

FEATURES

- ◆ 300 Watts Peak Pulse Power ($t_p=8/20\mu s$)
- ◆ Replacement for SOT23
- ◆ Protects two I/O or two power line
- ◆ Low Clamping Voltage
- ◆ Reverse Voltage: 5V , 12V , 24V , 36 V
- ◆ Low Leakage Current
- ◆ Response Time is Typically < 1 ns

IEC COMPATIBILITY (EN61000-4)

- ◆ IEC 61000-4-2 ESD air $\pm 20KV$, contact $\pm 15KV$
- ◆ IEC 61000-4-4 ETF 20A (5/50ns)
- ◆ IEC 61000-4-5 Surge 18A (8/20 μs)

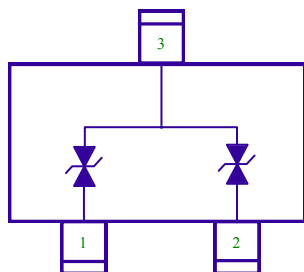
Mechanical Characteristics

- ◆ JEDEC SOT23 package
- ◆ RoHS Compliant
- ◆ Marking : Marking Code

Applications

- ◆ RS232, RS422, RS485
- ◆ Power Line
- ◆ Industrial Controls
- ◆ Set-Top Box
- ◆ Servers, Notebook, and Desktop PC

Schematic & PIN Configuration



SOT23 Top View

ABSOLUTE MAXIMUM RATING

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PK}	300	Watts
Lead Soldering Temperature	T_L	260 (10sec)	$^{\circ}C/W$
Operating Temperature	T_J	-55~150	$^{\circ}C$
Storage Temperature	T_{STG}	-40~120	$^{\circ}C$
IEC61000-4-2	V_{PP}	Air 15 Contact 8	KV

ELECTRICAL CHARACTERISTICS

SOT05C

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	6			V
Leakage Current	I_R	@ V_{RWM}			5	μA
Clamping Voltage	V_C	@1A			9.8	V
Peak Pulse Current	I_{PP}	8/20 μs			18	A
Junction Capacitance	C_{J1-2}	$V_R=0V, f=1Mhz$		100		pf
	C_{J1-3}, C_{J2-3}	$V_R=0V, f=1Mhz$		150		pf

SOT12C

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	13.3			V
Leakage Current	I_R	@ V_{RWM}			1	μA
Clamping Voltage	V_C	@1A			19	V
Peak Pulse Current	I_{PP}	8/20 μs			10	A
Junction Capacitance	C_{J1-2}	$V_R=0V, f=1Mhz$		30		pf
	C_{J1-3}, C_{J2-3}	$V_R=0V, f=1Mhz$		50		pf

ELECTRICAL CHARACTERISTICS

SOT15C						
Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				15	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	16.7			V
Leakage Current	I_R	@ V_{RWM}			1	μA
Clamping Voltage	V_C	@1A			24	V
Peak Pulse Current	I_{PP}	8/20 μs			8	A
Junction Capacitance	C_{J1-2}	$V_R=0V, f=1Mhz$		25		pf
	C_{J1-3}, C_{J2-3}	$V_R=0V, f=1Mhz$		40		pf

SOT24C						
Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	26.7			V
Leakage Current	I_R	@ V_{RWM}			1	μA
Clamping Voltage	V_C	@1A			43	V
Peak Pulse Current	I_{PP}	8/20 μs			5	A
Junction Capacitance	C_{J1-2}	$V_R=0V, f=1Mhz$		20		pf
	C_{J1-3}, C_{J2-3}	$V_R=0V, f=1Mhz$		30		pf

SOT36C						
Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				36	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	40			V
Leakage Current	I_R	@ V_{RWM}			1	μA
Clamping Voltage	V_C	@1A			60	V
Peak Pulse Current	I_{PP}	8/20 μs			4	A
Junction Capacitance	C_{J1-2}	$V_R=0V, f=1Mhz$		20		pf
	C_{J1-3}, C_{J2-3}	$V_R=0V, f=1Mhz$		26		pf

Figure 1: Peak Pulse Power Vs Pulse Time

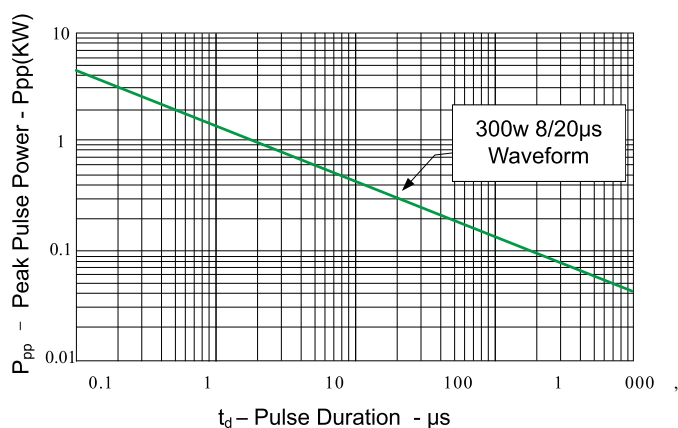


Figure 2: Power Derating Curve

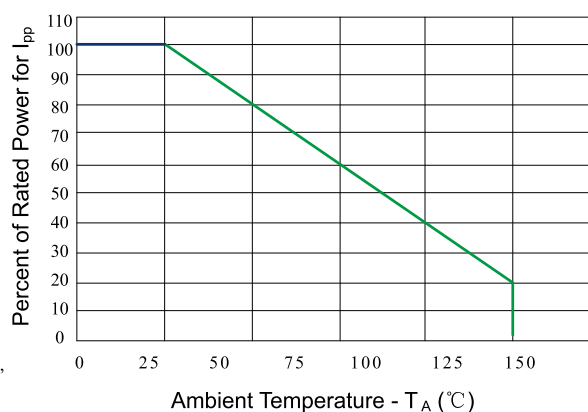
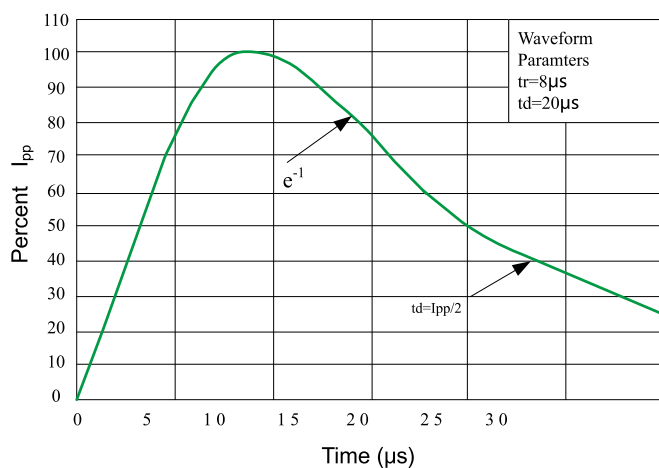
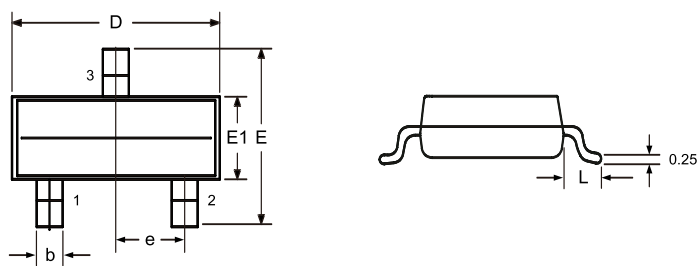


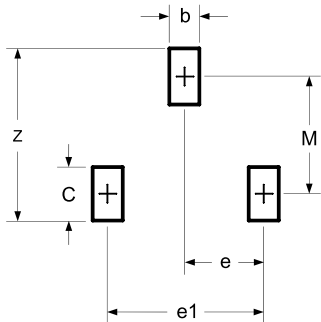
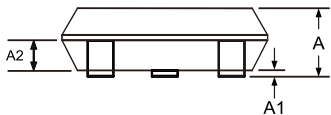
Figure 5: Pulse Waveform



OUTLINE DRAWING - SOT23



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
D	2.800	3.000	0.110	0.118
b	0.300	0.500	0.012	0.020
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 BSC		0.037 BSC	
L	0.300	0.500	0.012	0.020



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.088	2.20
C	0.0058	0.15
Z	0.093	2.35
e	0.037 BSC	0.95 BSC
e1	0.074 BSC	1.9 BSC
b	0.0389	0.35