/ Descriptions

DFN0603 ESD

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

/ Features

Stand-off voltage: ±12V 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): 6A (8/20μs);

Ultra-low capacitance: CJ = 5pF typ;

Low leakage current;

Low clamping voltage: VCL =21.0V typ. @ IPP = 16A (TLP);

Solid-state silicon technology;

HF Product.

/ Applications

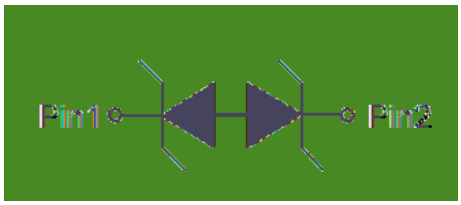
Computers and peripherals;

Audio and video equipment;

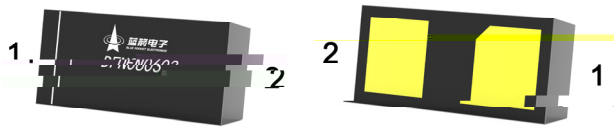
Communication systems;

Portable electronics.

/ Equivalent Circuit



/ Pinning



/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Pulse Power(t_p = 8/20μs)	P_{PK}	120	W
Peak Pulse Current(t_p = 8/20μs)	I_{PP}	6	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}				12	V
Reverse leakage current	I_R	V_{RWM} = 12V			100	nA
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	13	14		V
Reverse holding voltage	V_{HOLD}	I_{HOLD}=50mA	13	14		V
Clamping voltage 1)	V_{CL}	I_{PP}=16A t_p=100ns		21.0		V
Dynamic resistance 1)	R_{DYN}			0.35		Ω
Clamping voltage 2)	V_{CL}	V_{ESD}= 8kV		21.0		V
Clamping voltage 3)	V_{CL}	I_{PP} = 1A t_p = 8/20μs		14	16	V
		I_{PP} = 6A t_p = 8/20μs		18.5	20	V
Junction Capacitance	C_J	V_R = 0V f = 1MHz		5	7	pF
	C_J	V_R = 2.5V f = 1MHz		4	6	pF

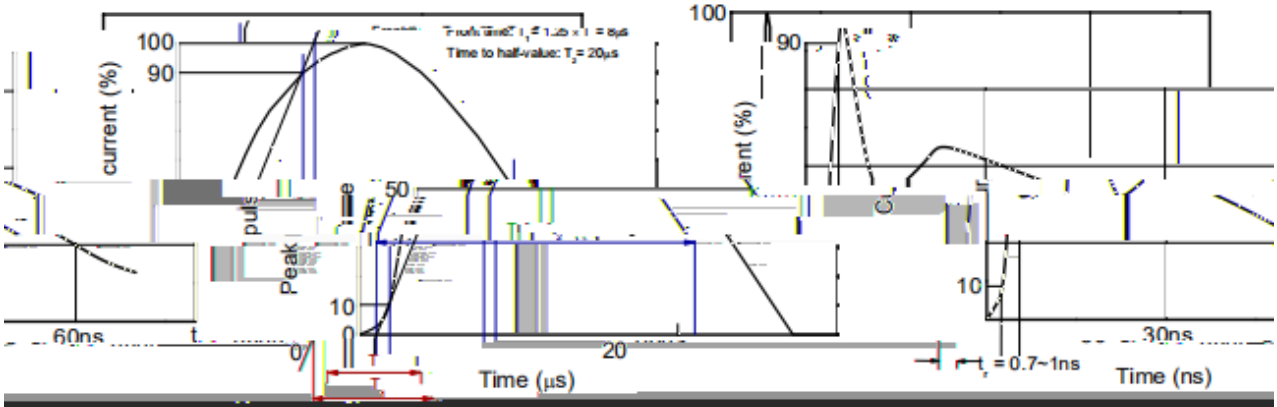
Notes:

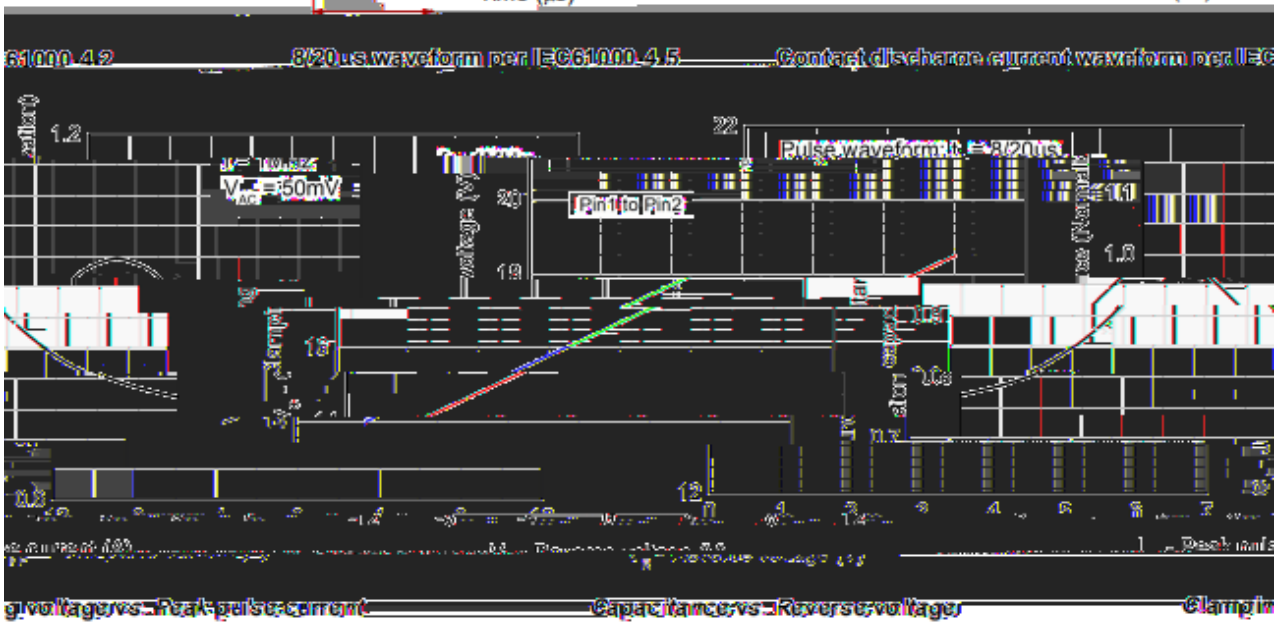
1) TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.

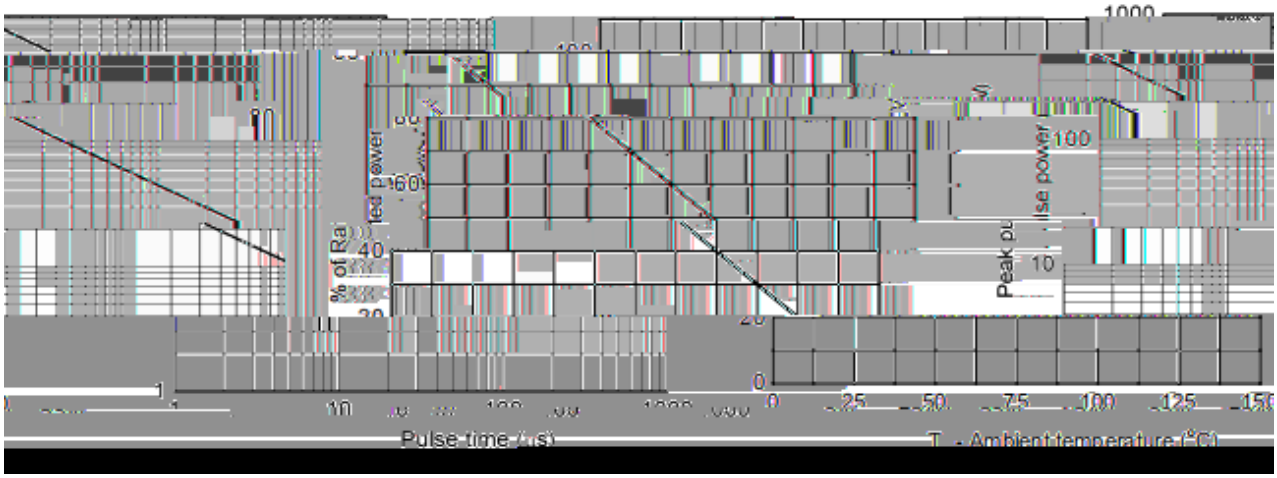
2) Contact discharge mode, according to IEC61000-4-2.

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

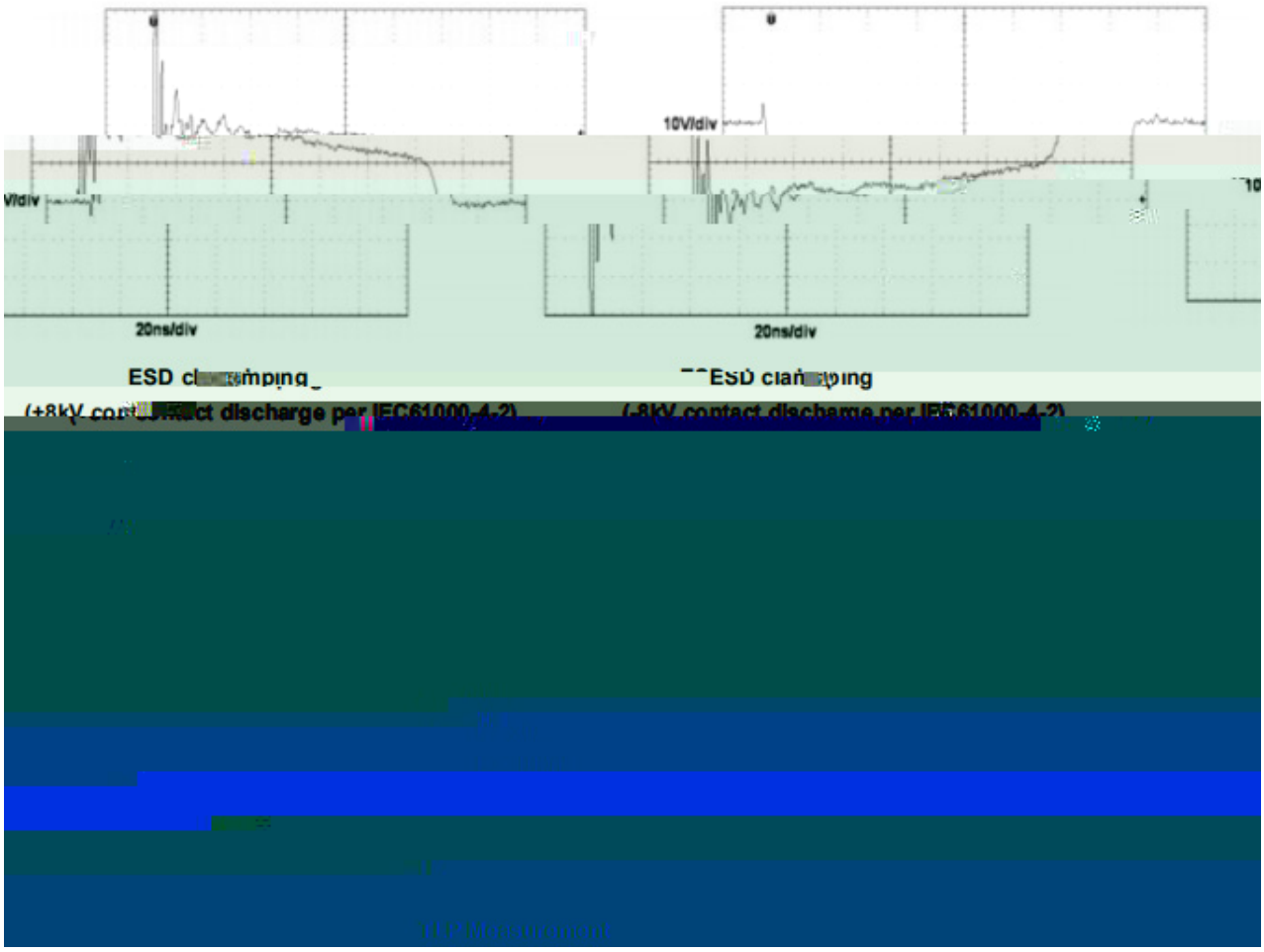
/ Electrical Characteristic Curve(Ta=25)





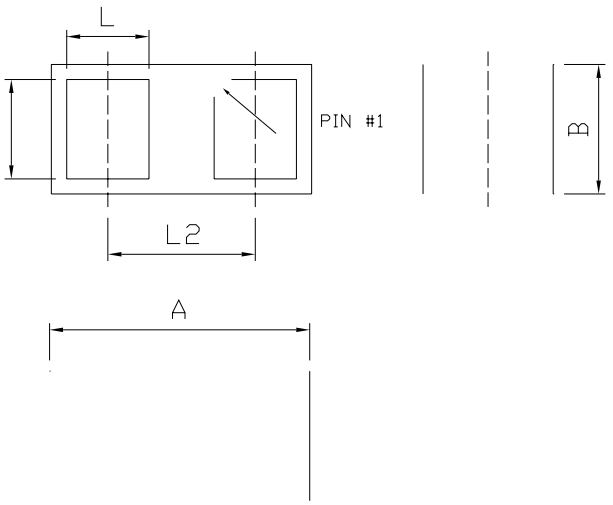


/ Electrical Characteristic Curve(Ta=25)



/ Package Dimensions

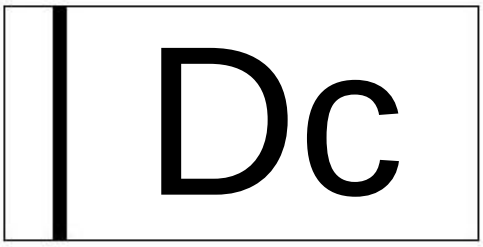
DFN0603 Unit:mm



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



Dc

Note

Dc Product Type

( ) / 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

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
DFN0603	10,000							