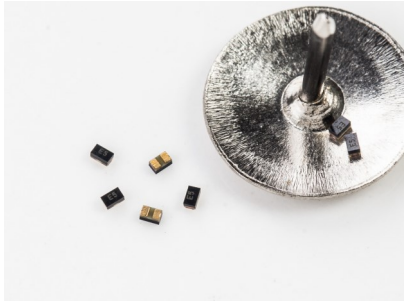


Surface Mount TVS Diodes

ESD Protection Diode, TS04021C05V100



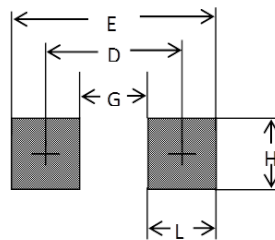
Applications:

- 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

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})	$t_p = 8/20\mu\text{s}$		75 W	
Maximum Peak Pulse Current (I_{PP})	$t_p = 8/20\mu\text{s}$		5 A	
Reverse Stand-Off Voltage (V_{RWM})				5 V
Reverse Breakdown Voltage (V_{BV})	$I_{BV} = 1\text{mA}$	6 V		
Clamping Voltage (V_{CL})	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			9 V
	$I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$			15 V
Junction Capacitance (C_j)	$V_{RWM} = 0\text{V}, f = 1\text{MHz}$		10 pF	
Reverse Leakage Current (I_{RM})	$V_{RWM} = 5\text{V}$			2 μA

Surface Mount TVS Diodes

ESD Protection Diode, TS04021C05V100

Electrical Characteristics (@25°C):

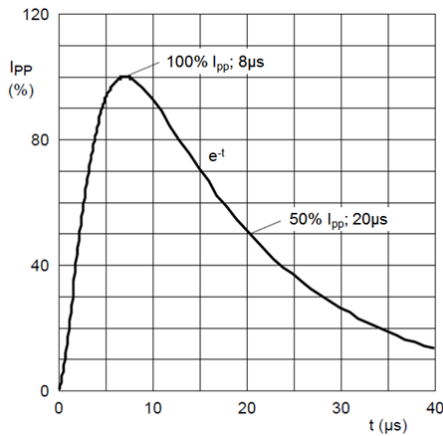


Fig. 1
8/20µs pulse waveform
according to IEC 61000-4-5

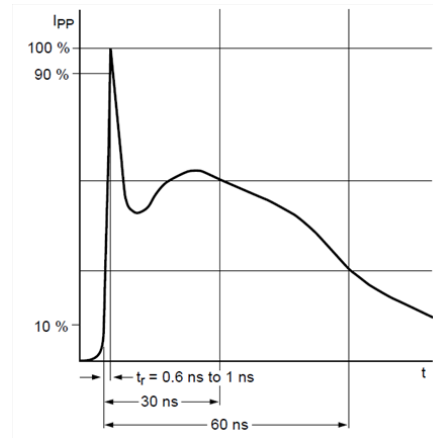


Fig. 2
ESD pulse waveform
according to IEC 61000-4-2

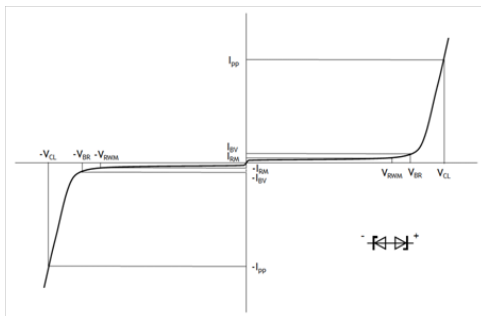


Fig. 3
V-I characteristics for bidirectional ESD
protection diode

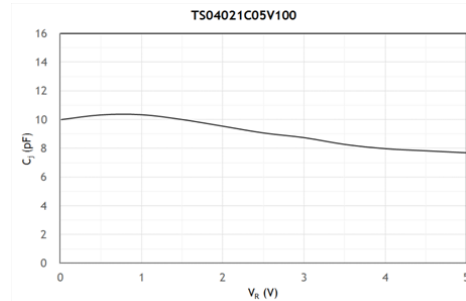


Fig. 4
Junction capacitance as a function of re-
verse voltage; typical value

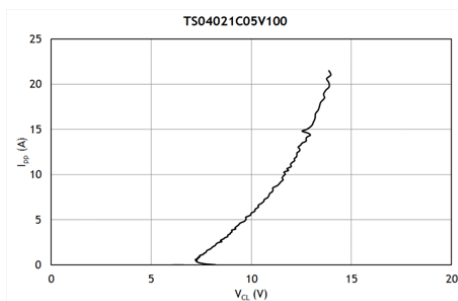


Fig. 5
Dynamic resistance with positive clamping
voltage $t_p = 10\text{ns}$; Transmission Line Pulse
(TLP)

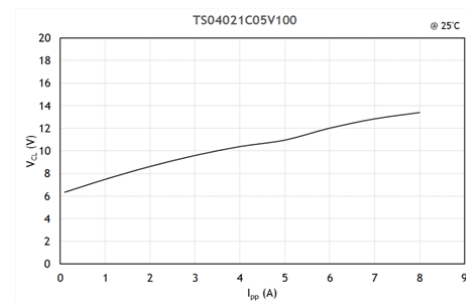
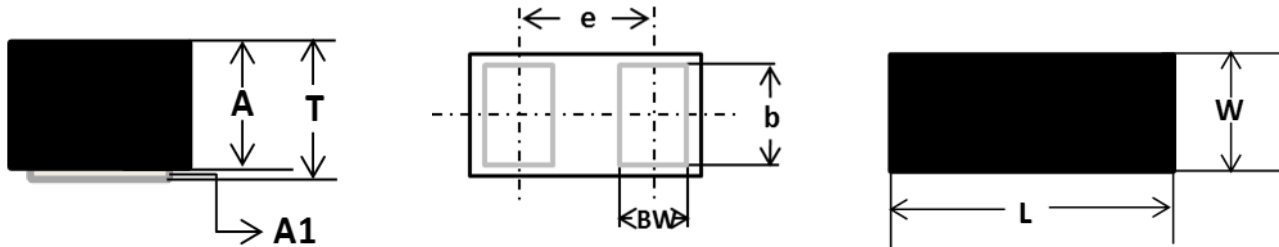


Fig. 6
Clamping voltage (V_{cl}) as a function of peak
current (I_{pp}); $t_p = 8/20\mu\text{s}$

Surface Mount TVS Diodes

Shape and Dimensions:



Package	Size inch/(mm)							
	L	W	T	BW	b	e	A	A1
0201 (DN0603)	0.024±0.002 (0.60±0.05)	0.013±0.002 (0.32±0.05)	0.012±0.002 (0.30±0.05)	0.006±0.002 (0.15±0.05)	0.010±0.002 (0.25±0.05)	0.015 (0.38)	0.011±0.002 (0.29±0.05)	0.0004 (0.01)
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±0.002 (0.35±0.05)	0.020±0.002 (0.50±0.05)	0.026 (0.65)	0.019±0.002 (0.49±0.05)	0.0004 (0.01)

Packaging Information:

Package	Tape & Reel Quantity (piece)	Marking
0201 (DFN0603)	15,000	I
0402 (DFN1006)—TS04021C05V100	10,000	E5
0402 (DFN1006)—TS04021C05VR30	10,000	S

Storage Conditions:

Storage Time: 12 months max

Storage Temperature : 5°C to 30°C

Relative Humidity: < 60% RH

Disclaimer

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