



# SE05Q4UMD5

## ESD PROTECTION DIODE

### FEATURES

- 200W Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- IEC61000-4-2(ESD) 15kV(air), 8kV(Contact)
- IEC61000-4-4(EFT) 40A(5/50ns)
- Protect One Power or I/O Port
- Low Clamping Voltage
- Low leakage current
- Uni-directional Configurations
- Suffix " H " indicated Halogen-free part, ex..SE05Q4UMD5H

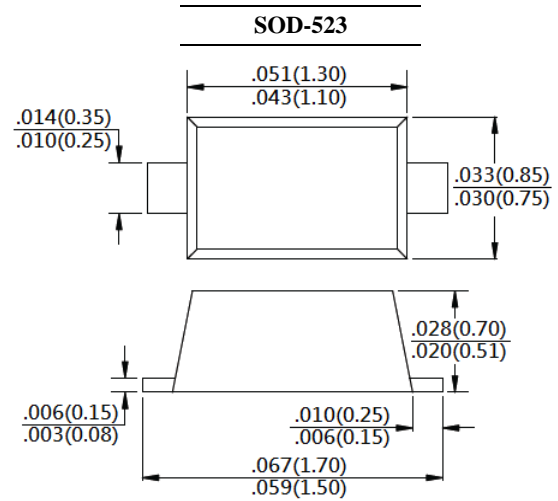
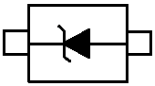
### APPLICATIONS

- Cellular handsets and accessories
- Portable instrumentation
- Peripherals
- Serial and Parallel Ports
- Notebooks, Desktops, Servers

### MECHANICAL DATA

Case : SOD-523

### PIN CONFIGURATION



**Dimensions in inches and (millimeters)**

### Maximum Ratings (Rating at 25°C ambient temperature unless otherwise specified)

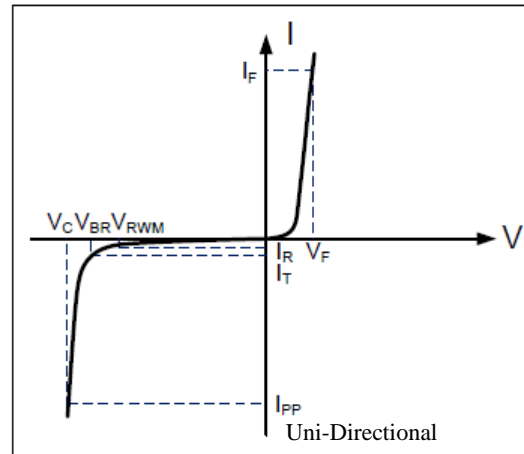
| Parameter                              | Symbol    | Value       | Units |
|----------------------------------------|-----------|-------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ ) | $P_{pp}$  | 200         | W     |
| ESD per IEC 61000-4-2 (Air)            | $V_{ESD}$ | 15          | kV    |
| ESD per IEC 61000-4-2 (Contact)        |           | 8           |       |
| Operating Junction Temperature Range   | $T_J$     | -55 to +125 | °C    |
| Storage Temperature Range              | $T_{STG}$ | -55 to +150 | °C    |



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| Symbol    | Parameter                                   |
|-----------|---------------------------------------------|
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                   |
| $I_T$     | Test Current for Reverse Breakdown          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $C_j$     | Junction Capacitance                        |
| $I_F$     | Forward Current                             |
| $V_F$     | Forward Voltage @ $I_F$                     |



### Electrical Characteristics Per line @ 25°C Unless Otherwise Specified

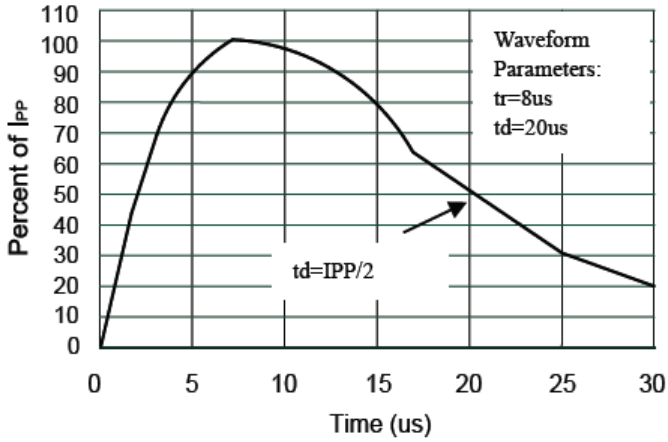
| Part Numbers | $V_{RWM}$ | $I_R$       | $V_{BR}$ | $I_T$ | $V_C$<br>@ $I_{PP}=1A$ | $C_j$<br>@ $V_R=0V, 1MHz$ |          |
|--------------|-----------|-------------|----------|-------|------------------------|---------------------------|----------|
|              | (V)       | ( $\mu A$ ) | Min.(V)  | (mA)  | (V)                    | Typ.(pF)                  | Max.(pF) |
| SE05Q4UMD5   | 5.0       | 2.0         | 6.0      | 1.0   | 9.8                    | 36.0                      | 45.0     |



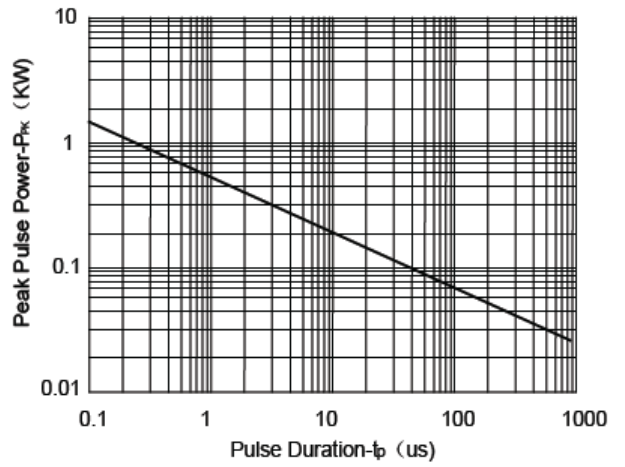
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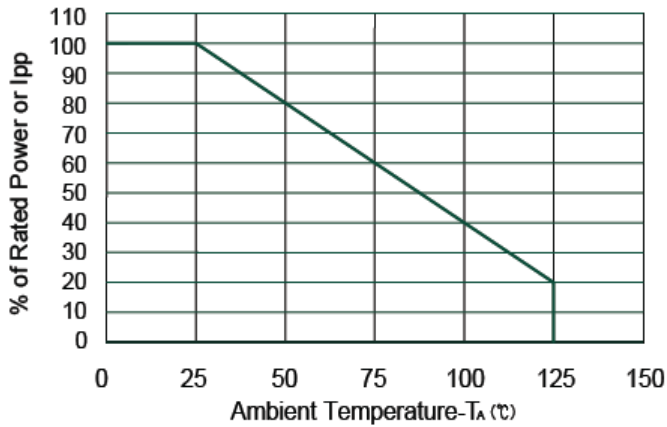
### RATINGS AND CHARACTERISTIC CURVES



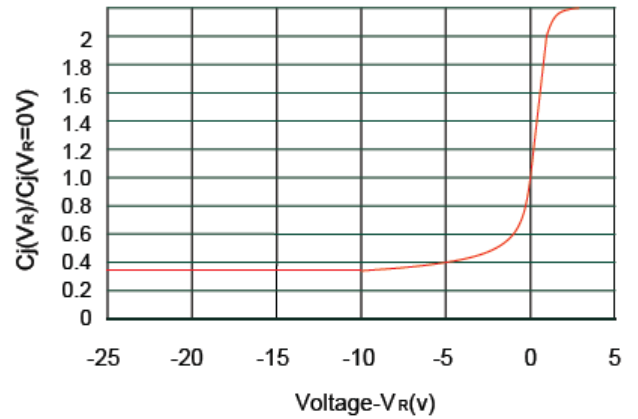
**Pulse Waveform**



**Non-Repetitive Peak Pulse Power vs. Pulse Time**



**Power Derating Curve**



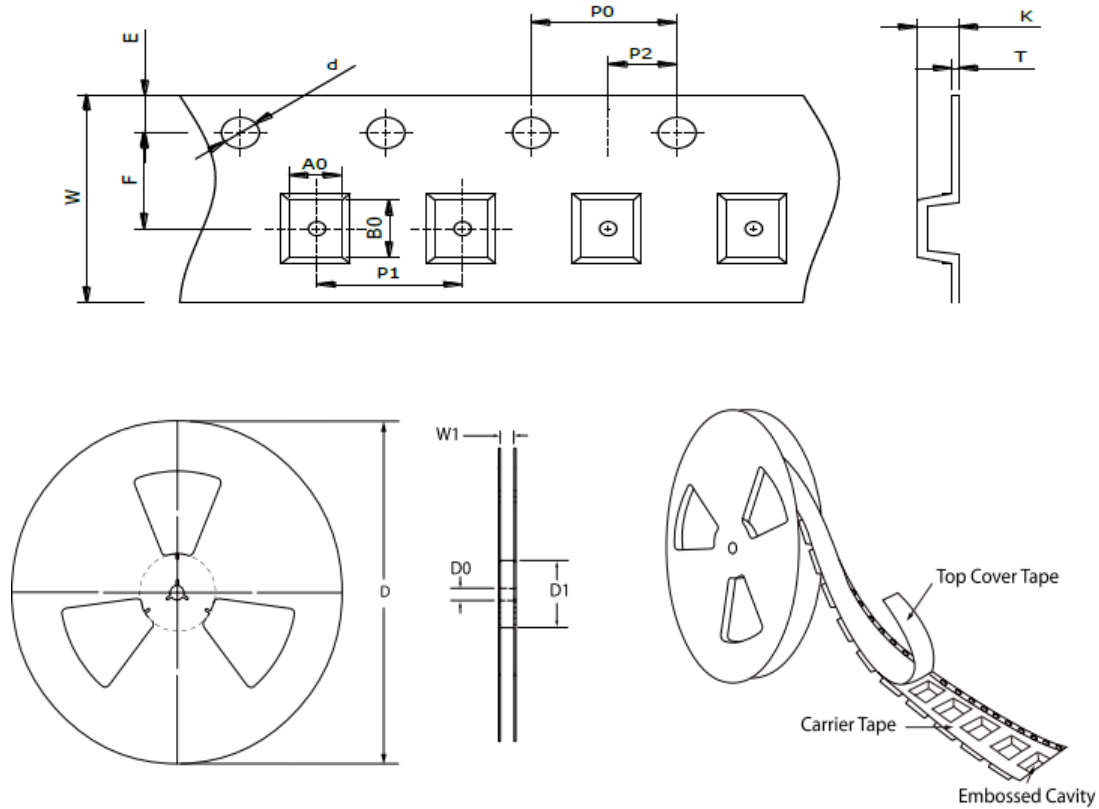
**Junction Capacitance vs. Reverse Voltage**



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### TAPE & REEL SPECIFICATION



| Item                   | Symbol         | SOD-523       |
|------------------------|----------------|---------------|
| Carrier width          | A <sub>0</sub> | 0.80 ± 0.10   |
| Carrier length         | B <sub>0</sub> | 1.95 ± 0.10   |
| Carrier depth          | K              | 0.50 ± 0.10   |
| Sprocket hole          | d              | 1.50 ± 0.10   |
| Reel outside diameter  | D              | 178.00 ± 2.00 |
| Feed hole width        | D <sub>0</sub> | 13.00 ± 0.20  |
| Reel inner diameter    | D <sub>1</sub> | MIN. 54.00    |
| Sprocket hole position | E              | 1.75 ± 0.10   |
| Punch hole position    | F              | 3.50 ± 0.10   |
| Sprocket hole pitch    | P <sub>0</sub> | 4.00 ± 0.10   |
| Punch hole pitch       | P <sub>1</sub> | 4.00 ± 0.10   |
| Embossment center      | P <sub>2</sub> | 2.00 ± 0.10   |
| Overall tape thickness | T              | 0.25 ± 0.05   |
| Tape width             | W              | 8.00 ± 0.20   |
| Reel width             | W1             | MAX. 13.50    |

### ORDER INFORMATION

| Package | Marking Code | Reel Size | Quantity |
|---------|--------------|-----------|----------|
| SOD-523 | ZF           | 7"        | 3,000    |

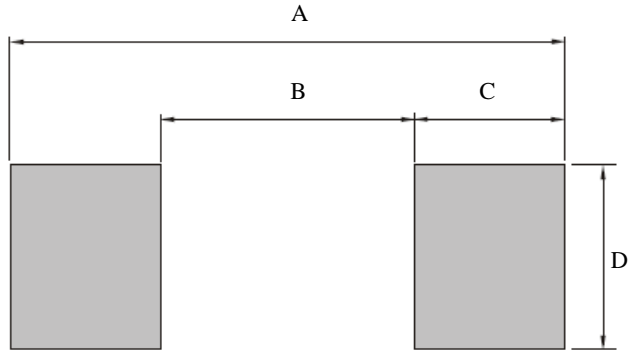


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### SUGGESTED SOLDER PAD LAYOUT



Unit : mm

| PACKAGE | A    | B    | C    | D    |
|---------|------|------|------|------|
| SOD-523 | 2.02 | 0.82 | 0.60 | 0.70 |