/ Descriptions

DFN0603 ESD

DFN0603 Plastic Package 1-Line,Bi-directional , ESD Protection Diode.

/ Features

Stand-off voltage: ±5V Max.

Transient protection for each line according to:

IEC61000-4-2(ESD): ±30kV (contact).

IEC61000-4-4 (EFT): 40A (5/50ns).

IEC61000-4-5(surge): 8A (8/20μs).

Ultra-low capacitance: CJ = 10pF typ.

Low leakage current.

Low clamping voltage: VCL =10.0V typ. @ IPP = 16A (TLP).

Solid-state silicon technology.

HF Product.

/ Applications

Cellular handsets.

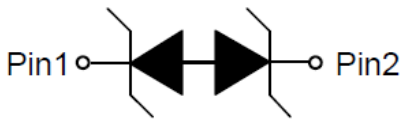
Tablets.

Laptops.

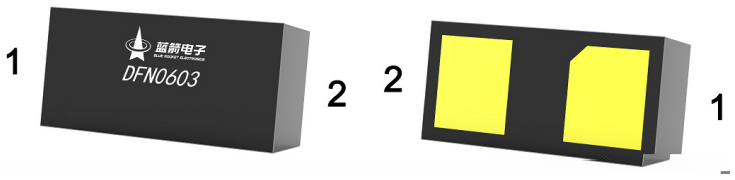
Other portable devices.

Network communication devices.

/ Equivalent Circuit



/ Pinning



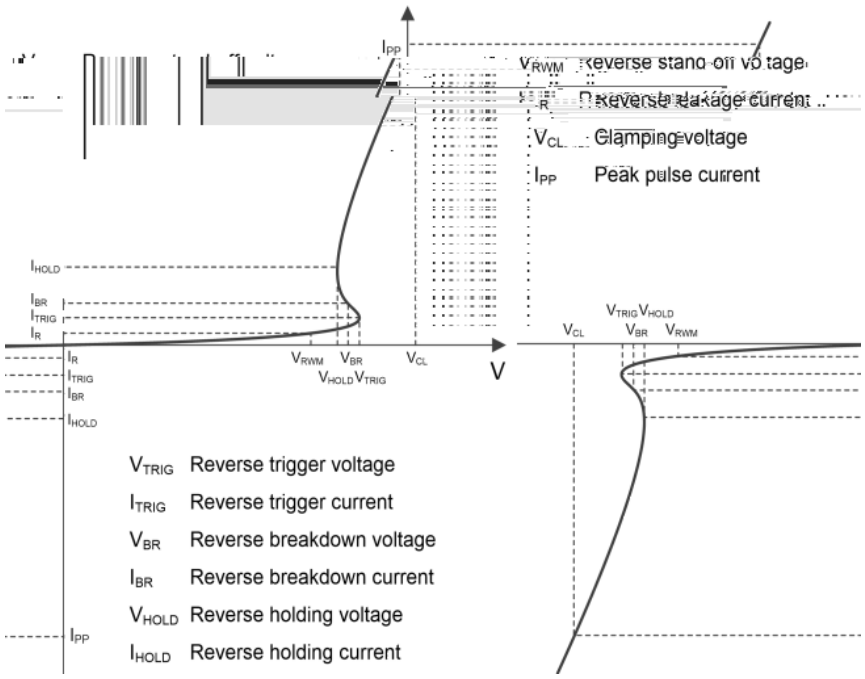
/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Pulse Power(t_p = 8/20μs)	P_{PK}	35	W
Peak Pulse Current(t_p = 8/20μs)	IPP	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)



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 voltage 1)	V_{CL}	I_{PP}=16A t_p=100ns		10.0		V
Dynamic resistance 1)	R_{DYN}			0.2		Ω
Clamping voltage 2)	VCL	VESD= 8kV		10.0		V
Clamping voltage 3)	V_{CL}	I_{PP} = 1A t_p = 8/20μs			8	V
		I_{PP} = 8A t_p = 8/20μs			12	V
Junction Capacitance	C_J	V_R = 0V f = 1MHz		10	13	pF
	C_J	V_R = 2.5V f = 1MHz		8	11	pF

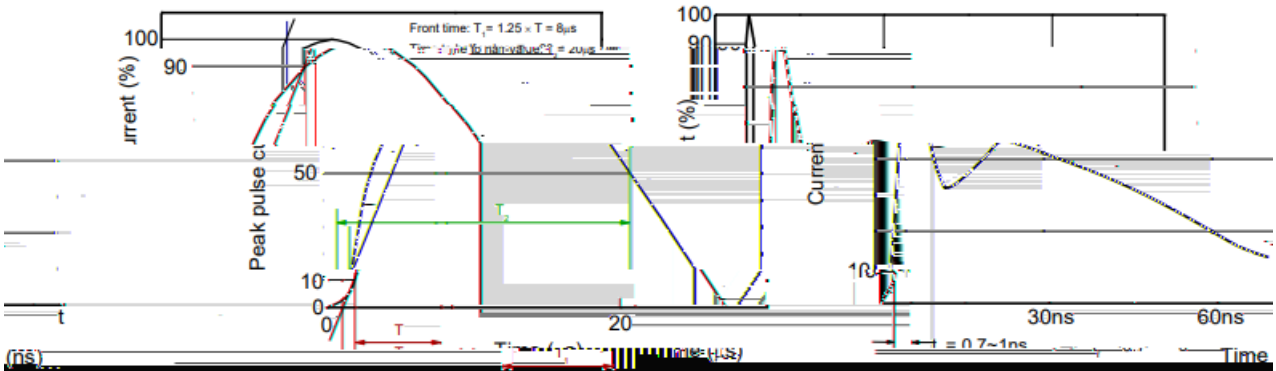
Notes:

1) TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.

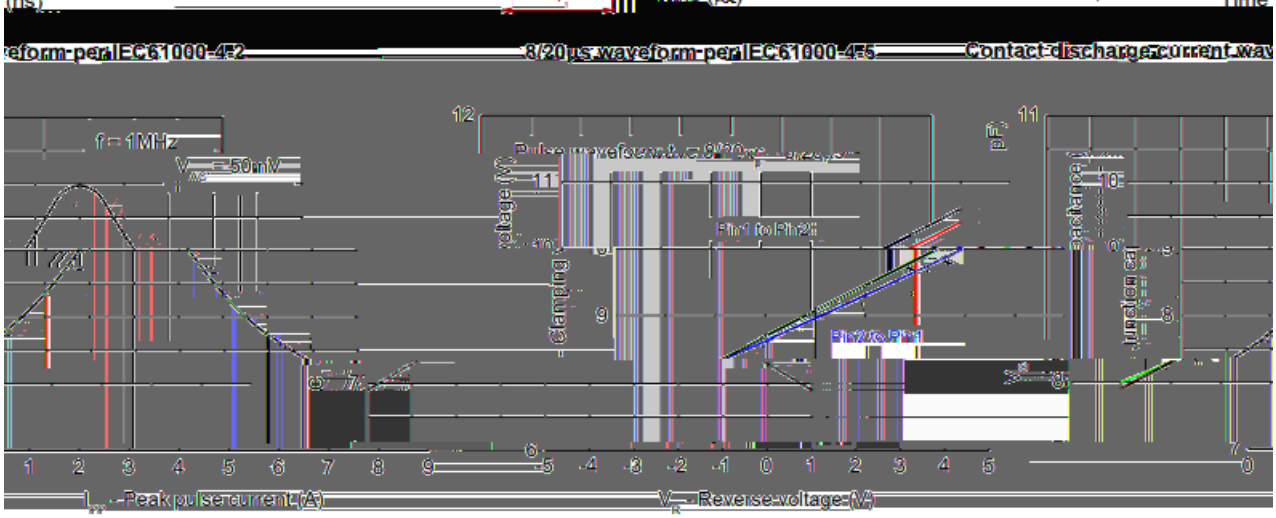
2) Contact discharge mode, according to IEC61000-4-2.

3) Non-repetitive current pulse, according to IEC61000-4-5.

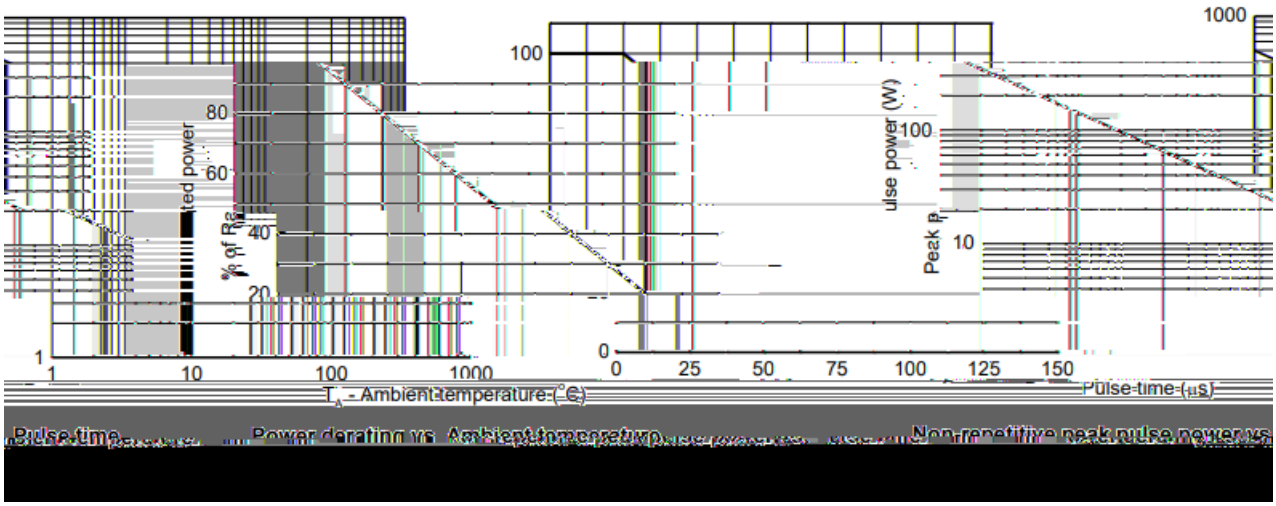
/ Electrical Characteristic Curve(Ta=25)



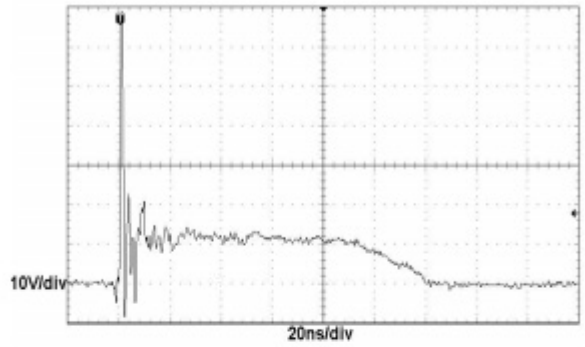
eform-per-IEC61000-4-2 8/20μs waveform-per-IEC61000-4-5 Contact-discharge-current-wav



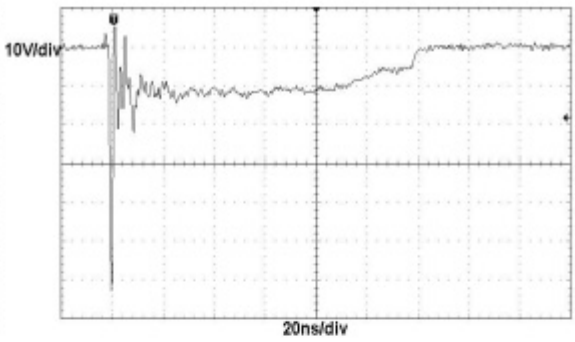
Clamping voltage vs. Peak pulse current **Capacitance vs. Reverse voltage** **C**



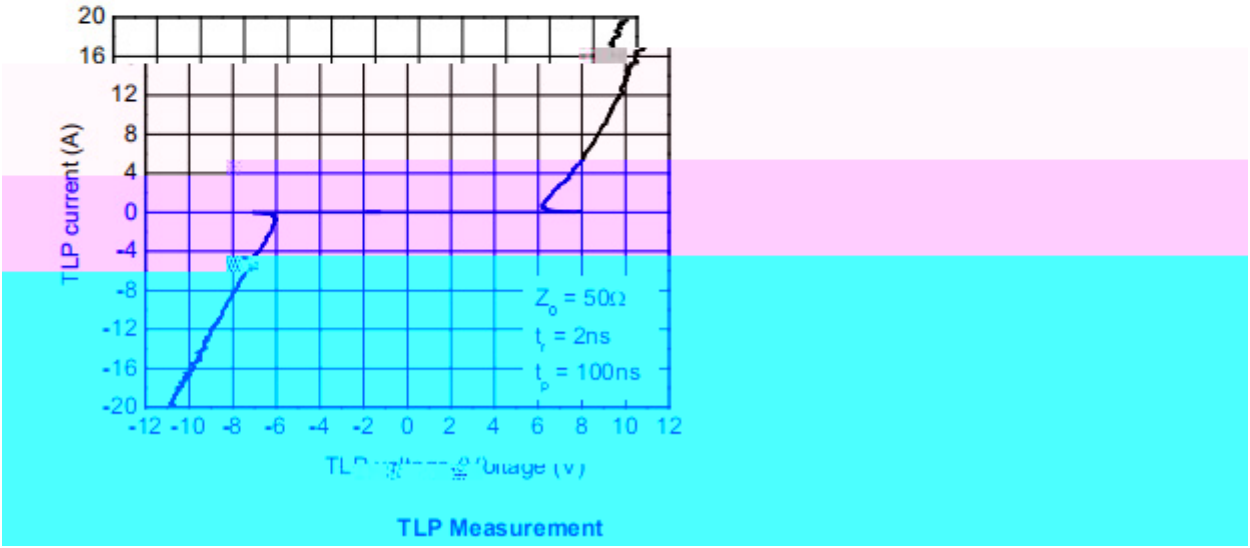
/ Electrical Characteristic Curve(Ta=25)



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



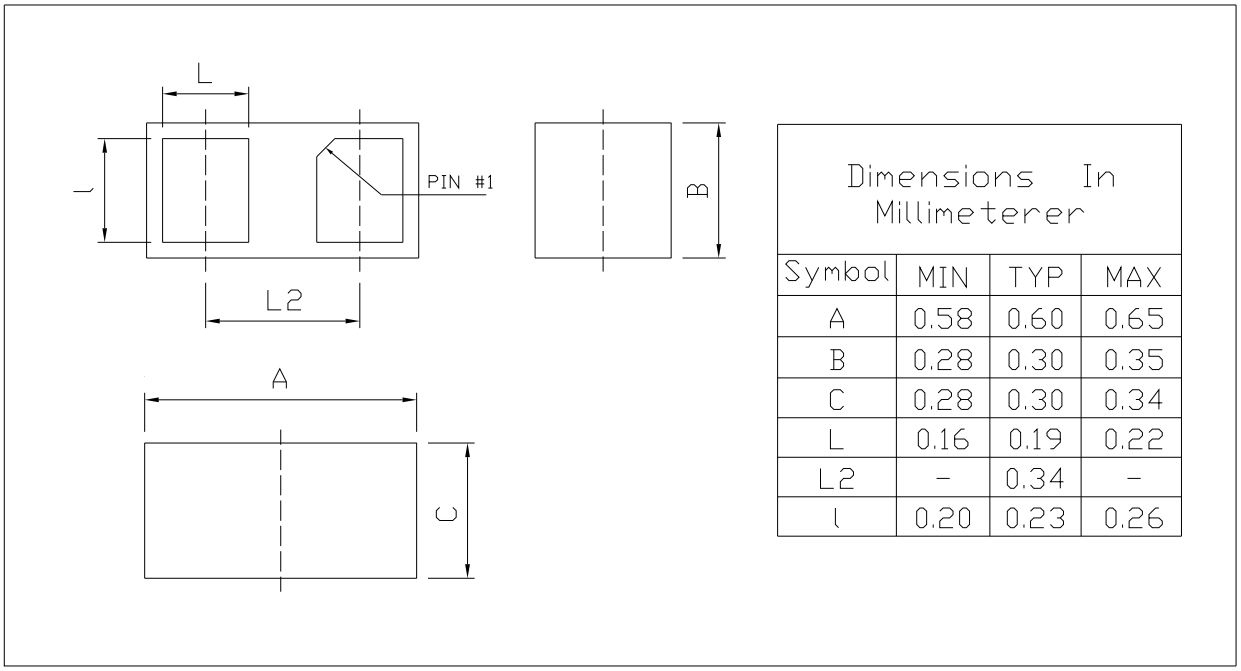
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

/ Package Dimensions

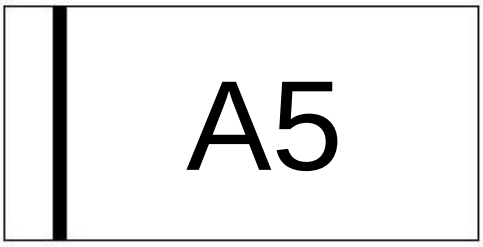
DFN0603 Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	0.58	0.60	0.65
B	0.28	0.30	0.35
C	0.28	0.30	0.34
L	0.16	0.19	0.22
L2	-	0.34	-
l	0.20	0.23	0.26

Rev.02 202102

/ Marking Instructions



A5

Note

A5	Product Type Code

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)

		Note:
1	150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245±5 5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5	10±1 sec.	Temp.:260±5	Time:10±1 sec

/ Packaging SPEC.

/ REEL

p.B w4 Hr