

# SINGLE AND DUAL TVS FOR ESD / TRANSIENT PROTECTION

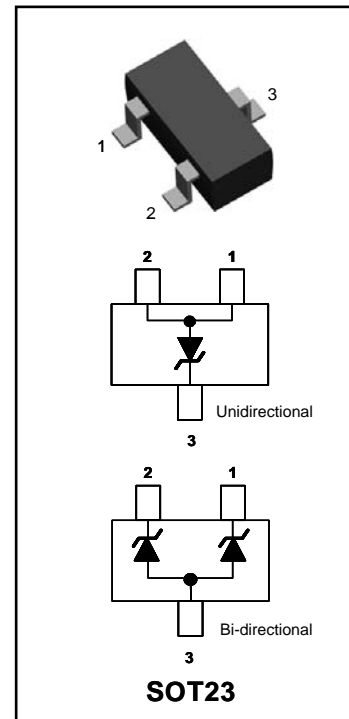
This Single and Dual Transient Protector has been designed to protect Sensitive Equipment against ESD and prevent Latch-Up events. The single unidirectional and the dual used as bi-directional devices protect up to two data lines in a single package giving the advantage of board space savings where this is a premium.

## SPECIFICATION FEATURES

- Working Peak Reverse Voltage Range - 5V to 36V
- Maximum Leakage Current of 5 $\mu$ A
- IEC61000-4-2 Compliance 15kV Air, 8kV Contact Discharge
- Industry Standard SOT23 Package
- 100% Tin Matte Finish (RoHS Compliant)

## APPLICATIONS

- Data Transmission Line Ports
- Computer Monitor Interface Port Protection
- Portable Consumer Electronics
- Instrumentation Equipment



## MAXIMUM RATINGS

Rating	Symbol	Value	Units
Peak Pulse Power 8/20 $\mu$ s Waveform	$P_{pp}$	500	W
ESD Voltage (HBM)	$V_{ESD}$	>25	kV
Operating Temperature Range	$T_J$	-55 to +150	$^{\circ}$ C
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}$ C
Lead Soldering Temperature (max. 10 s)	$T_L$	260	$^{\circ}$ C

## ELECTRICAL CHARACTERISTICS $T_j = 25^{\circ}$ C

### PJSOT05, PJSOT05C (Bi-directional)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{WRM}$				5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR} = 1mA$	6			V
Reverse Leakage Current	$I_R$	$V_R = 5V$			5	$\mu$ A
Clamping Voltage (8/20 $\mu$ s)	$V_C$	$I_{pp} = 20A$			10	V
Maximum Peak Pulse Current	$I_{pp}$	8/20 $\mu$ s Waveform			30	A
Off State Capacitance (Unidirectional)	$C_j$	0 Vdc Bias f = 1MHz			550	pF
Off State Capacitance (Bi-directional)	$C_j$	0 Vdc Bias f = 1MHz between pin 1 and 2			220	pF

**ELECTRICAL CHARACTERISTICS**  $T_j = 25^\circ\text{C}$ 
**PJSOT12, PJSOT12C (Bi-directional)**

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{WRM}$				12	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR} = 1\text{mA}$	13.3			V
Reverse Leakage Current	$I_R$	$V_R = 12\text{V}$			5	$\mu\text{A}$
Clamping Voltage (8/20 $\mu\text{s}$ )	$V_C$	$I_{pp} = 20\text{A}$			25	V
Maximum Peak Pulse Current	$I_{pp}$	8/20 $\mu\text{s}$ Waveform			24	A
Off State Capacitance (Unidirectional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$			200	pF
Off State Capacitance (Bi-directional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$ between pin 1 and 2			100	pF

**PJSOT15, PJSOT15C (Bi-directional)**

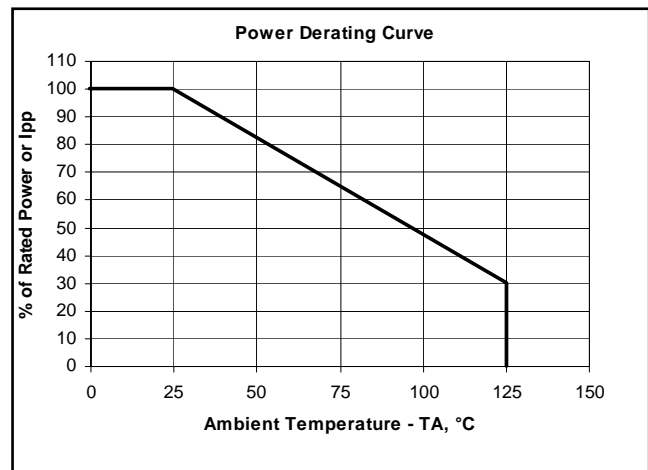
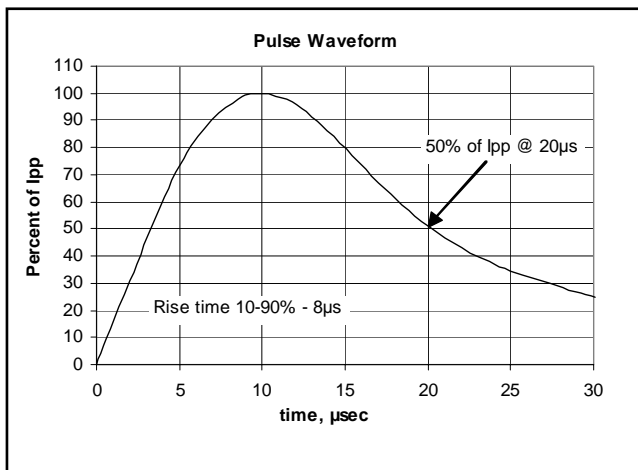
Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{WRM}$				15	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR} = 1\text{mA}$	16.7			V
Reverse Leakage Current	$I_R$	$V_R = 15\text{V}$			5	$\mu\text{A}$
Clamping Voltage (8/20 $\mu\text{s}$ )	$V_C$	$I_{pp} = 20\text{A}$			30	V
Maximum Peak Pulse Current	$I_{pp}$	8/20 $\mu\text{s}$ Waveform			20	A
Off State Capacitance (Unidirectional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$			170	pF
Off State Capacitance (Bi-directional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$ between pin 1 and 2			90	pF

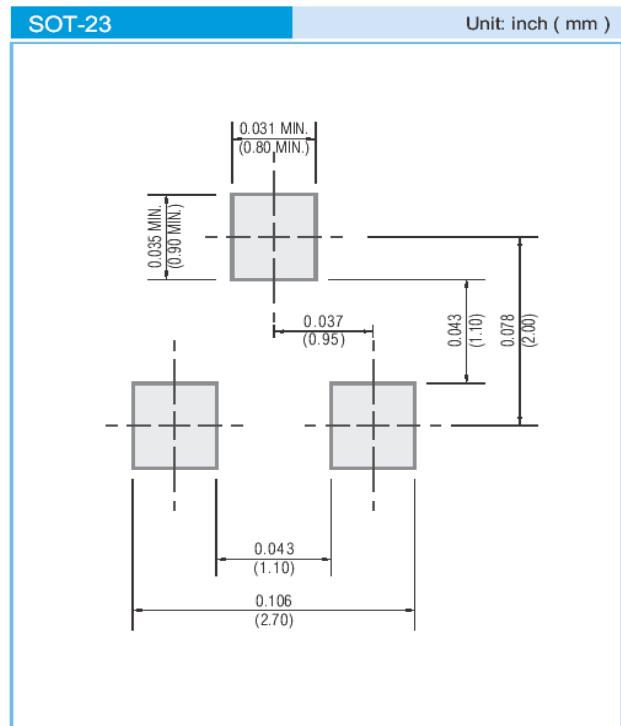
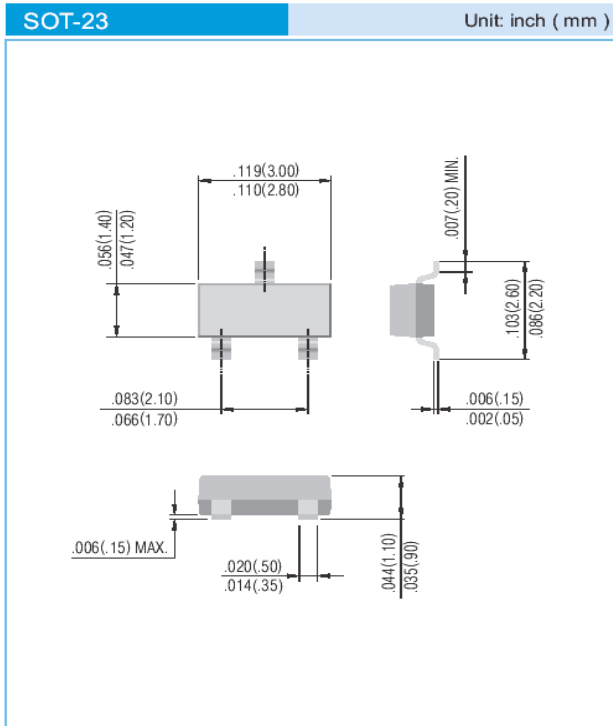
**PJSOT24, PJSOT24C (Bi-directional)**

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{WRM}$				24	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR} = 1\text{mA}$	26.7			V
Reverse Leakage Current	$I_R$	$V_R = 24\text{V}$			5	$\mu\text{A}$
Clamping Voltage (8/20 $\mu\text{s}$ )	$V_C$	$I_{pp} = 15\text{A}$			45	V
Maximum Peak Pulse Current	$I_{pp}$	8/20 $\mu\text{s}$ Waveform			18	A
Off State Capacitance (Unidirectional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$			150	pF
Off State Capacitance (Bi-directional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$ between pin 1 and 2			80	pF

**ELECTRICAL CHARACTERISTICS  $T_j = 25^\circ\text{C}$** 
**PJSOT36, PJSOT36C (Bi-directional)**

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{WRM}$				36	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR} = 1\text{mA}$	40			V
Reverse Leakage Current	$I_R$	$V_R = 36\text{V}$				
Clamping Voltage (8/20 $\mu\text{s}$ )	$V_C$	$I_{pp} = 7\text{A}$			72	V
Maximum Peak Pulse Current	$I_{pp}$	8/20 $\mu\text{s}$ Waveform			9	A
Off State Capacitance (Unidirectional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$			80	
Off State Capacitance (Bi-directional)	$C_j$	0 Vdc Bias $f = 1\text{MHz}$ between pin 1 and 2			45	pF



**PACKAGE AND SUGGESTED PAD LAYOUT**


TVS	Marking Code
PJSOT05	2A
PJSOT12	4A
PJSOT15	5A
PJSOT24	6A
PJSOT36	SA
PJSOT05C	2AC
PJSOT12C	4AC
PJSOT15C	5AC
PJSOT24C	6AC
PJSOT36C	SAC

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