

Description

This is working voltage 5V 1-Line, Bi-directional, ESD protection diode in a DFN0603 package

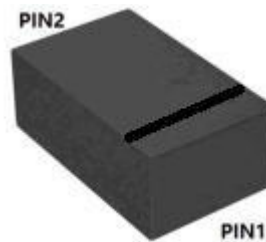
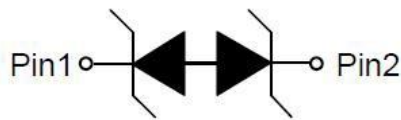
Applications

- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

Features

- Stand-off voltage: $\pm 5V$ Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30kV$ (contact)
IEC61000-4-4 (EFT): 40A (5/50ns)
IEC61000-4-5(surge): 8A (8/20 μs)
- Ultra-low capacitance: $C_J = 10pF$ typ
- Low leakage current
- Low clamping voltage: $V_{CL} = 10.0V$ typ. @ $I_{PP} = 16A$ (TLP)
- Solid-state silicon technology
- Halogen-free Product

Equivalent Circuit & Pinning

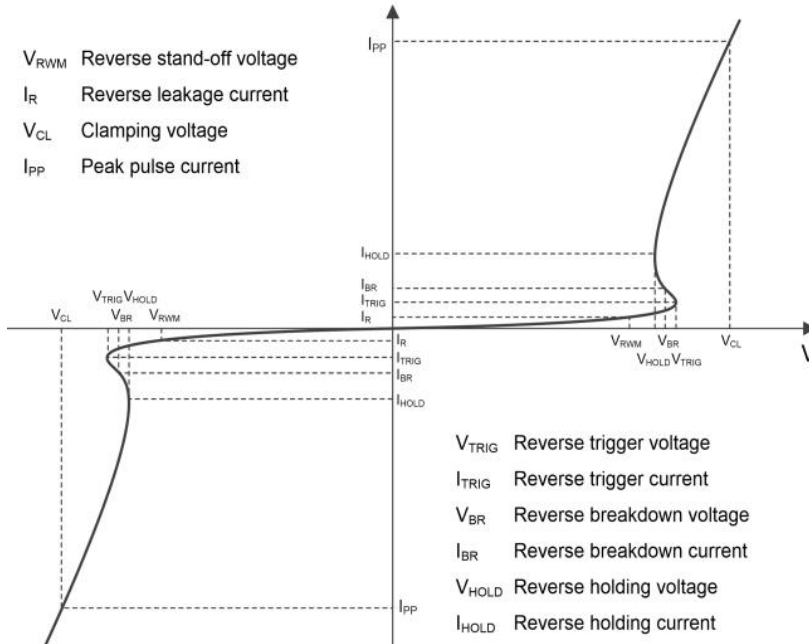


Marking

Marking : A5

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Peak Pulse Power($t_p = 8/20\mu s$)	P_{PK}	96	W
Peak Pulse Current($t_p = 8/20\mu s$)	I_{PP}	8	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	125	℃
Operating temperature	T_{OP}	-40~85	℃
Lead temperature	T_L	260	℃
Storage Temperature	T_{STG}	-55~+150	℃

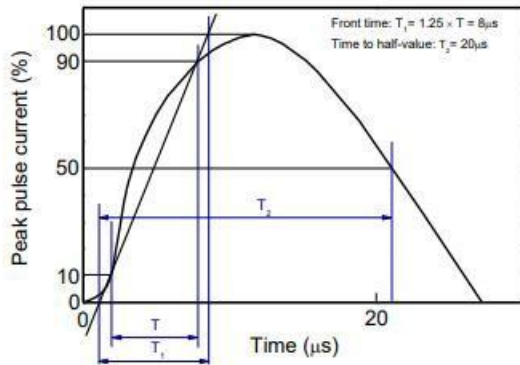
Electrical Characteristics (Ta=25°C)

Definitions of electrical characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse maximum working voltage	V_{RWM}				± 5.0	V
Reverse leakage current	I_R	$V_{RWM} = 5.0V$			100	nA
Reverse breakdown voltage	V_{BR}	$I_{BR}=1mA$	5.3	6		V
Reverse holding voltage	V_{HOLD}	$I_{HOLD}=50mA$	5.3	6		V
Clamping 1)	V_{CL}	$I_{PP}=16A \quad t_p=100ns$		10.0		V
Dynamic resistance 1)	R_{DYN}			0.2		Ω
Clamping voltage 2)	V_{CL}	$V_{ESD} = 8kV$		10.0		V
Clamping voltage 3)	V_{CL}	$I_{PP} = 1A \quad t_p = 8/20\mu s$			8	V
		$I_{PP} = 8A \quad t_p = 8/20\mu s$			12	V
Junction Capacitance	C_J	$V_R = 0V \quad f = 1MHz$		10	13	pF
	C_J	$V_R = 2.5V \quad f = 1MHz$		8	11	pF

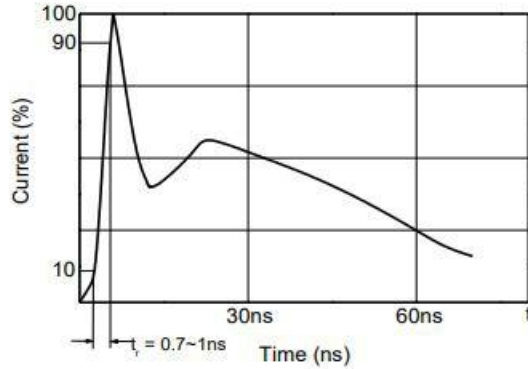
Notes:

- 1) TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
- 2) Contact discharge mode, according to IEC61000-4-2.
- 3) Non-repetitive current pulse, according to IEC61000-4-5

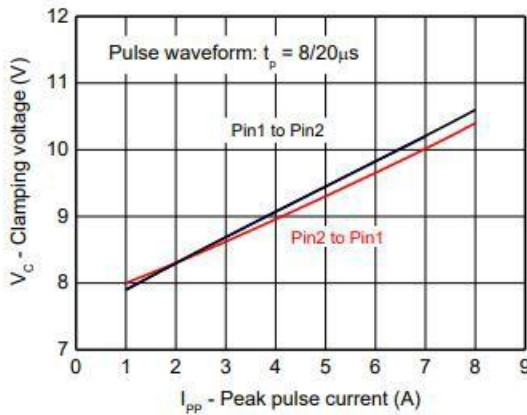
Electrical Characteristic Curve(Ta=25°C)



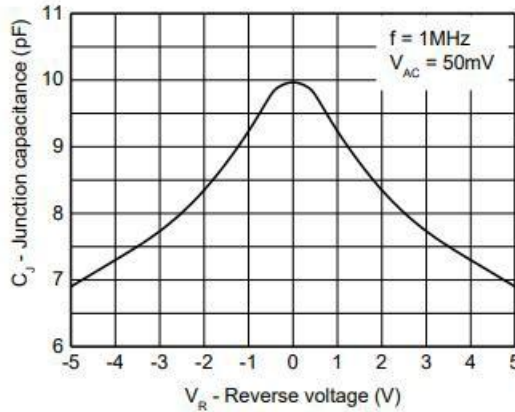
8/20μs waveform per IEC61000-4-5



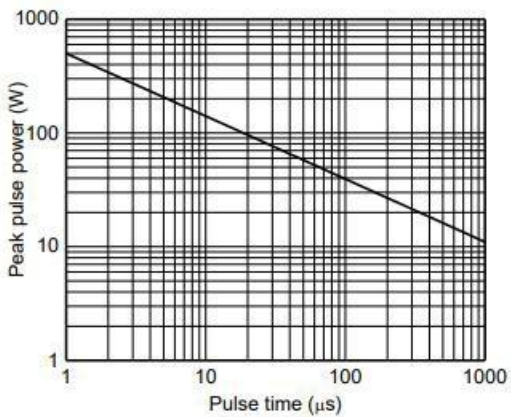
Contact discharge current waveform per IEC61000-4-2



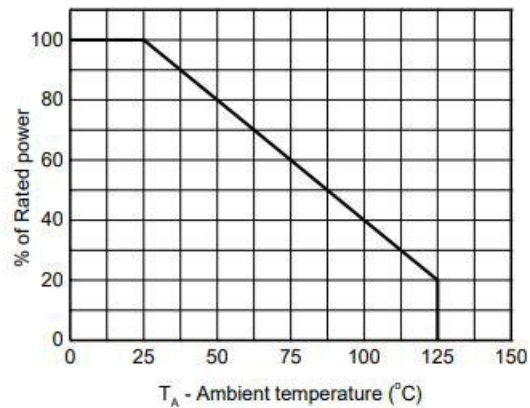
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

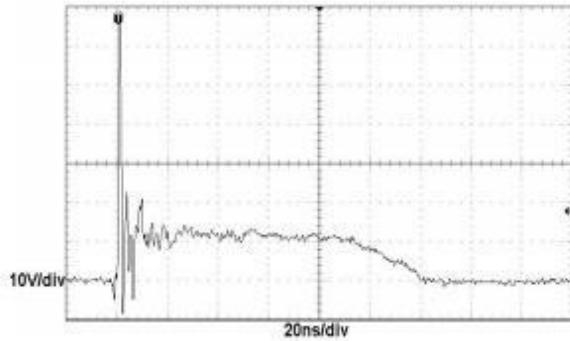


Non-repetitive peak pulse power vs. Pulse time

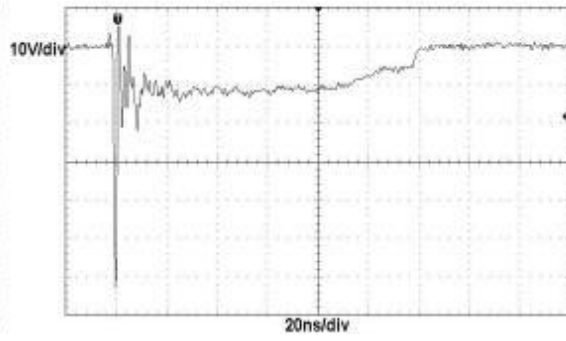


Power derating vs. Ambient temperature

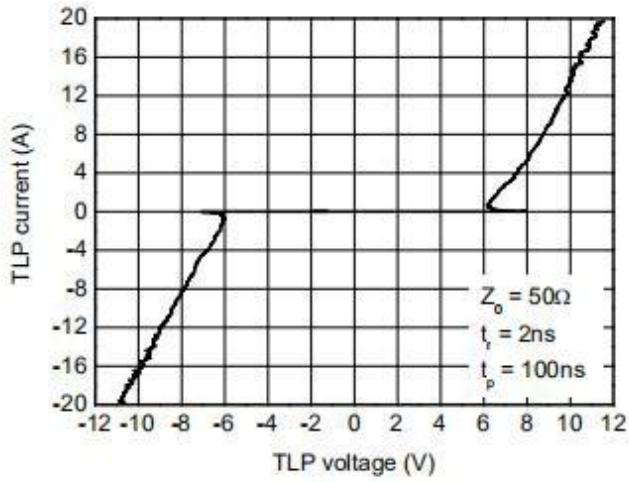
Electrical Characteristic Curve(Ta=25°C)



ESD clamping
(+8kV contact discharge per IEC61000-4-2)

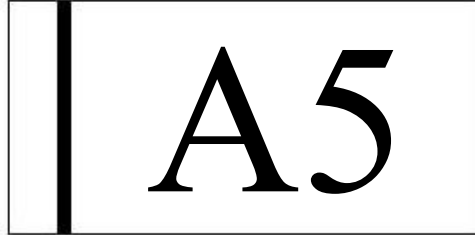


ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

Marking Information



Note :

A5 : Product Type.

* : Lot No. Code,code change with Lot No.

Packaging SPEC

REEL

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN0603-2L	10,000	10	100,000	6	600,000	7" ×8	180×120×180	390×385×205

Package Dimensions

DFN0603-2L

Unit:mm

