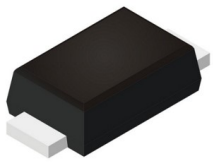
1-Line, Bi-directional, Transient Voltage Suppressors



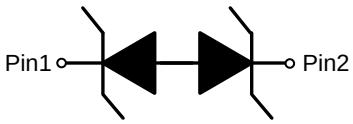
SOD-123FL

Descriptions

The SODA12F501TA is a transient voltage suppressor designed to protect power interfaces. It is suitable to replace multiple discrete components in portable electronics.

The SOD12F501TA is specifically designed to protect power lines.

The SODA12F501TA is available in SOD-123FL package. Standard products are Pb -free and Halogen -free.



Circuit diagram

Features

- Stand-off voltage: 12.0V Max
- Transient protection for each line according to IEC61000-4-2 (ESD): ±30KV Air, ±30KV contact
- IEC61000-4-5 (Surge): 200A (8/20μs)
- Solid-state silicon technology

Order information

Device	Marking	Package	Shipping
SODA12F501TA		SOD-123FL	3000/Tape&Reel

Applications

- Power supply protection
- Power management

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse power (tp = 8/20μs) Max	P_{pk}	6000	W
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	
Operating temperature	T_{OP}	-40~125	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C

Electrical characteristics (TA=25 °C ,unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				12.0	V
Reverse leakage current	I_R	V_{RWM} = 12.0V			3.0	μA
Reveres breakdown voltage	V_{BR}	I_T=1mA	13.0		17.0	V
Clamping voltage	V_C	Ipp=100A tp=8/20us		25.0		V
		Ipp=200A tp=8/20us		32.0		V
Junction capacitance	C_J	V_R = 0V, f = 1MHz		500		pF

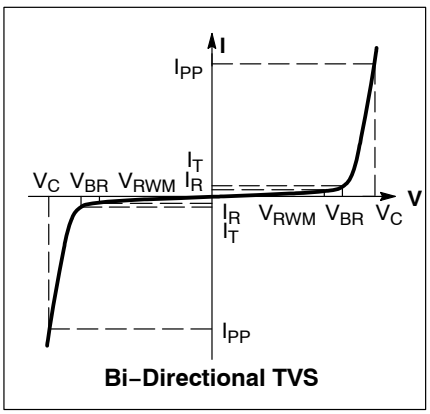
Electrical performance curve

V_C: Maximum clamping voltage

V_{br}: Reverse breakdown voltage

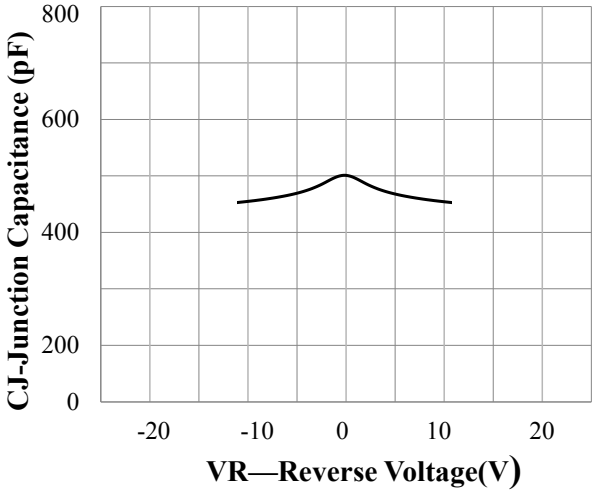
V_{RWM}: Working voltage

I_{PP}: Maximum peak current

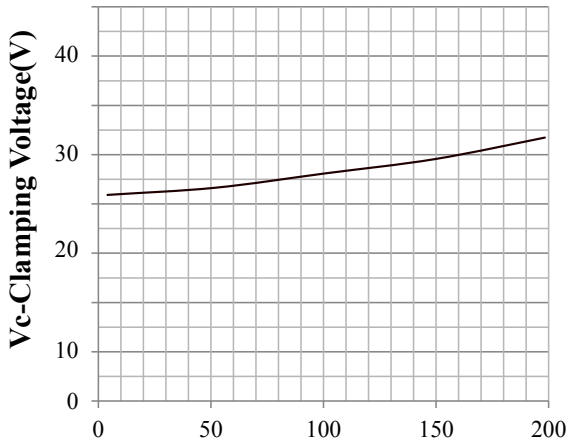


Bi-Directional TVS

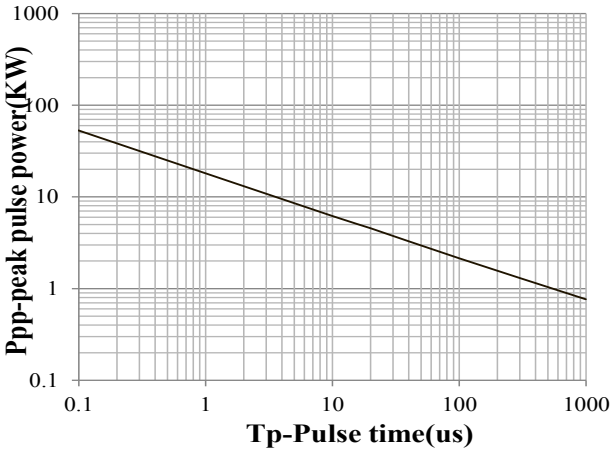
Typical characteristics (T_A=25°C, unless otherwise noted)



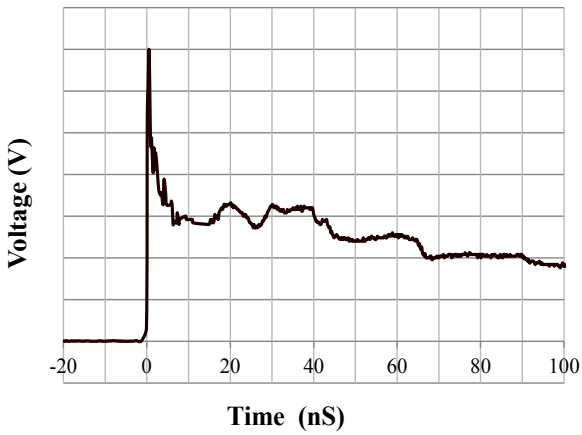
Junction Capacitance vs. Reverse Voltage



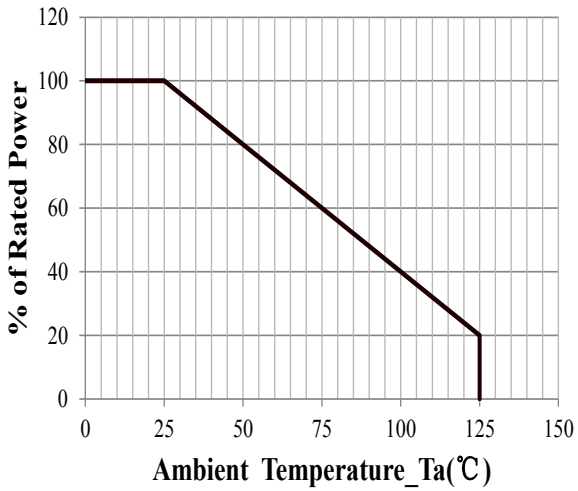
Clamping Voltage vs. Peak Pulse Current



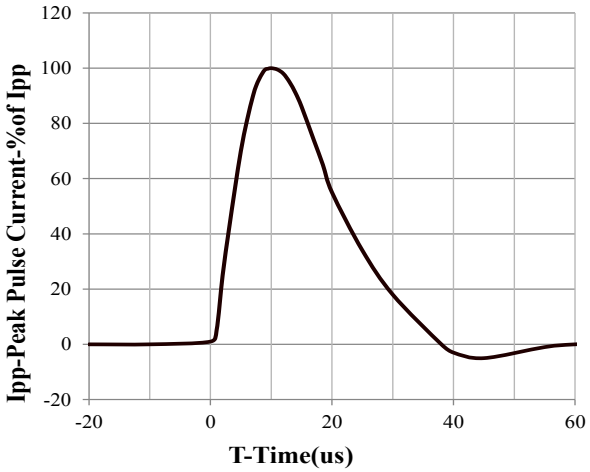
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform



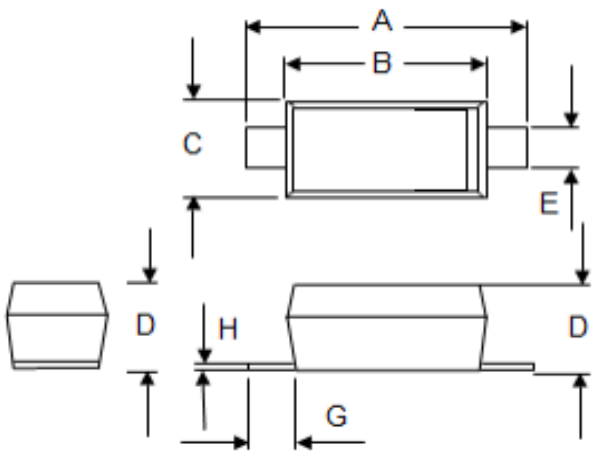
Power Derating Curve



8 X 20us Pulse Waveform

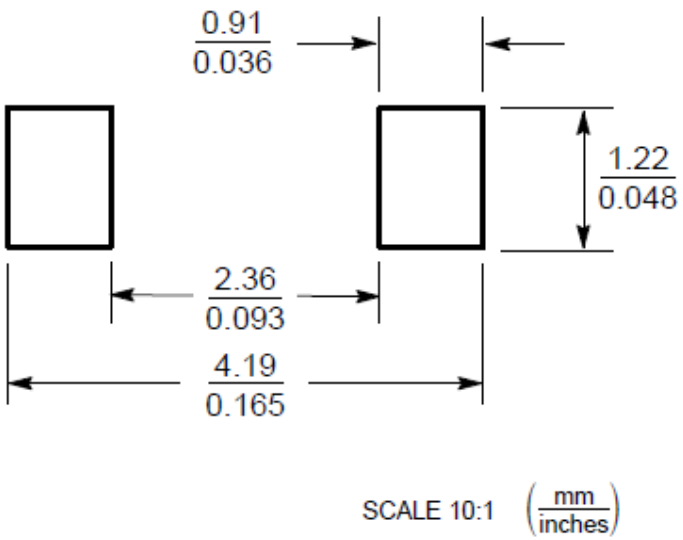
Package outline dimensions

SOD-123FL



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	3.4	3.7	3.95	0.142	0.148	0.155
B	2.5	2.7	2.90	0.098	0.106	0.114
C	1.4	1.7	1.95	0.055	0.066	0.077
D	1.0	1.2	1.40	0.039	0.047	0.055
E	0.5	0.80	1.10	0.020	0.031	0.043
G	0.25	—	—	0.010	—	—
H	—	—	0.20	—	—	0.008

Suggested Land Pattern



SCALE 10:1 $\left(\frac{mm}{inches}\right)$