

MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT

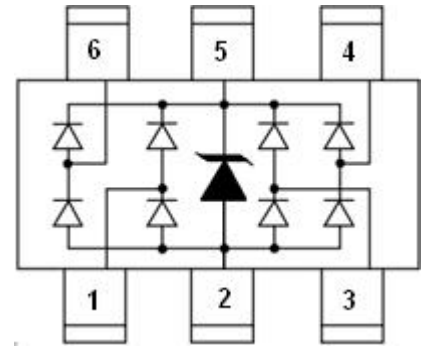


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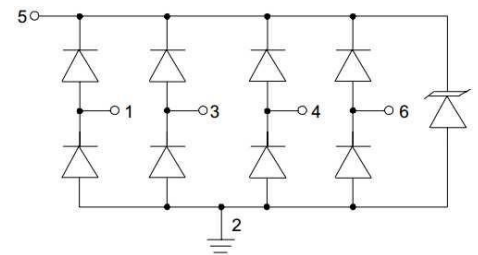
Product data sheet

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



PIN Configuration



Circuit Diagram
SOT-23-6

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)

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

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20µs waveform	P _{PP}	250	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 (T_A=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} =10A, t _P =8/20µs		12.5	20	
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	

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T

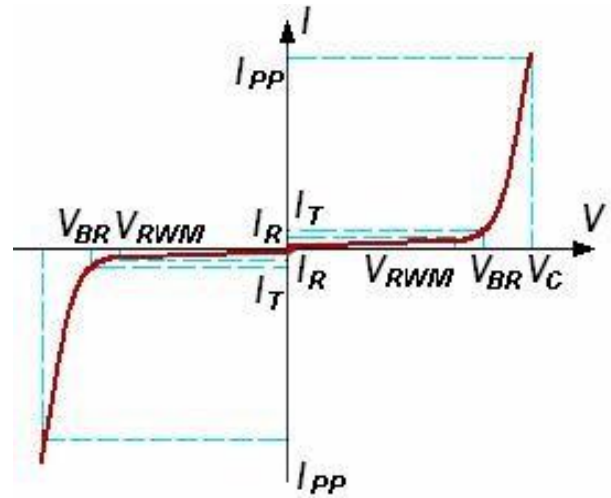


FIG1: Pulse Waveform

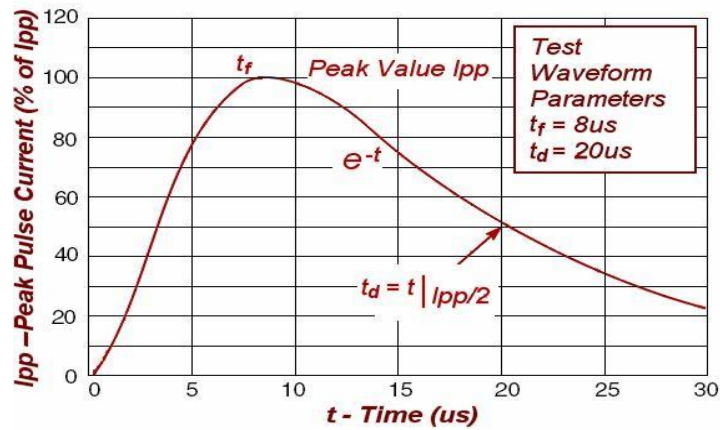
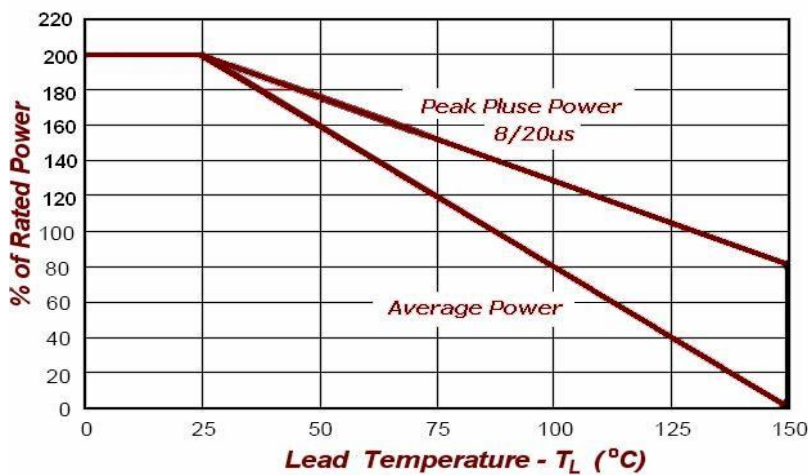
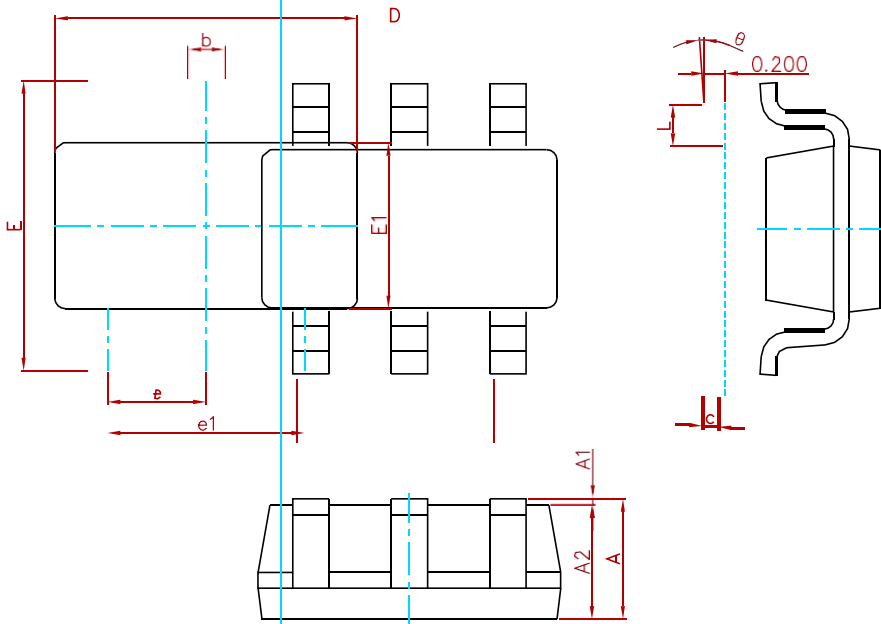


FIG2: Power Derating

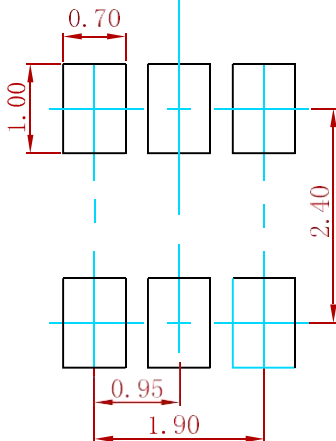


PACKAGE MECHANICAL DATA



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
theta	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
ESD5425E-MS	SOT-23-6	3000

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