

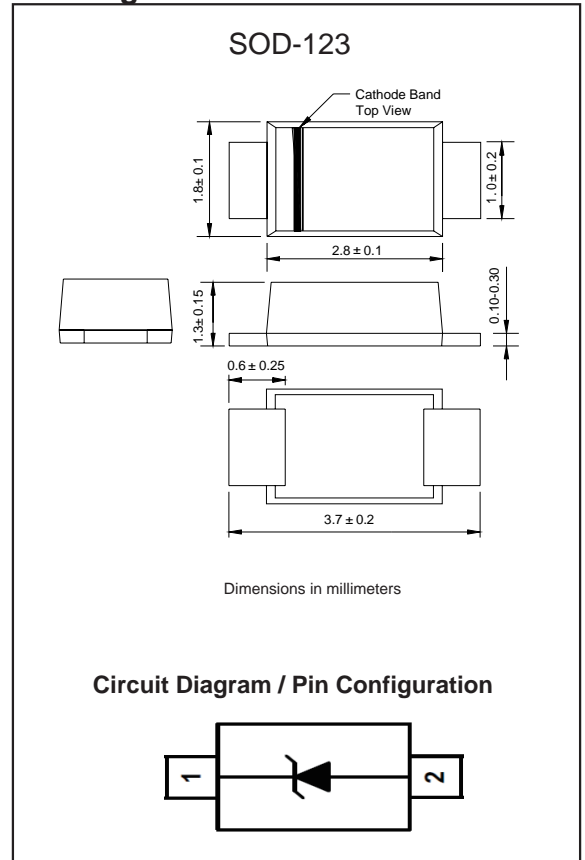
### Features

- ESD/Surge Protection for 1 line with Unidirectional
- Provide ESD protection for each line to  
**IEC 61000-4-2(ESD)±30kV ( air / contact )**  
**IEC 61000-4-4(EFT) 80A ( 5 / 50ns )**  
**IEC 61000-4-5(Lighting) 25A ( 8 / 20us )**
- Suitable for,24V and below,operating voltage applications
- Small package saves board space
- Fast turn-on and Low clamping voltage
- Solid-state silicon-avalanche and active circuit triggering technology
- Green Product

### Mechanical data

- Case: JEDEC SOD-123 molded plastic body over passivated chip
- Terminals: Plated axial leads, solderable per MIL-STD-750,Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0007 ounce, 0.02 grams

### Package outline



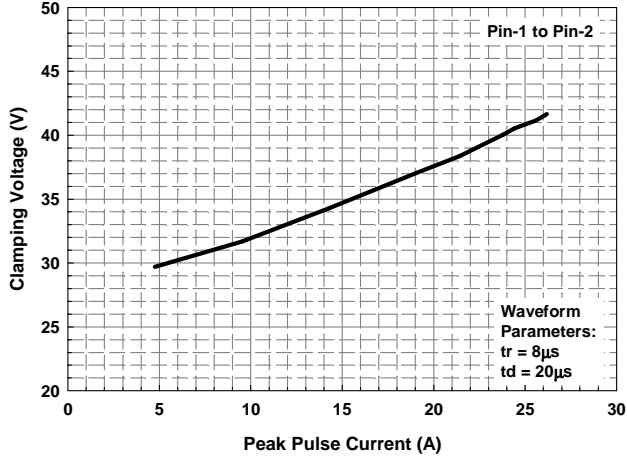
### SPECIFICATIONS

ABSOLUTE MAXIMUM RATING			
PARAMETER	SYMBOL	RATING	UNITS
Peak Pulse Current ( $t_p=8/20\mu s$ )	$I_{PP}$	25	A
Operating Supply Voltage ( pin-1 to pin-2 )	$V_{bc}$	26.4	V
Pin-1 to pin-2 ESD per IEC61000-4-2 ( Air )	$V_{ESD-1}$	± 30	kV
Pin-1 to pin-2 ESD per IEC61000-4-2 ( Contact )	$V_{ESD-2}$	± 30	kV
Lead Soldering Temperature	$T_{sol}$	260( 10 sec. )	°C
Operating Temperature	$T_{op}$	-55 to +85	°C
Storage Temperature	$T_{sto}$	-55 to +150	°C

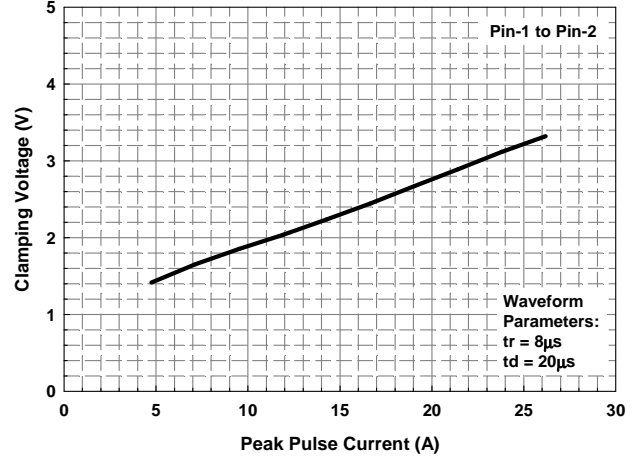
ELECTRICAL CHARACTERISTICS						
PARAMETER	SYMBOL	SYMBOL	MINI	TYP	MAX	UNITS
Reverse Stand-Off Voltage	$V_{RWM}$	Pin-1 to pin-2, $T=25\text{ }^\circ\text{C}$ .			24	V
Reverse Leakage Current	$V_{Leak}$	$V_{RWM}=24\text{V}$ , $T=25\text{ }^\circ\text{C}$ , pin-1 to pin-2.			1	$\mu\text{A}$
Reverse Breakdown Voltage	$V_{BV}$	$I_{BV}=1\text{mA}$ , $T=25\text{ }^\circ\text{C}$ , pin-1 to pin-2.	26.7		29.5	V
Forward Voltage	$V_F$	$I_F=15\text{mA}$ , $T=25\text{ }^\circ\text{C}$ , pin-2 to pin-1.	0.6		1.2	V
Surge Clamping Voltage	$V_{CL-surge}$	$I_{PP}=5\text{A}$ , $t_p=8/20\mu s$ , $T=25\text{ }^\circ\text{C}$ , pin-1 to pin-2.		30		V
ESD Clamping Voltage	$V_{clamp}$	IEC61000-4-2 +6kV, $T=25\text{ }^\circ\text{C}$ , Contact mode, pin-1 to pin-2.		32		V
ESD Dynamic Turn-on Resistance	$R_{dynamic}$	IEC61000-4-2 0~+6kV, $T=25\text{ }^\circ\text{C}$ , Contact mode, pin-1 to pin-2.		0.14		$\Omega$
Channel Input Capacitance	$C_{IN}$	$V_R=0\text{V}$ , $f=1\text{MHZ}$ , $T=25\text{ }^\circ\text{C}$ , pin-1 to pin-2.		450	540	pF

## Rating and characteristic curves

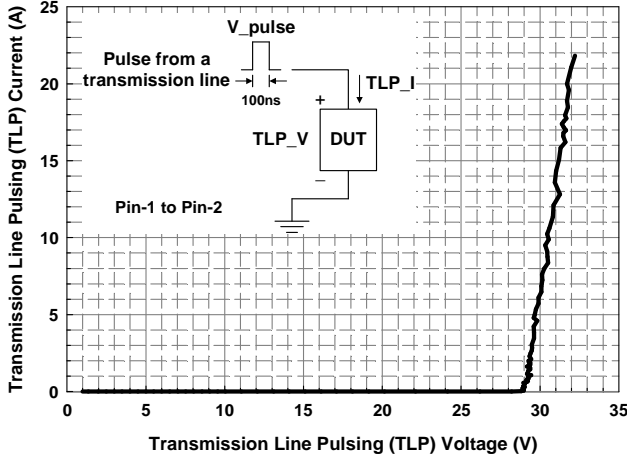
Reverse Clamping Voltage vs. Peak Pulse Current



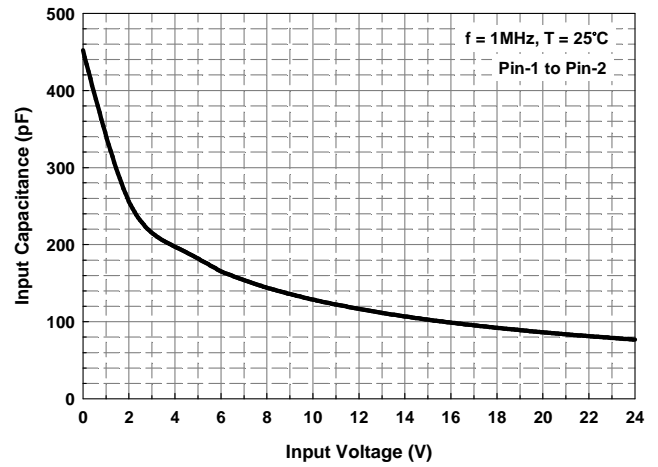
Forward Clamping Voltage vs. Peak Pulse Current



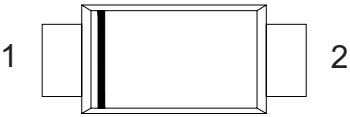

Transmission Line Pulsing (TLP) Measurement



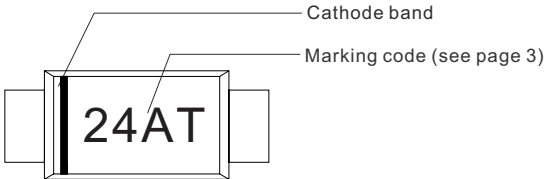
Typical Variation of  $C_{IN}$  vs.  $V_{IN}$



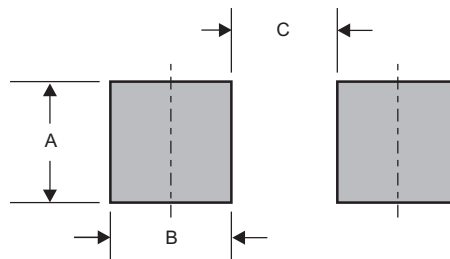
### Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

### Marking

Type number	Example
SMF24AT	

### Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123	0.044 (1.10)	0.040 (1.00)	0.079 (2.00)

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