

1-Line, Bi-directional, Transient Voltage Suppressors

Descriptions

The ESD5E003TA is a bi-directional TVS (Transient Voltage Suppressor). It is specifically designed to protect sensitive electronic components that may be subjected to ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.

The ESD5E003TA may be used to provide ESD protection up to 20KV Air, 15KV contact compliance to IEC61000 -4-2, and withstand peak pulse current up to 4.0A (8/20µs) according to IEC61000-4-5.

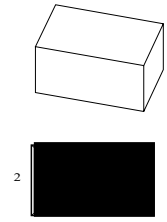
The ESD5E003TA is available in SOD-962 package. Standard products are Pb-free and Halogen-free.

Features

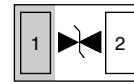
- Stand-off voltage: $\pm 5V$ Max
- Transient protection for each line according to IEC61000-4-2 (ESD): 20KV Air, 15KV contact compliance IEC61000-4-5 (surge): 4.0A (8/20µs)
- Solid-state silicon technology
- Low leakage current

Applications

- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals



SOD-962



Circuit diagram

Order information

Device	Package	Marking	Shipping
ESD5E003TA	SOD-962	Q	15000/Tape&Reel

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	100	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	4.0	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 20	kV
ESD according to IEC61000-4-2 contact discharge		± 15	
Operation junction temperature	T_J	-55~150	$^{\circ}C$
Lead temperature	T_L	260	$^{\circ}C$
Storage temperature	T_{STG}	-65~150	$^{\circ}C$

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				± 5	V
Reverse leakage current	I_R	$V_{RWM} = 5V$			100	nA
Reveres breakdown voltage	V_{BR}	$I_T = 1mA$	6.5		9.0	V
Clamping voltage	V_C	$I_{pp} = 1A$ $t_p = 8/20\mu s$			15	V
		$I_{pp} = 4.0A$ $t_p = 8/20\mu s$			25	V
Junction capacitance	C_J	$V_R = 0V, f = 1MHz$		0.3	0.45	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}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F

