

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

## SP3022-01ETG-MS

Product specification

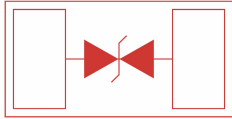
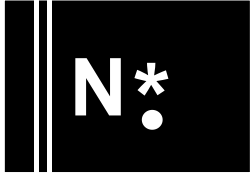
## Features

- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 3 0 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- We declare that the material of product compliant with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements;AEC-Q101 qualified and PPAP capable.

## Applications

- Cellular phones audio
- MP3 players
- Digital cameras
- Portable applications
- mobile telephone

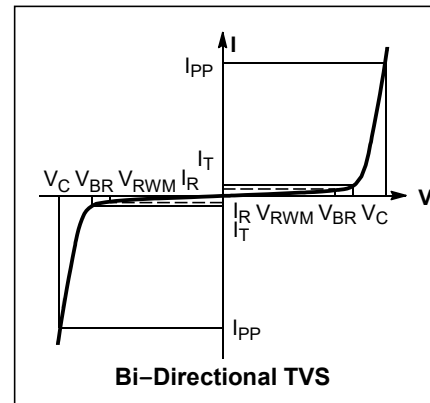
## Reference News

| SOD-882                                                                             | PIN Configuration                                                                   | Marking                                                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |

## Electronics Parameter

(TA = 25°C unless otherwise noted)

| Symbol           | Parameter                                          |
|------------------|----------------------------------------------------|
| I <sub>PP</sub>  | Maximum Reverse Peak Pulse Current                 |
| V <sub>C</sub>   | Clamping Voltage @ I <sub>PP</sub>                 |
| V <sub>RWM</sub> | Working Peak Reverse Voltage                       |
| I <sub>R</sub>   | Maximum Reverse Leakage Current @ V <sub>RWM</sub> |
| V <sub>BR</sub>  | Breakdown Voltage @ I <sub>T</sub>                 |
| I <sub>T</sub>   | Test Current                                       |
| P <sub>pk</sub>  | Peak Power Dissipation                             |
| C                | Capacitance @ V <sub>R</sub> = 0 and f = 1.0 MHz   |



## MAXIMUM RATINGS

| Rating                                                                    | Symbol  | Value      | Unit               |
|---------------------------------------------------------------------------|---------|------------|--------------------|
| IEC 61000-4-2 (ESD) Air discharge                                         |         | ±30        | kV                 |
| Contact discharge                                                         |         | ±30        | kV                 |
| ESD Voltage Per Human Body Model                                          |         | 16         | kV                 |
| Total Power Dissipation on FR-5 Board (Note 1) @ $T_A=25^{\circ}\text{C}$ | PD      | 200        | mW                 |
| Junction and Storage Temperature Range                                    | TJ,TSTG | -55 to 150 | $^{\circ}\text{C}$ |
| Lead Solder Temperature – Maximum (10 Second Duration)                    | TL      | 260        | $^{\circ}\text{C}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only.

Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0\*0.75\*0.62 in.

## ELECTRICAL CHARACTERISTICS

| Device          | $V_{RWM}$ (V) | $I_R$ ( $\mu\text{A}$ ) @ $V_{RWM}$ | $V_{BR}$ (V) @ $I_T$ (Note 2) | $I_T$ | $V_C$ (V) @ $I_{PP} = 1\text{ A}$ (Note 3) | $V_C$ (V) @ MAX $I_{PP}$ (Note 3) | $I_{PP}$ (A) (Note 3) | $P_{PK}$ (W) (Note 3) | C (pF) |     |
|-----------------|---------------|-------------------------------------|-------------------------------|-------|--------------------------------------------|-----------------------------------|-----------------------|-----------------------|--------|-----|
|                 | Max           | Max                                 | Min                           | mA    | Max                                        | Max                               | Max                   | Max                   | Typ    | Max |
| SP3022-01ETG-MS | 5             | 0.5                                 | 6                             | 1.0   | 12                                         | 20                                | 4                     | 80                    | 0.25   | 0.3 |

Other voltage available upon request.

2.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^{\circ}\text{C}$

3. Surge current waveform per Figure 1.

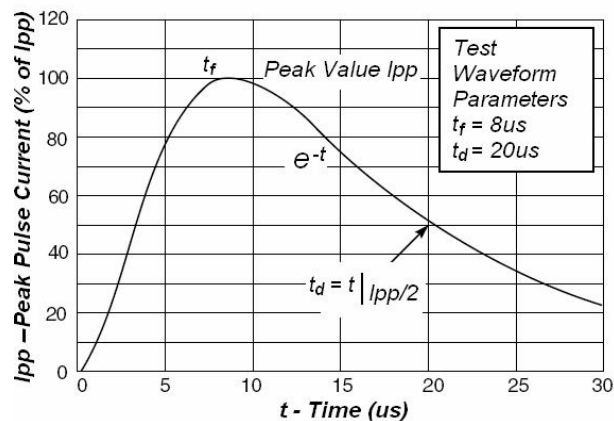


Fig1. Pulse Waveform

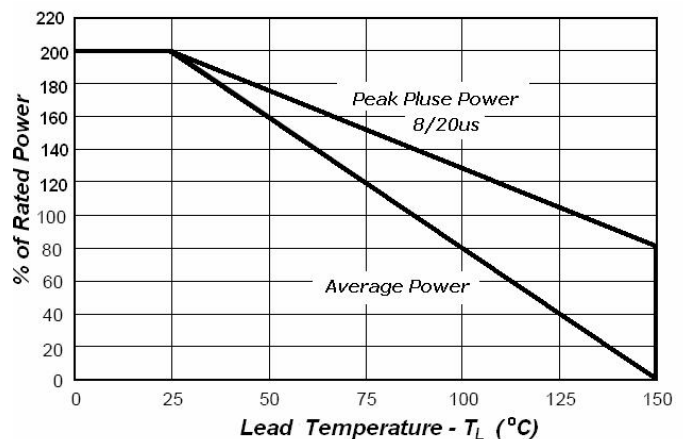
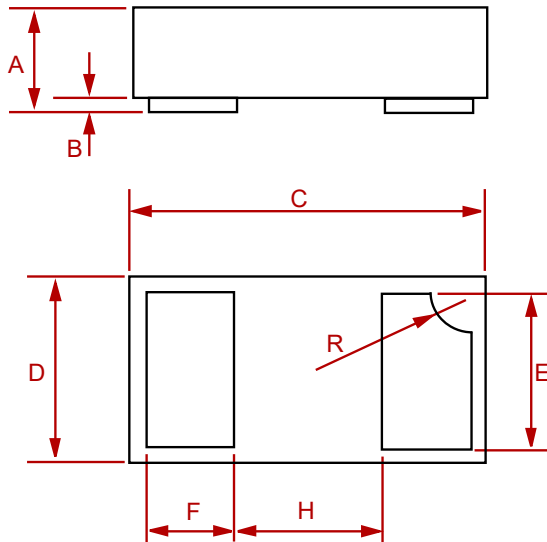


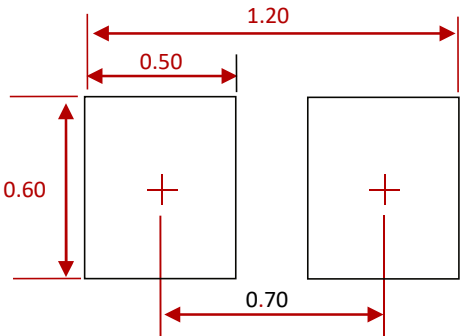
Fig2. Power Derating Curve

PACKAGE MECHANICAL DATA



| Dim | Inches    |       | Millimeters |       |
|-----|-----------|-------|-------------|-------|
|     | MIN       | MAX   | MIN         | MAX   |
| A   | 0.0125    | 0.02  | 0.32        | 0.52  |
| B   | 0.000     | 0.002 | 0.00        | 0.05  |
| C   | 0.037     | 0.043 | 0.95        | 1.080 |
| D   | 0.022     | 0.027 | 0.55        | 0.680 |
| E   | 0.016     | 0.024 | 0.40        | 0.60  |
| F   | 0.008     | 0.012 | 0.20        | 0.30  |
| H   | 0.015Typ. |       | 0.40Typ.    |       |
| R   | 0.001     | 0.005 | 0.05        | 0.15  |

Suggested Pad Layout



- NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
  2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY.  
CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR  
COMPANY'S MANUFACTURING GUIDELINES ARE MET.

Order information

| Orderable Device | Package | Packing Option |
|------------------|---------|----------------|
| SP3022-01ETG-MS  | SOD-882 | 10000PCS       |

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