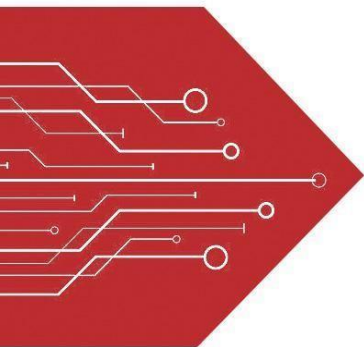


# MSKSEMI

SEMICONDUCTOR



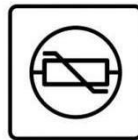
ESD



TVS



TSS



MOV

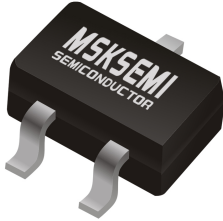
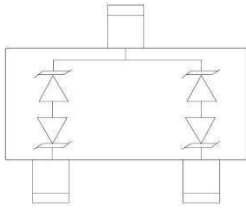


GDT



PLED

Product data sheet



**SOT-23**

**Features**

- ◆ 300 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- ◆ Transient protection for high speed data lines to IEC 61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$ (contact)  
IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ Working voltages : 3.3V,5V,12V,15V,24V
- ◆ Protects two bidirectional line
- ◆ Low operating and clamping voltages
- ◆ Solid-state silicon avalanche technology

**Applications**

- ◆ Notebooks, Desktops, Servers and Video Graphics Cards
- ◆ USB Power & Data Line Protection
- ◆ Monitors and Flat Panel Displays
- ◆ I<sup>2</sup>C Bus Protection
- ◆ Portable Instrumentation
- ◆ Set Top Box

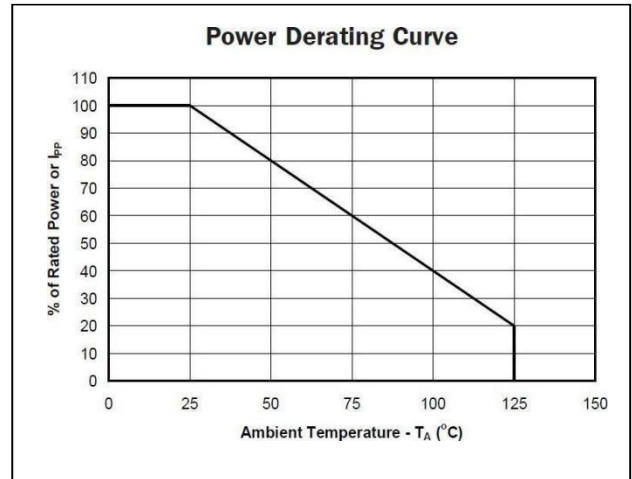
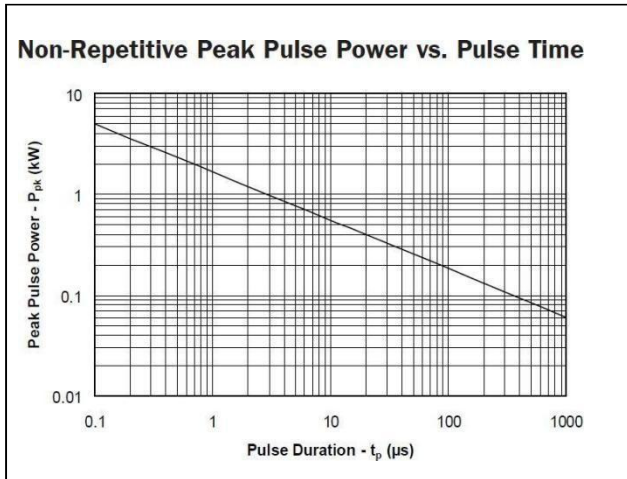
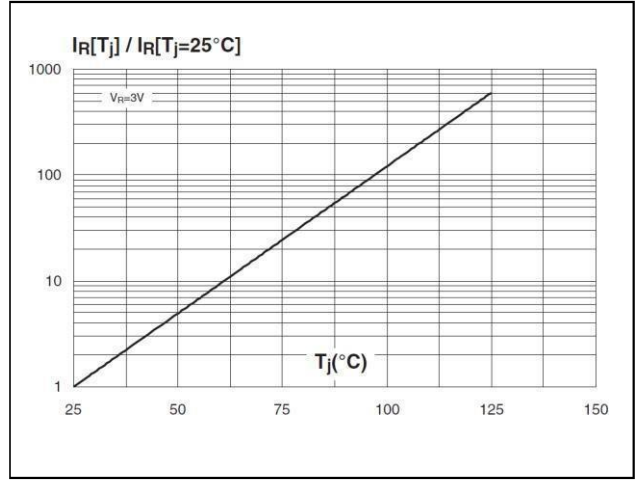
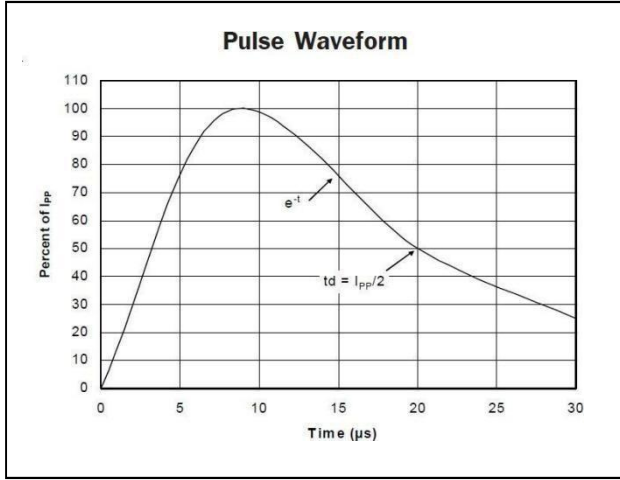
**Electrical Characteristics@ Ta=25°C unless otherwise**

P/N	V <sub>RWM</sub> (V) (max.)	V <sub>B</sub> (V) (min.)	I <sub>T</sub> (mA)	V <sub>C@1A</sub> (V) (max.)	V <sub>C</sub> (V)		I <sub>R</sub> ( $\mu$ A) (max.)	C <sub>T</sub> (pF) (max.)
					(max.)	(@A)		
PESD3V3L2BT-MS	3.3	4	1	7.0	14	18	1	100
PESD5V0L2BT-MS	5	6	1	9.8	18	13	1	75
PESD12VL2BT-MS	12	13.3	1	19	32	5	1	20
PESD15VL2BT-MS	15	16.7	1	24	38	5	1	20
PESD24VL2BT-MS	24	26.7	1	43	52	5	1	35

**Maximum Rating @ Ta=25 °C unless otherwise specified**

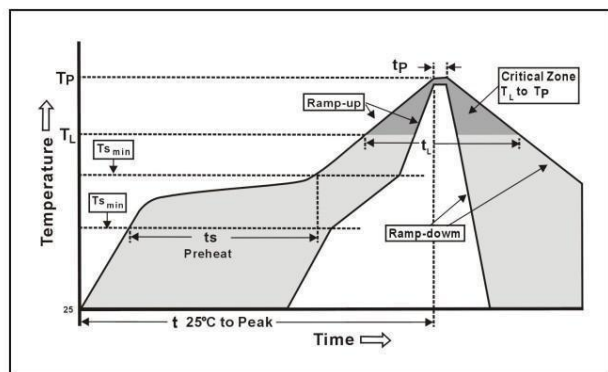
Symbol	Parameter	Ratings	Units
P <sub>PK</sub>	Peak Pulse Power ( $t_p = 8/20\mu s$ )	300	Watts
T <sub>L</sub>	Lead Soldering Temperature	260(10sec.)	°C
T <sub>J</sub>	Operating Temperature	-55 to +125	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

Typical Characteristics@ Ta=25°C unless otherwise specified

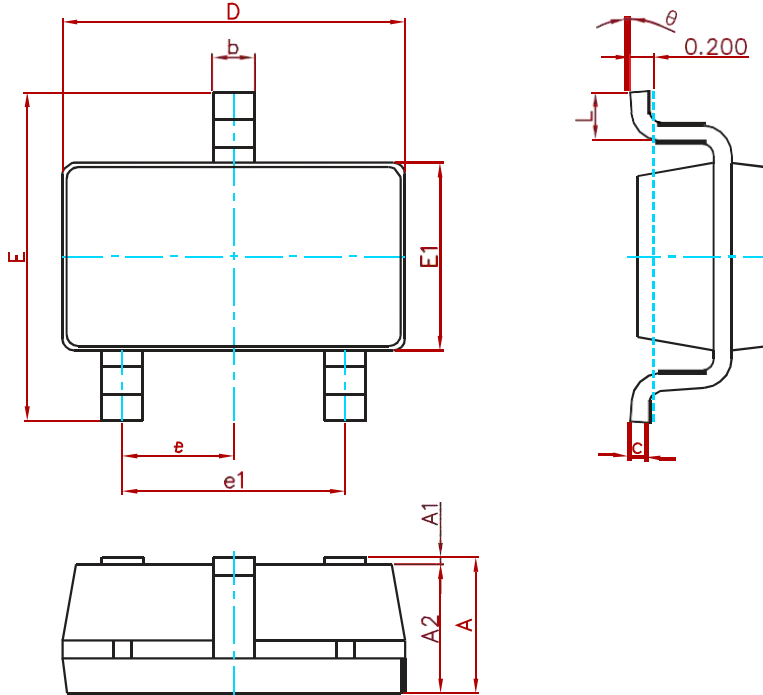


Soldering Parameters

<b>Reflow Condition</b>		<b>Fb – Free assembly</b>
<b>Pre Heat</b>	- Temperature Min ( $T_{s(Min)}$ )	150°C
	- Temperature Max ( $T_{s(Max)}$ )	200°C
	- Time (Min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second Max
$T_{s(Max)}$ to $T_L$ - Ramp-up Rate		3°C/second Max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Temperature ( $t_r$ )	60 – 150 seconds
<b>Peak Temperature (<math>T_p</math>)</b>		250 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
<b>Ramp-down Rate</b>		6°C/second Max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes Max.
<b>Do not exceed</b>		260°C

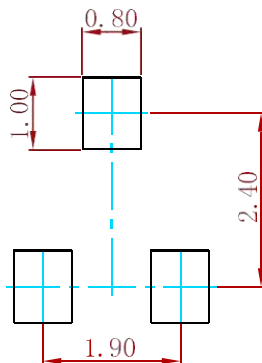


**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

**Suggested Pad Layout**



Note:  
 1. Controlling dimension: in millimeters.  
 2. General tolerance: ± 0.05mm.  
 3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
PESDXXXL2BT-MS	SOT-23	3000

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