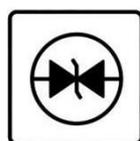


MSKSEMI 美森科

SEMICONDUCTOR



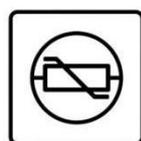
ESD



TVS



TSS



MOV



GDT



PLED

PDWL050019-MS

Product specification

General Features

- 150 watts peak pulse power per line(tP=8/20μs)
- Protects four I/O lines
- Low clamping voltage
- Low operating voltage
- Low capacitance
- RoHS compliant

MAIN APPLICATIONS

- USB 2.0&3.0 power and data line protection
- Digital video interface (DVI)
- Notebook computers
- Video graphics cards
- Monitors and flat panel displays
- 10/ 100/ 1000 ethernet
- SIM ports
- ATM interfaces

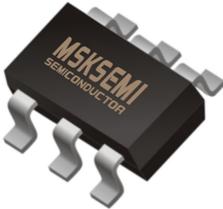
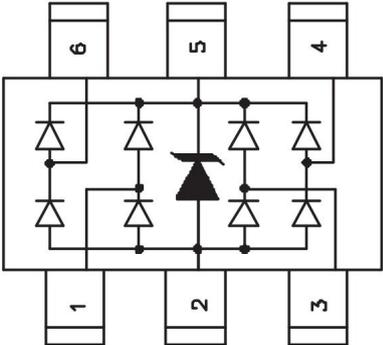
PROTECTION SOLUTION TO MEET

- IEC61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 5A (8/20μs)

MECHANICAL CHARACTERISTICS

- Molding compound flammability rating: UL 94V-0
- Quantity per reel: 3, 000pcs
- Lead finish: lead free

Reference News

PACKAGE OUTLINE	Pin Configuration	Marking
 <p data-bbox="248 1648 389 1682">SOT-23-6</p>		

ABSOLUTE MAXIMUM RATINGS (TA=25°C , RH=45%-75%, unless otherwise noted)

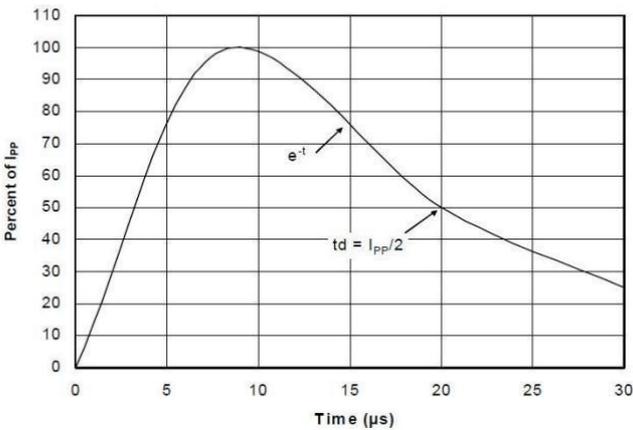
Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P _{PP}	150	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	+/- 20 +/-20	kV
Lead soldering temperature	T _L	260 (10 sec.)	°C
Operating junction temperature range	T _J	-55 to +125	°C
Storage temperature range	T _{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (TA=25°C)

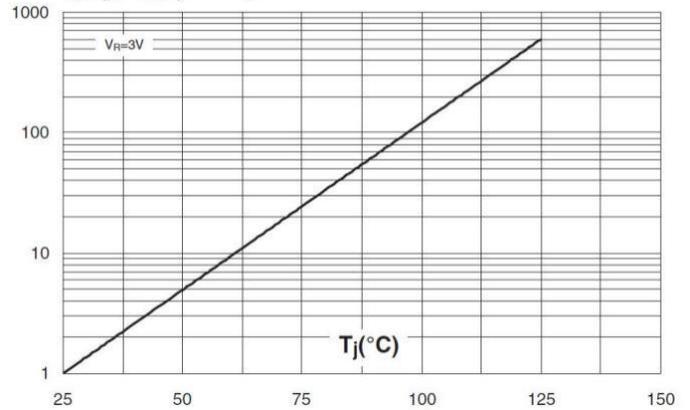
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V _{RWM}				5.0	V
Reverse breakdown voltage	V _{BR}	I _T =1mA	6.0			V
Reverse leakage current	I _R	V _{RWM} =5V			1	μA
Forward voltage	V _F	I _T =10mA		0.8	1.0	V
Clamping voltage (I/O pin to Ground)	V _C	I _{PP} =1A, t _P =8/20μs		9.5	11	V
	V _C	I _{PP} =5A, t _P =8/20μs		12.5	15	
Junction capacitance	C _J	V _{RWM} =0V, f=1MHz Any I/O pin to Ground		0.65	0.8	pF
		V _{RWM} =0V, f=1MHz Between I/O pins		0.3	0.5	

Typical Characteristics @Ta=25°C unless otherwise specified

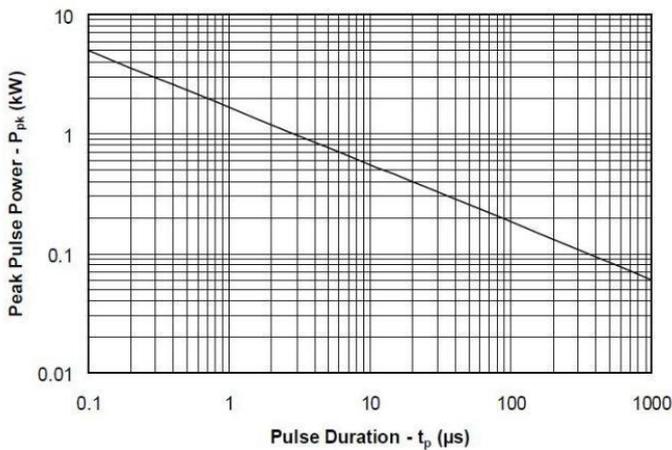
Pulse Waveform



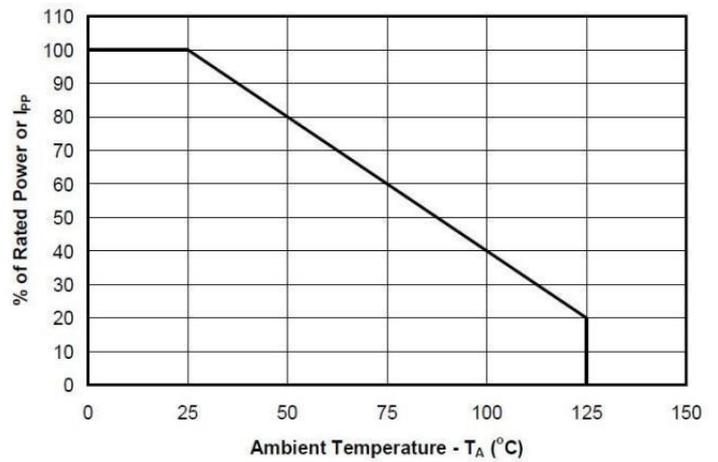
$I_R[T_j] / I_R[T_j=25^\circ\text{C}]$



Non-Repetitive Peak Pulse Power vs. Pulse Time

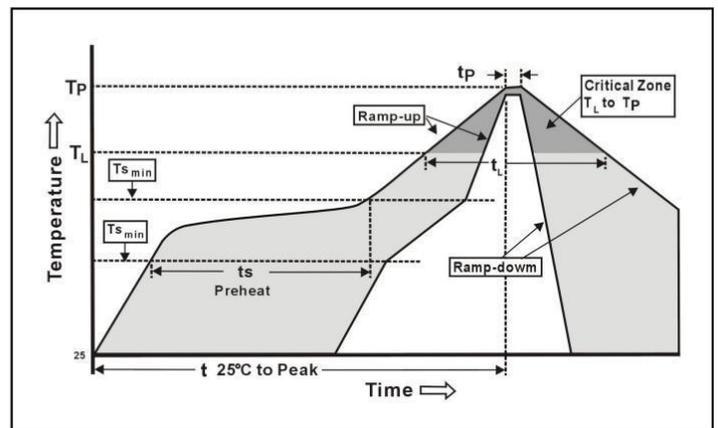


Power Derating Curve

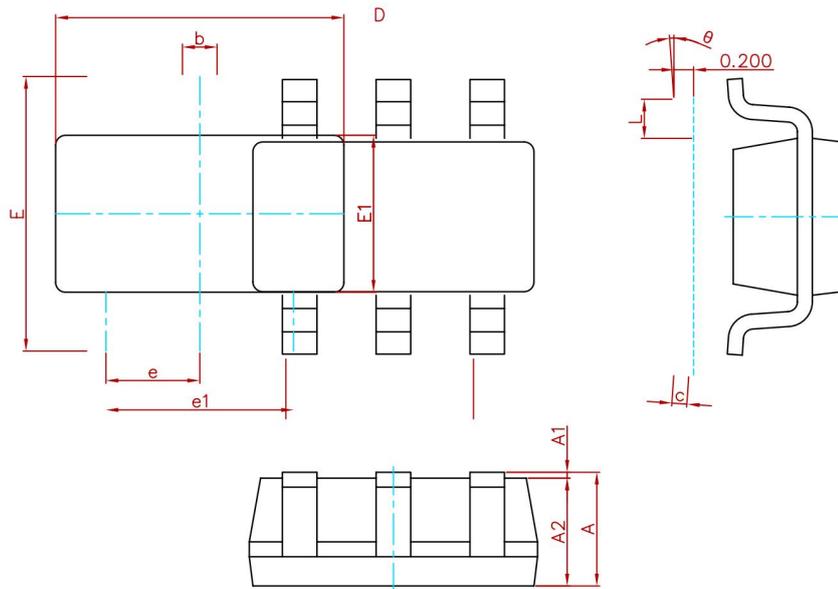


Soldering Parameters

Reflow Condition		Fb – Free assembly
Pre Heat	- Temperature Min ($T_{s(\text{Min})}$)	150°C
	- Temperature Max ($T_{s(\text{Max})}$)	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
$T_{s(\text{Max})}$ to T_L - Ramp-up Rate		3°C/second Max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_l)	60 – 150 seconds
Peak Temperature (T_p)		250 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second Max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C

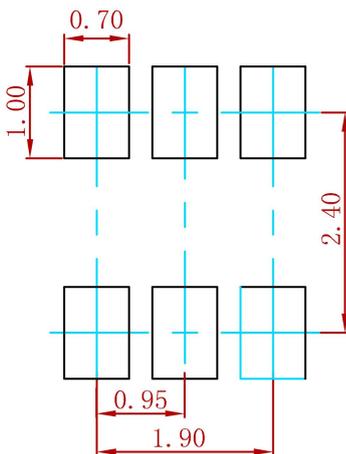


PACKAGE MECHANICAL DATA



Symbol	Dimensions		Dimensions	
	Min.	In Millimeters	Min.	In Inches
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
PDWL050019-MS	SOT-23-6	3000

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