

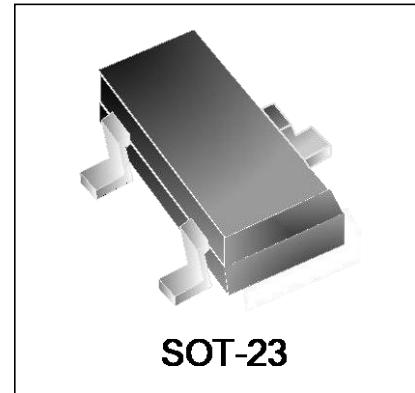
Transient Voltage Suppressor

atts peak pulse power ($t_p = 8/20\mu s$)

- Low Clamping Voltage
- Working Voltages: 12V
- Low Leakage Current
- Response Time is Typically $< 1\text{ ns}$

IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 12A (8/20 μs)



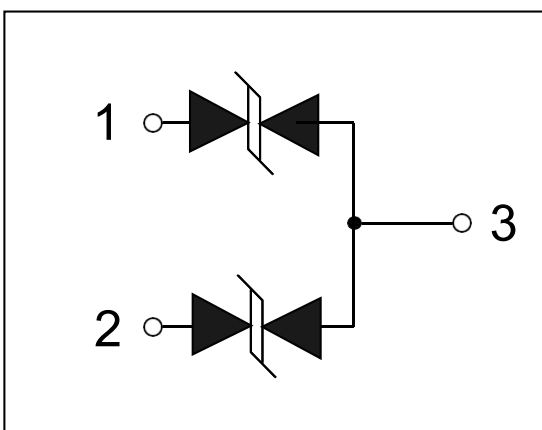
Mechanical Characteristics

- JEDEC SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant

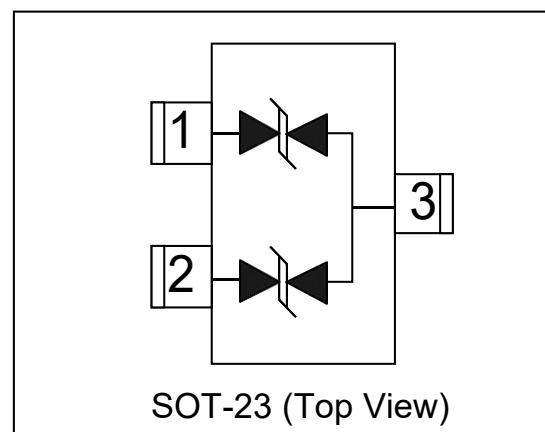
Applications

- RS-232, RS-422 & RS-485
- Cellular Handsets and Accessories
- Control & Monitoring Systems
- Portable Electronics
- Set-Top Box
- Servers, Notebook, and Desktop PC
- Wireless Bus Protection

Circuit Diagram



Schematic & PIN Configuration



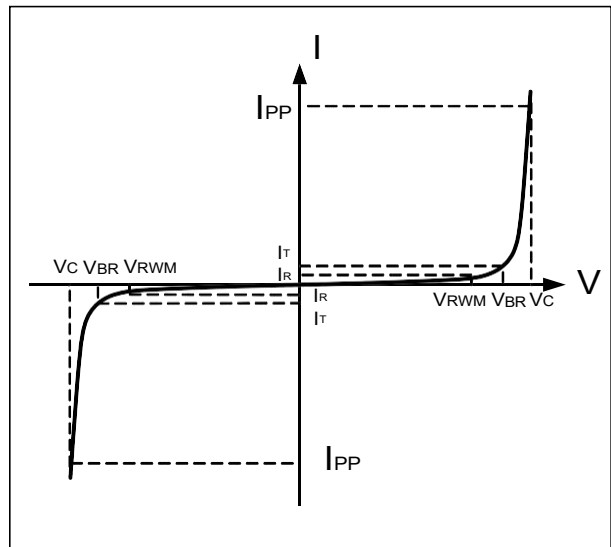
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Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	350	Watts
Lead Soldering Temperature	T_L	260(10sec)	$^{\circ}C$
Operating Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

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



Electrical Characteristics

CSE12BCS23						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	13.3			V
Reverse Leakage Current	I_R	$V_{RWM}=12V, T=25^{\circ}C$			1	μA
Peak Pulse Current	I_{PP}	$t_p=8/20\mu s$			12	A
Clamping Voltage	V_C	$I_{PP}=1A, t_p=8/20\mu s$			18	V
Maximum Clamping Voltage	V_C	$I_{PP}=12A, t_p=8/20\mu s$			25	V
Junction Capacitance	C_j	Pin 1 to 3 and Pin 2 to 3 $V_R=0V, f=1MHz$		30		pF

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

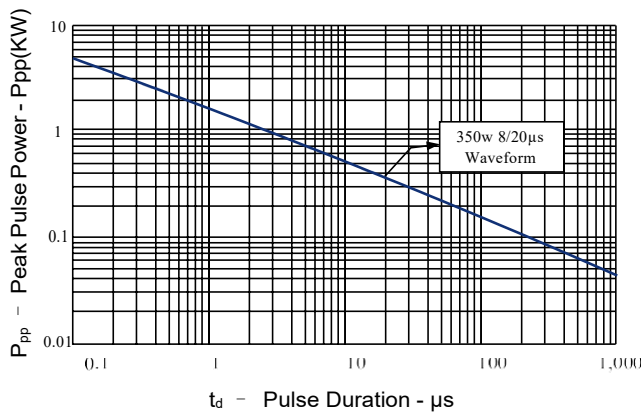


Figure 2: Power Derating Curve

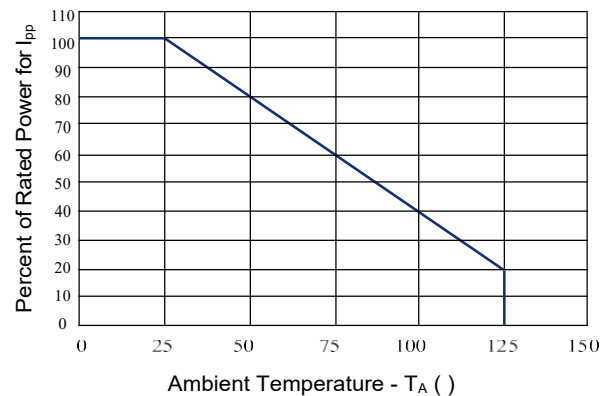


Figure 3: Clamping Voltage vs. Peak Pulse Current

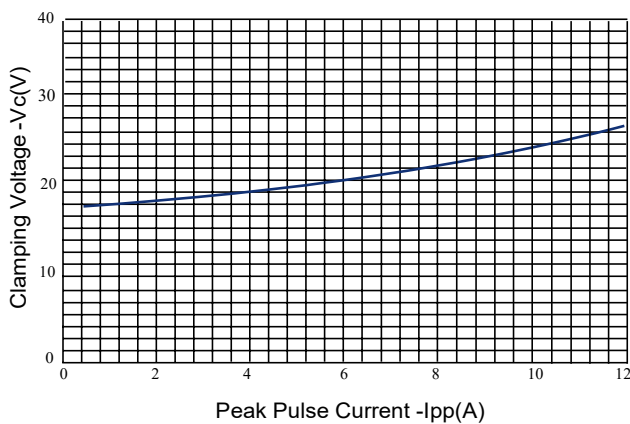


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

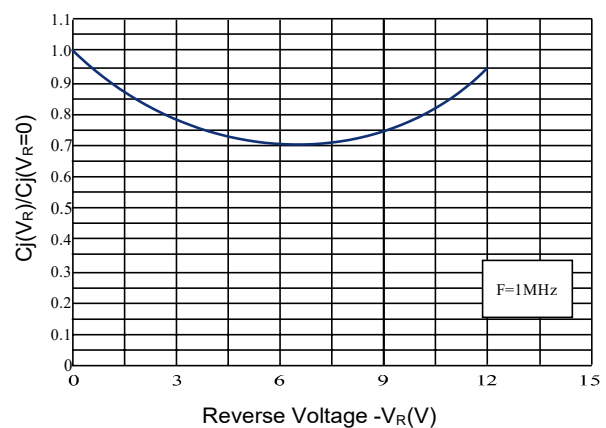
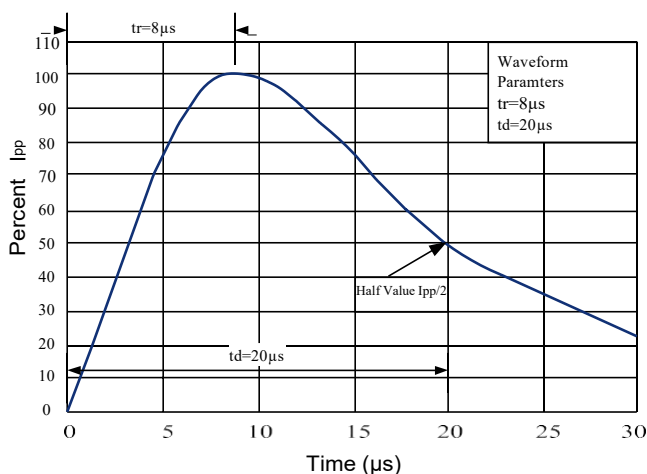
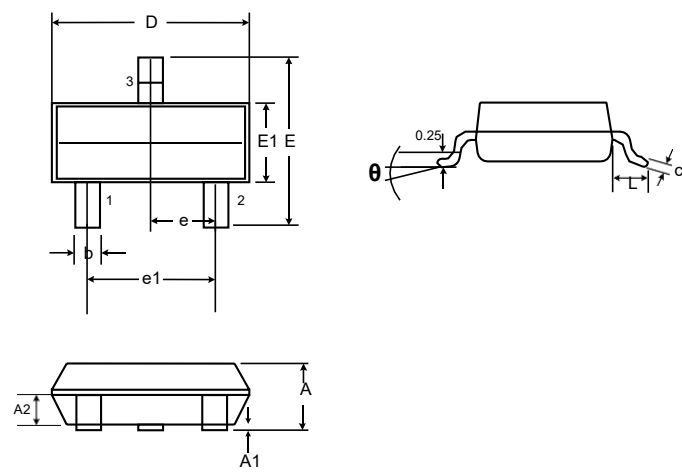
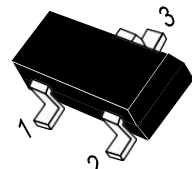
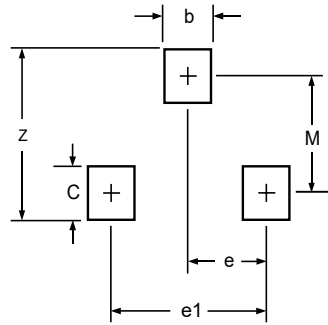


Figure 5: Pulse Waveform



Transient Voltage Suppressor

Outline Drawing – SOT-23

PACKAGE OUTLINE 	 SOT-23 <table><tr><th colspan="5">DIMENSIONS</th></tr><tr><th rowspan="2">SYMBOL</th><th colspan="2">MILLIMETER</th><th colspan="2">INCHES</th></tr><tr><th>MIN</th><th>MAX</th><th>MIN</th><th>MAX</th></tr><tr><td>A</td><td>0.90</td><td>1.15</td><td>0.035</td><td>0.045</td></tr><tr><td>A1</td><td>0.00</td><td>0.10</td><td>0.000</td><td>0.004</td></tr><tr><td>A2</td><td>0.60</td><td>0.70</td><td>0.0236</td><td>0.0275</td></tr><tr><td>b</td><td>0.30</td><td>0.50</td><td>0.012</td><td>0.020</td></tr><tr><td>c</td><td>0.08</td><td>0.15</td><td>0.003</td><td>0.006</td></tr><tr><td>D</td><td>2.80</td><td>3.00</td><td>0.110</td><td>0.118</td></tr><tr><td>E</td><td>2.25</td><td>2.55</td><td>0.089</td><td>0.100</td></tr><tr><td>E1</td><td>1.20</td><td>1.40</td><td>0.047</td><td>0.055</td></tr><tr><td>e</td><td colspan="2">0.95 BSC</td><td colspan="2">0.0374 BSC</td></tr><tr><td>e1</td><td>1.80</td><td>2.00</td><td>0.071</td><td>0.079</td></tr><tr><td>L</td><td>0.30</td><td>0.50</td><td>0.012</td><td>0.020</td></tr><tr><td>θ</td><td>0</td><td>8°</td><td>0</td><td>8°</td></tr></table>	DIMENSIONS					SYMBOL	MILLIMETER		INCHES		MIN	MAX	MIN	MAX	A	0.90	1.15	0.035	0.045	A1	0.00	0.10	0.000	0.004	A2	0.60	0.70	0.0236	0.0275	b	0.30	0.50	0.012	0.020	c	0.08	0.15	0.003	0.006	D	2.80	3.00	0.110	0.118	E	2.25	2.55	0.089	0.100	E1	1.20	1.40	0.047	0.055	e	0.95 BSC		0.0374 BSC		e1	1.80	2.00	0.071	0.079	L	0.30	0.50	0.012	0.020	θ	0	8°	0	8°
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Package Information

Qty: 3k/Reel

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