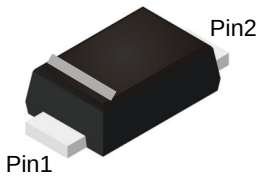
1-Line, Uni-directional, Transient Voltage Suppressor

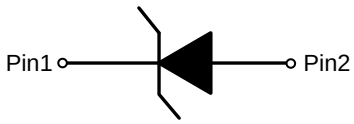
Descriptions

The ESD5F102TR is a transient voltage suppressor designed to protect power interfaces. It is suitable to replace multiple discrete components in portable electronics.

The ESD5F102TR is specifically designed to protect power lines. The is available in SOD-123FL package. Standard products are Pb-free and Halogen-free.



SOD-123FL



Circuit diagram

Features

- Stand-off voltage: 5.0V 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
SODA5F102TR	AE	SOD-123FL	3000/Tape&Reel

Applications

- Power supply protection
- Power management

Absolute maximum ratings

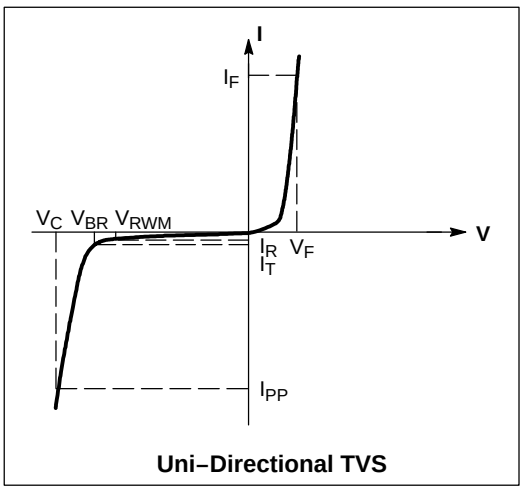
Parameter	Symbol	Rating	Unit
Peak pulse power (tp = 8/20μs) Max	P_{pk}	4000	W
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	
Operating temperature	T_{OP}	-40~125	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM} pin1~pin2				5.0	V
Reverse leakage current	I_R pin1~pin2	V_{RWM} =5.0V			200.0	μA
Reveres breakdown voltage	V_{BR} pin1~pin2	I_T=10mA	6.0		7.5	V
Forward voltage	V_F pin2~pin1	I_T=10mA		0.7		V
Clamping voltage	V_C pin1~pin2	Ipp=1.0A tp=8/20us			9.0	V
		Ipp=200A tp=8/20us		17.0	20.0	V
Junction capacitance	C_J	V_R = 0V, f = 1MHz		1000		pF

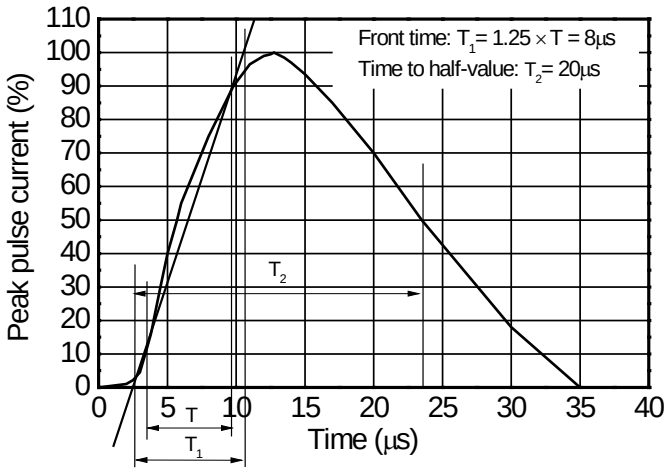
Electrical performance curve

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

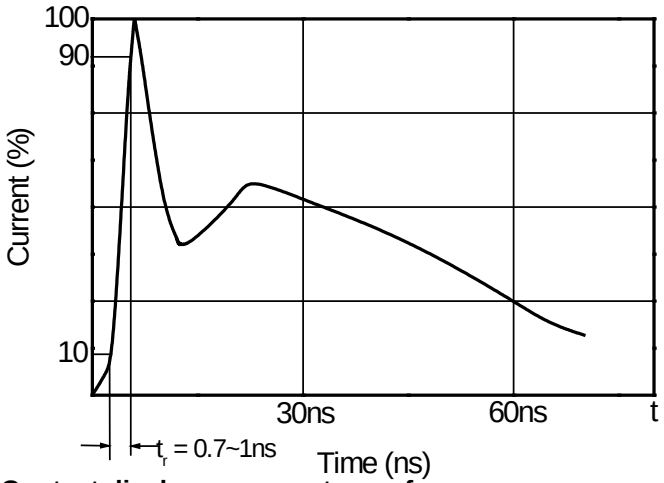


Uni–Directional TVS

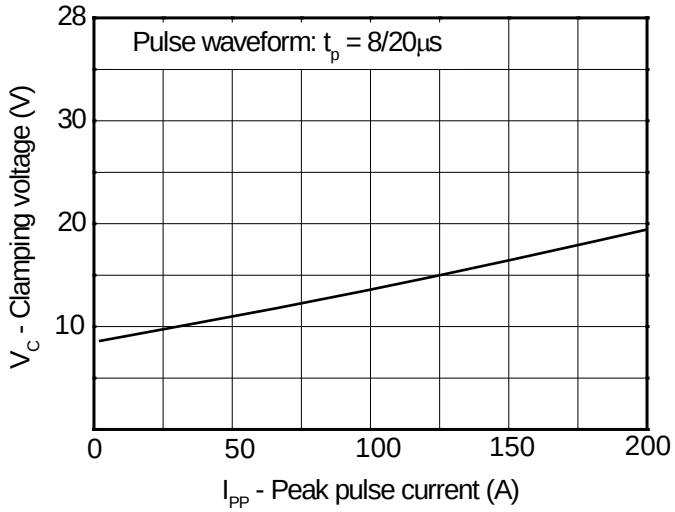
Typical characteristics (T_A=25°C, unless otherwise noted)



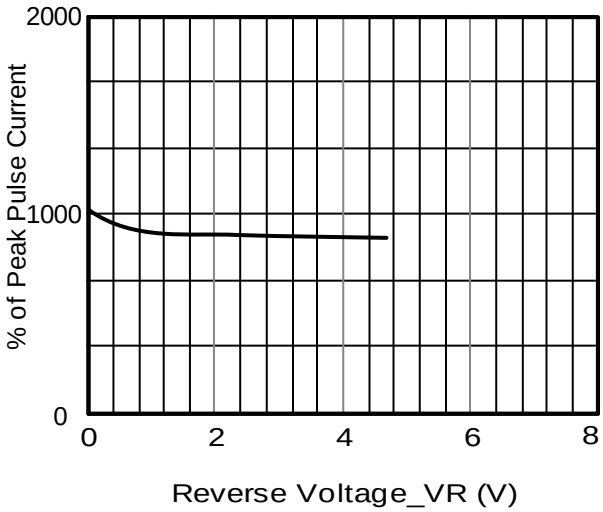
8/20μs waveform per IEC61000-4-5



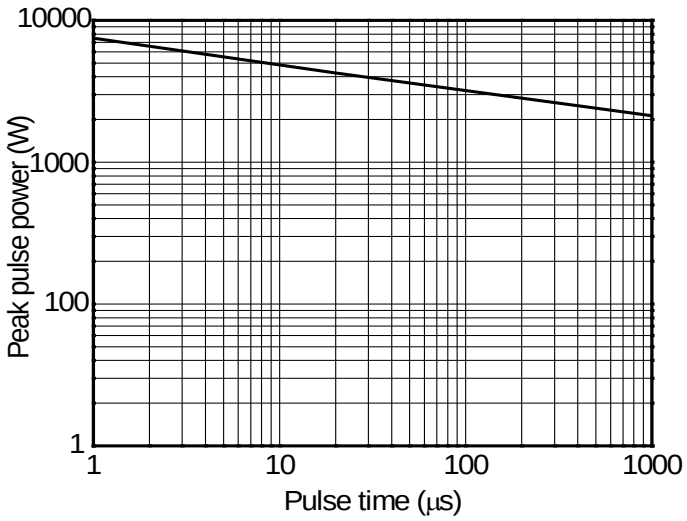
Contact discharge current waveform per IEC61000-4-2



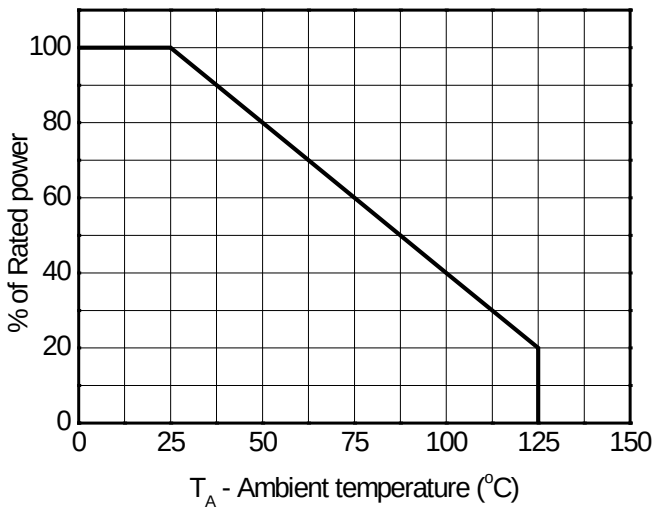
Clamping voltage vs. Peak pulse current



Capacitance vs. Reveres voltage



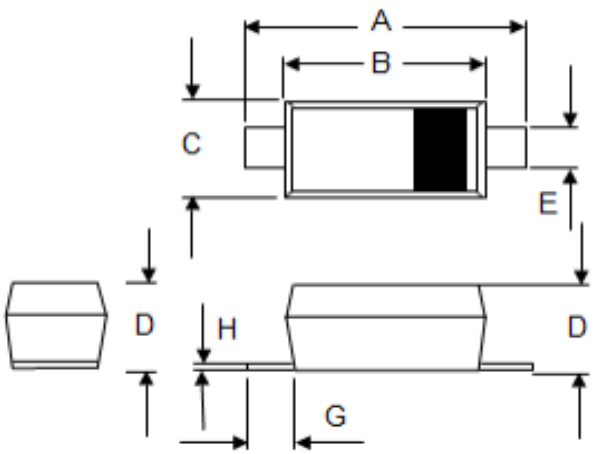
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

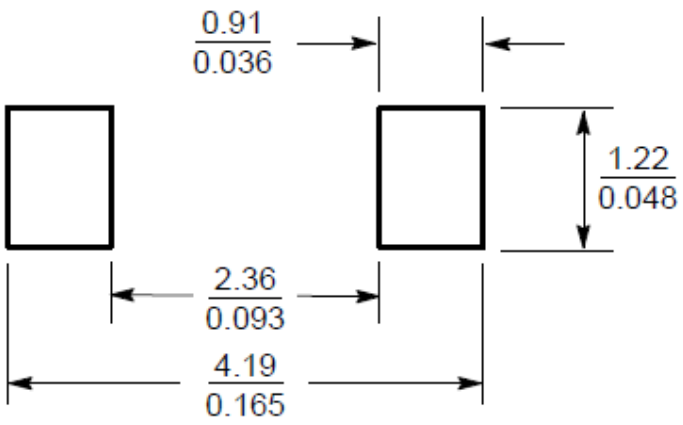
Package outline dimensions

SOD-123FL



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	3.4	3.7	4.00
B	2.5	2.7	2.90
C	1.4	1.7	1.95
D	0.8	1.0	1.10
E	0.5	0.80	1.10
G	0.25	—	—
H	—	—	0.20

Suggested Land Pattern



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