

MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



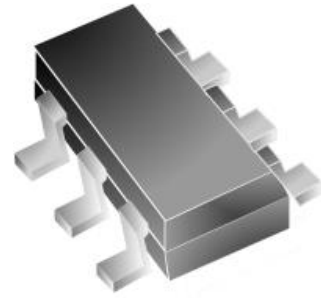
PLED

Product data sheet

www.msksemi.com

FEATURES:

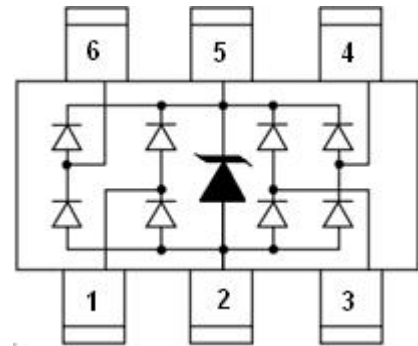
- ✂ 100 watts peak pulse power per line ($t_p=8/20\mu s$)
- ✂ Protects four I/O lines
- ✂ Low clamping voltage
- ✂ Low operating voltage
- ✂ Low capacitance
- ✂ RoHS compliant



SOT-23-6

MAIN APPLICATIONS

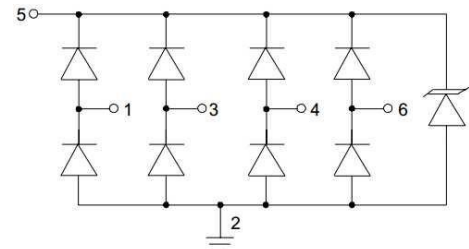
- ✂ USB 2.0&3.0 power and data line protection
- ✂ Digital video interface (DVI)
- ✂ Notebook computers
- ✂ Video graphics cards
- ✂ Monitors and flat panel displays
- ✂ 10/100/1000 ethernet
- ✂ SIM ports
- ✂ ATM interfaces



PIN Configuration

PROTECTION SOLUTION TO MEET

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



Circuit Diagram

MECHANICAL CHARACTERISTICS

- ✂ JEDEC SOT23-6L package
- ✂ Molding compound flammability rating: UL 94V-0
- ✂ Quantity per reel: 3, 000pcs
- ✂ Lead finish: lead free
- ✂ Marking code: V05

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, $\text{RH}=45\%-75\%$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	100	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.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5.0	V
Reverse breakdown voltage	V_{BR}	$I_T=1\text{mA}$	6.0			V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$			1	μA
Forward voltage	V_F	$I_T=10\text{mA}$		0.8	1.0	V
Clamping voltage (I/O pin to Ground)	V_C	$I_{PP}=1\text{A}$, $t_P=8/20\mu\text{s}$		9.5	11	V
	V_C	$I_{PP}=5\text{A}$, $t_P=8/20\mu\text{s}$		12.5	15	
Junction capacitance	C_J	$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Any I/O pin to Ground		0.65	0.8	pF
		$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Between I/O pins		0.3	0.5	

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

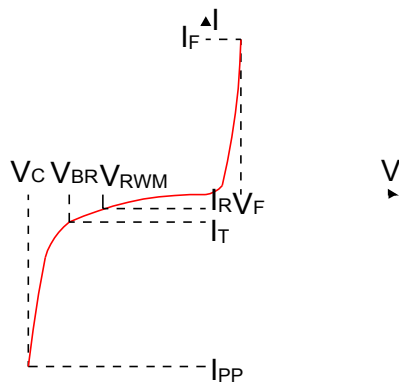
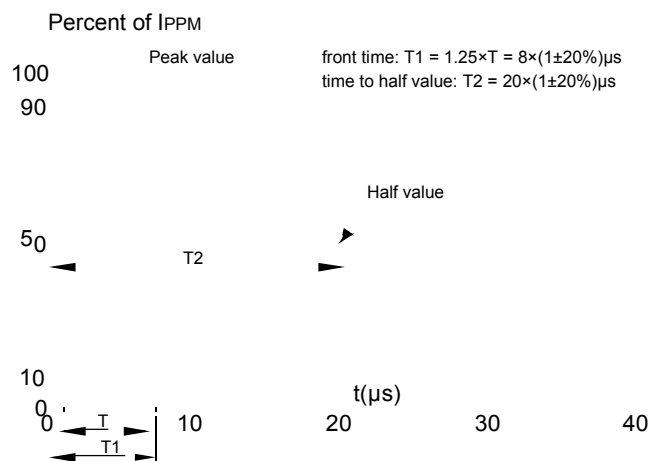
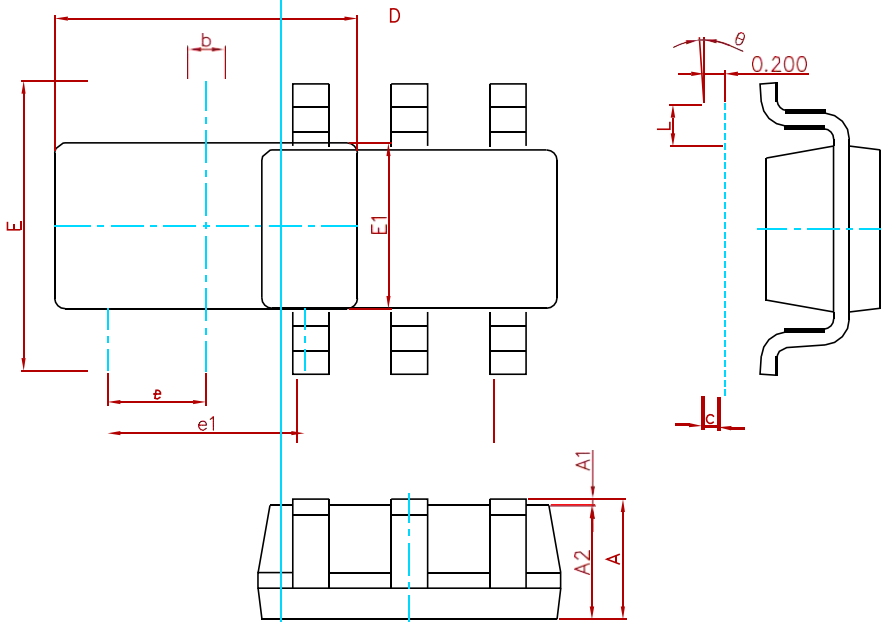


FIG.2: Pulse waveform (8/20 μs)

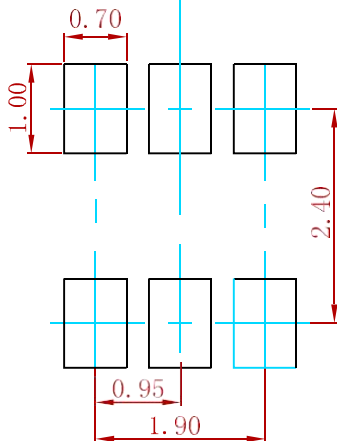


PACKAGE MECHANICAL DATA



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
SRV05-4	SOT-23-6	3000

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