     | 2.5 | pF      |

»Electrical Parameters (TA = 25°C unless otherwise noted)

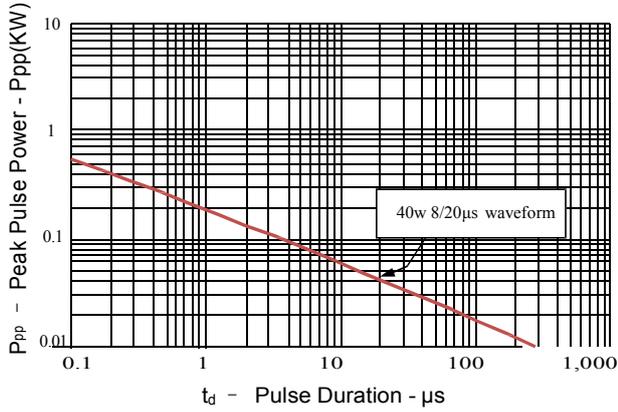
| Symbol    | Parameter                                   |
|-----------|---|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                   |
| $I_T$     | Test Current                                |
|           |   |
|           |   |



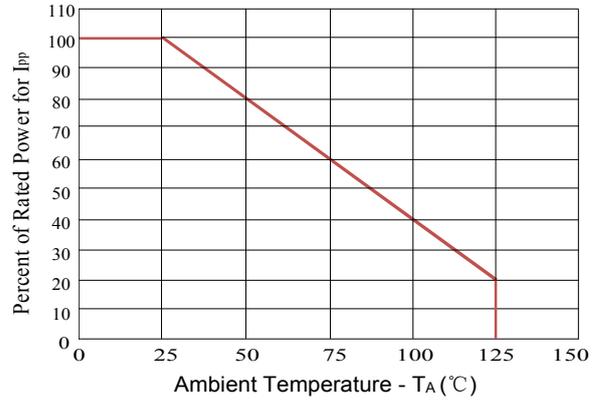
Note: 8/20 $\mu s$  pulse waveform.

»Typical Characteristics

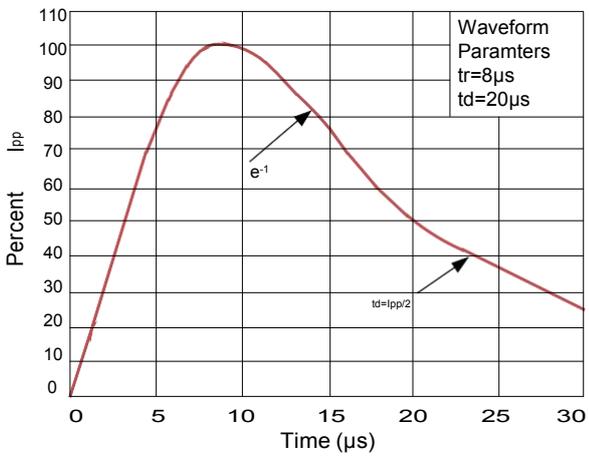
**Figure 1: Peak Pulse Power vs. Pulse Time**



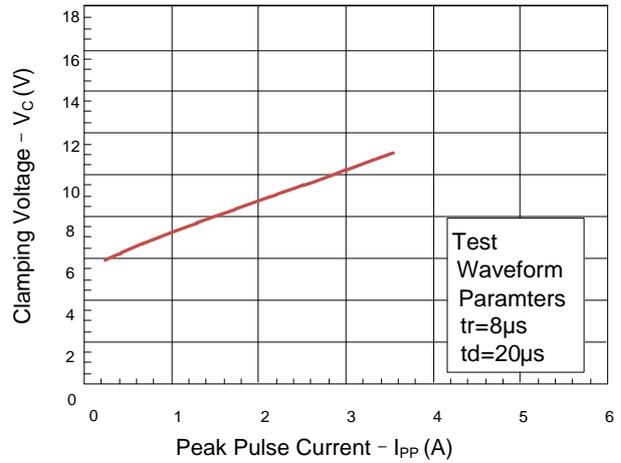
**Figure 2: Power Derating Curve**



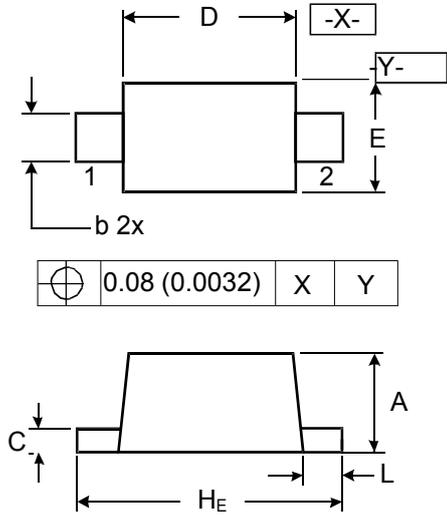
**Figure3: Pulse Waveform**



**Figure 4: Clamping Voltage vs. I\_pp**



»Outline Drawing – SOD523



**DIMENSIONS**

| SYMBOL         | MILLIMETER |      | INCHES |        |
|----------------|------------|------|--------|--------|
|                | MIN        | MAX  | MIN    | MAX    |
| A              | 0.50       | 0.70 | 0.020  | 0.028  |
| b              | 0.25       | 0.35 | 0.010  | 0.014  |
| C              | 0.07       | 0.20 | 0.0028 | 0.0079 |
| D              | 1.10       | 1.30 | 0.043  | 0.051  |
| E              | 0.70       | 0.90 | 0.028  | 0.035  |
| H <sub>E</sub> | 1.50       | 1.70 | 0.059  | 0.067  |
| L              | 0.15       | 0.25 | 0.006  | 0.010  |

»Marking



»Ordering information

| Order code | Package | Base qty | Delivery mode |
|------------|---------|----------|---------------|
| BHS4037    | SOD523  | 5000     | Tape and reel |