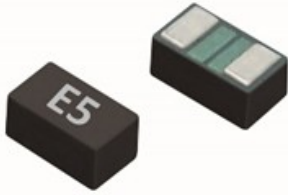


Surface Mount ESD Suppressors

ESD Protection Diode, TS04021C05V100



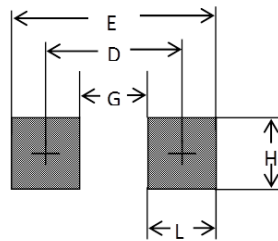
Application:

- Cellular handsets and accessories
- Portable electronics
- Computers and peripherals
- Communication systems
- Audio and video equipment

Features:

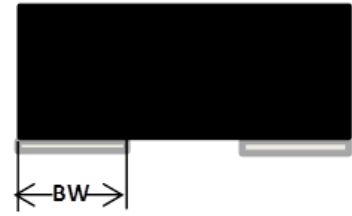
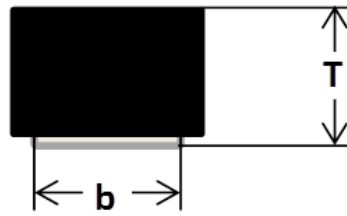
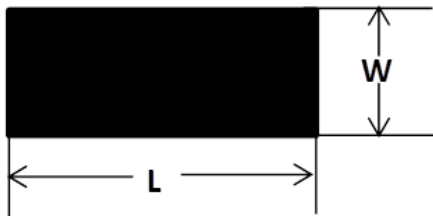
- Bi-directional ESD protection of one line.
- IEC 61000-4-2, level 4 (ESD) protection
- Ultra small SMD special packages (0402)
- Pb-Free, Halogen free and RoHS compliant
- Operating junction temperature $-55^{\circ}\text{C}\sim+125^{\circ}\text{C}$
- Storage temperature range $-55^{\circ}\text{C}\sim+150^{\circ}\text{C}$

Recommended Foot Print Dimensions:



Unit	Inch	mm
L	0.020	0.50
G	0.010	0.25
H	0.028	0.70
D	0.030	0.75
E	0.049	1.25

Shape and Dimensions:



Package	Size Inch/(mm)				
	L	W	T	BW	b
0402 (DFN1006)	0.039±0.002 (1.00±0.05)	0.024±0.002 (0.60±0.05)	0.020±0.002 (0.50±0.05)	0.014 (0.35)	0.020 (0.50)

Packaging Information:

Package	Tape & Reel Quantity (piece)	Marking
0402 (DFN1006)	10,000	E5

Storage Conditions:

Storage Time: 12 months max
 Storage Temperature : 5°C to 30°C
 Relative Humidity: < 60% RH

Surface Mount ESD Suppressors

ESD Protection Diode, TS04021C05V100

Electrical Characteristics (@25°C):

Characteristic	Condition	Value		
		Min.	Typical	Max.
ESD per IEC61000-4-2 Direct Discharge			±8 kV	
ESD per IEC61000-4-2 Air Discharge			±16 kV	
Peak Pulse Power (P_{PK})	$t_P = 8/20\mu s$		75 W	
Maximum Peak Pulse Current (I_{PP})	$t_P = 8/20\mu s$		5 A	
Reverse Stand-Off Voltage (V_{RWM})				5 V
Reverse Breakdown Voltage (V_{BV})	$I_{BV} = 1mA$	6 V		
Clamping Voltage (V_{CL})	$I_{PP} = 1A, t_P = 8/20\mu s$			9 V
	$I_{PP} = 5A, t_P = 8/20\mu s$			15 V
Junction Capacitance (C_J)	$V_{RWM} = 0V, f = 1MHz$		10 pF	
Reverse Leakage Current (I_{RM})	$V_{RWM} = 5V$			2 μA

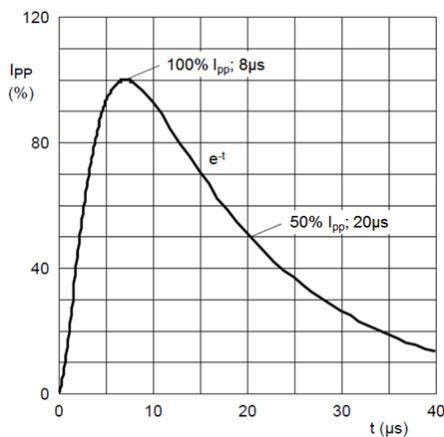


Fig. 1
8/20 μs pulse waveform
according to IEC 61000-4-5

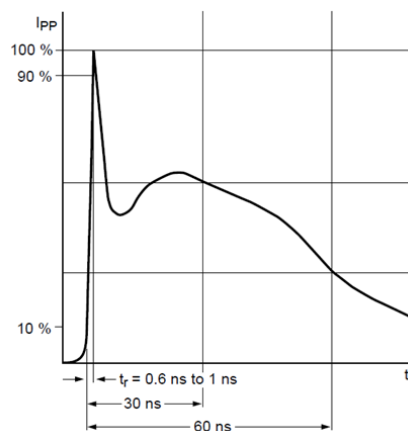


Fig. 2
ESD pulse waveform
according to IEC 61000-4-2

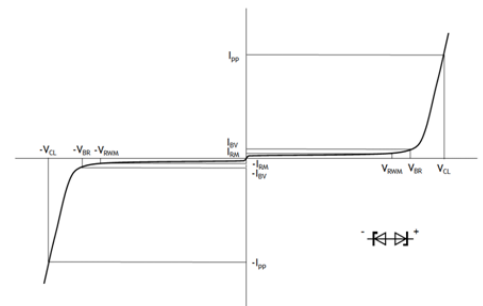


Fig. 3
V-I characteristics for bidirectional ESD
protection diode

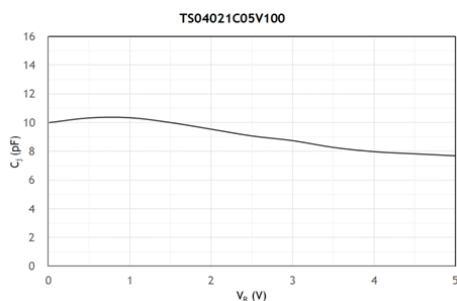


Fig. 4
Junction capacitance as a function of
reverse voltage; typical value

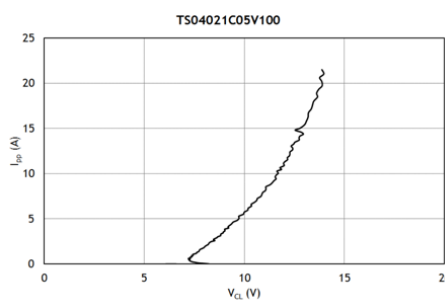


Fig. 5
Dynamic resistance with positive
clamping voltage $t_P = 10ns$;
Transmission Line Pulse (TLP)

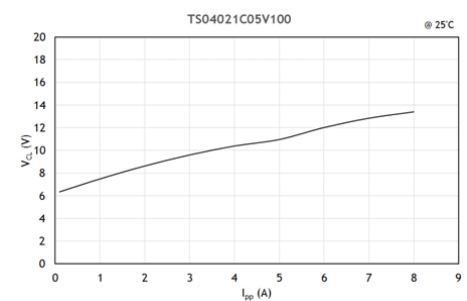


Fig. 6
Clamping voltage (V_{CL}) as a function of
peak current (I_{PP}); $t_P = 8/20\mu s$

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