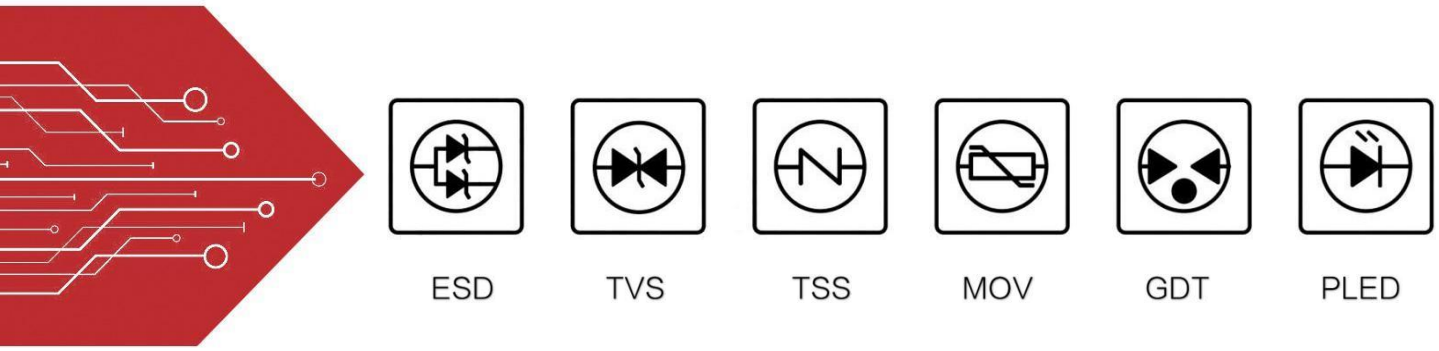
# MSKSEMI
SEMICONDUCTOR




# Product data sheet

## Feature

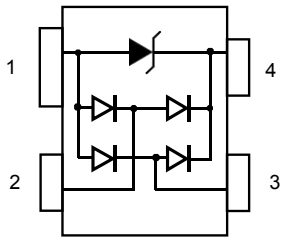
350 W Peak Power per Line (tp = 8/20μs)
SOT-143 package
ESD Protection > 15 kV
Unidirectional configurations
Protects 2 I/O Ports & Power Supply
Low Capacitance: 4 pF
Low clamping voltage
RoHS Compliant in Lead-Free Versions
Transient protection for data lines to IEC 61000-4-2(ESD)
±15KV(air) ±8KV(contact); IEC 61000-4-4 (EFT) 40A (5/50ns)

## Applications

Ethernet - 10/100 Base T
Fire wire
Wireless communications
USB interface

## Mechanical Characteristics

Lead finish:100% matte Sn(Tin)
Mounting position: Any
Qualified max reflow temperature:260℃
Device meets MSL 1 requirements
Pure tin plating: 7 ~ 17 um
Pin flatness：≤3mil




SOT-143

### Electrical characteristics per line@( unless otherwisespecified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Reverse Stand-off Voltage | $V_{RWM}$ | | | | 5 | V |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_t$ = 1mA | 6 | | 8.5 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ =5.0V, T=25℃ | | | 1 | μA |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A, $t_P$ = 8/20μs | | | 12.5 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$=5A, $t_P$ = 8/20μs | | | 24.0 | V |
| Capacitance Between IO and GND | $C_J$ | $V_R$=0V, f = 1MHz | | 3.0 | | pF |
| Capacitance Between IO and I/O | $C_J$ | $V_R$=0V, f = 1MHz | | 1.5 | | pF |

### Absolute maximum rating@25℃

| Rating | Symbol | Value | Units |
|---|---|---|---|
| Peak Pulse Power ($t_p$=8/20μs) | $P_{pp}$ | 350 | W |
| Peak Pulse Power ($t_p$=8/20μs) | $I_{pp}$ | 9 | A |
| Operating Temperature | $T_J$ | -55 to +150 | ℃ |
| Storage Temperature | $T_{STG}$ | -55 to +150 | ℃ |

## Electronics Parameter

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

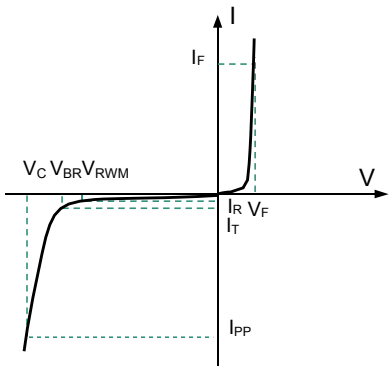



***FIG1: Pulse Waveform***

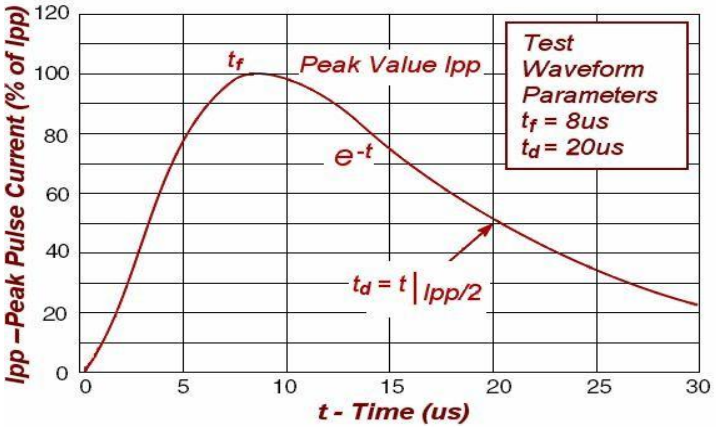
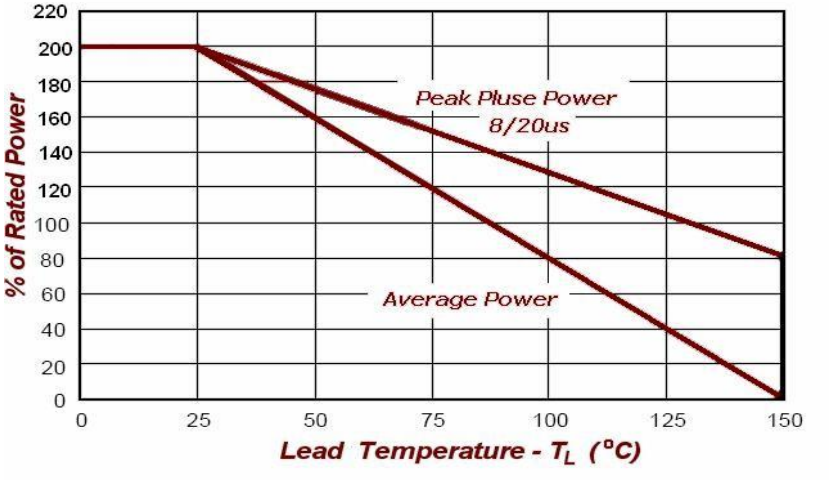
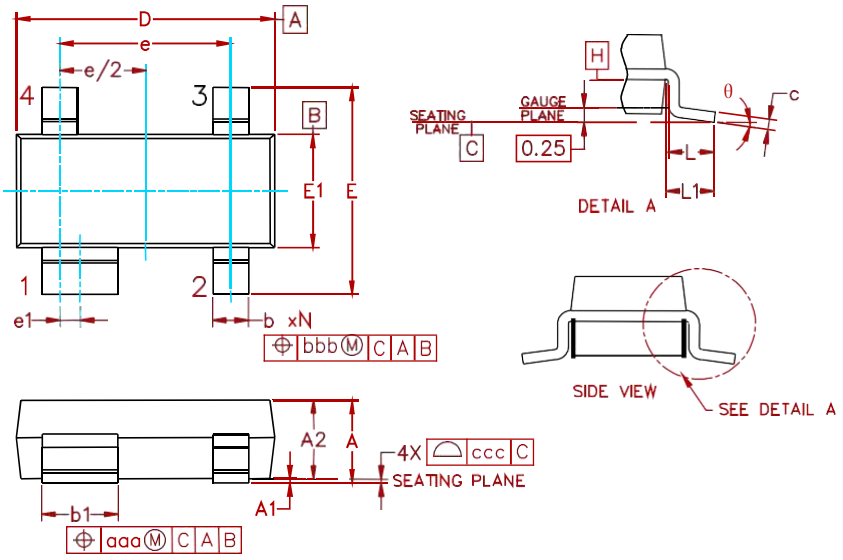



***FIG2:Power Derating***

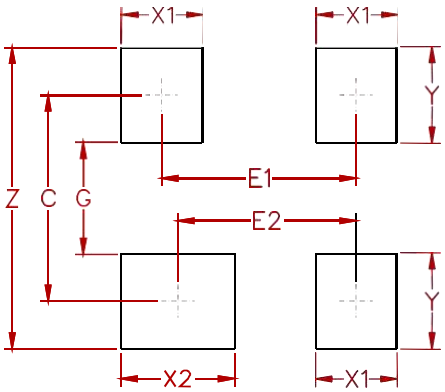


## PACKAGE MECHANICAL DATA




| Symbol | Inches | | | Millimeters | | |
|---|---|---|---|---|---|---|
| | Min. | Nom. | Max. | Min. | Nom. | Max. |
| A | 0.031 | - | 0.048 | 0.80 | - | 1.22 |
| A1 | 0.000 | - | 0.008 | 0.013 | - | 0.15 |
| A2 | 0.020 | 0.035 | 0.042 | 0.75 | 0.90 | 1.07 |
| b | 0.011 | - | 0.020 | 0.30 | - | 0.51 |
| b1 | 0.029 | - | 0.037 | 0.76 | - | 0.94 |
| c | 0.003 | - | 0.008 | 0.08 | - | 0.20 |
| D | 0.110 | 0.114 | 0.120 | 2.80 | 2.90 | 3.04 |
| E | 0.082 | 0.093 | 0.104 | 2.10 | 2.37 | 2.64 |
| E1 | 0.047 | 0.051 | 0.055 | 1.20 | 1.30 | 1.40 |
| e | 0.075 | | | 1.92 BSC | | |
| e1 | 0.008 | | | 0.20 BSC | | |
| L | 0.015 | 0.020 | 0.024 | 0.40 | 0.50 | 0.60 |
| L1 | (0.021) | | | (0.54) | | |
| N | 4 | | | 4 | | |
| θ | 0° | - | 8° | 0° | - | 8° |
| aaa | 0.006 | | | 0.15 | | |
| bbb | 0.008 | | | 0.20 | | |
| ccc | 0.004 | | | 0.10 | | |

## Suggested Pad Layout




## REEL SPECIFICATION

| P/N | PKG | QTY |
|---|---|---|
| PRTR5V0U2X-MS | SOT-143 | 3000 |

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