

BRES5V0M1B2ZA

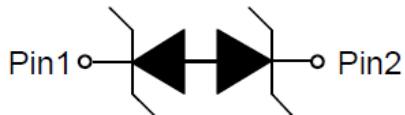
Rev.A Aug.-2024

DFN0603

ESD

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

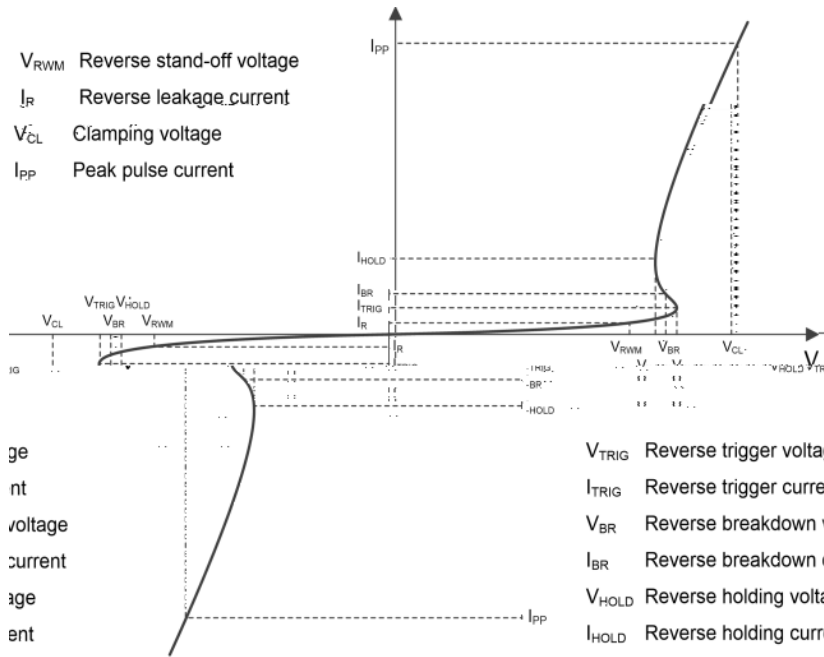
- ◆ Stand-off voltage: $\pm 5V$ Max.
 - ◆ Transient protection for each line according to
 - IEC61000-4-2(ESD): $\pm 30kV$ (contact)
 - IEC61000-4-4 (EFT): 80A (5/50ns)
 - IEC61000-4-5(surge): 20A (8/20 μs)
 - ◆ Ultra-low capacitance: $C_J = 35pF$ typ.
 - ◆ Low leakage current:
 - ◆ Low clamping voltage: $V_{CL} = 7.8V$ typ. @ $I_{PP} = 16A$ (TLP)
 - ◆ Solid-state silicon technology
 - ◆ HF Product
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- ◆ Battery Line Protection
 - ◆ Audio Line Protection
 - ◆ Microphone Line Protection
 - ◆ GPIO Protection



/ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Peak Pulse Power($t_p = 8/20\mu s$)	P_{PK}	230	W
Peak Pulse Current($t_p = 8/20\mu s$)	I_{PP}	20	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)



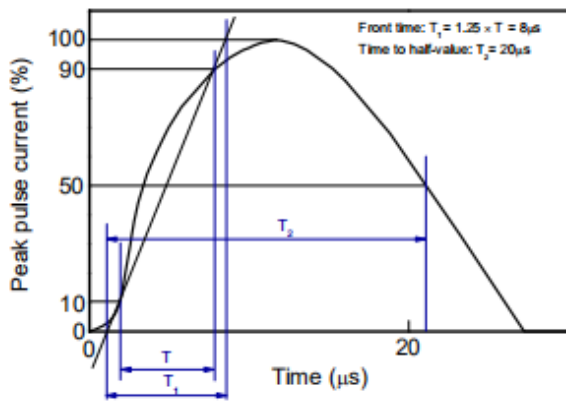
Definitions of electrical characteristics

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	5.1			V
Reverse holding voltage	V _{HOLD}	I _{HOLD} =50mA	5.1			V
Clamping voltage ¹⁾	V _{CL}	I _{PP} =16A t _p =100ns		7.8		V
Dynamic resistance ¹⁾	R _{DYN}			0.1		
Clamping voltage ²⁾	V _{CL}	V _{ESD} = 8kV		8.0		V
Clamping voltage ³⁾	V _{CL}	I _{PP} = 1A t _p = 8/20μs		6.2	8	V
		I _{PP} = 20A t _p = 8/20μs		9.5	11.5	V
Junction Capacitance	C _J	V _R =0V f = 1MHz		35	45	pF
	C _J	V _R = 5V f = 1MHz		25	35	pF

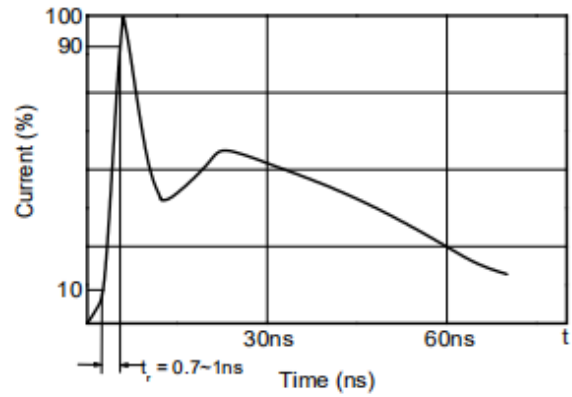
Notes:

- 1) TLP parameter: Z₀ = 50 Ω, 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.

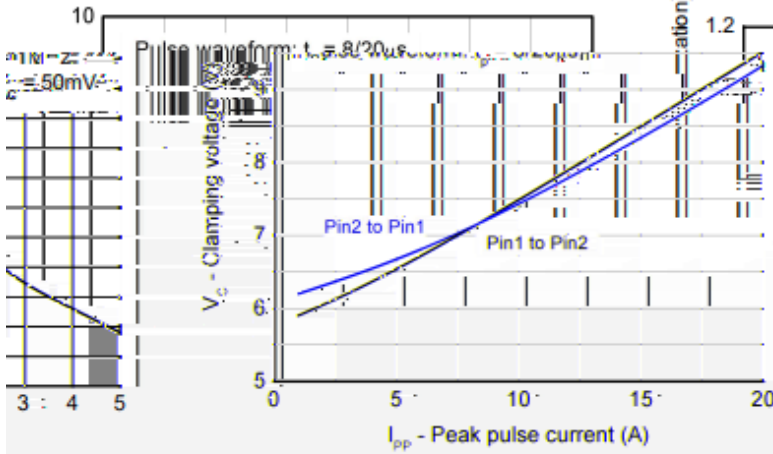
/ Electrical Characteristic Curve(Ta=25)



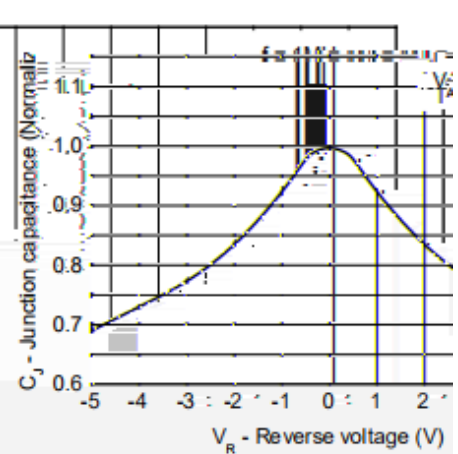
8/20μs waveform per IEC61000-4-5



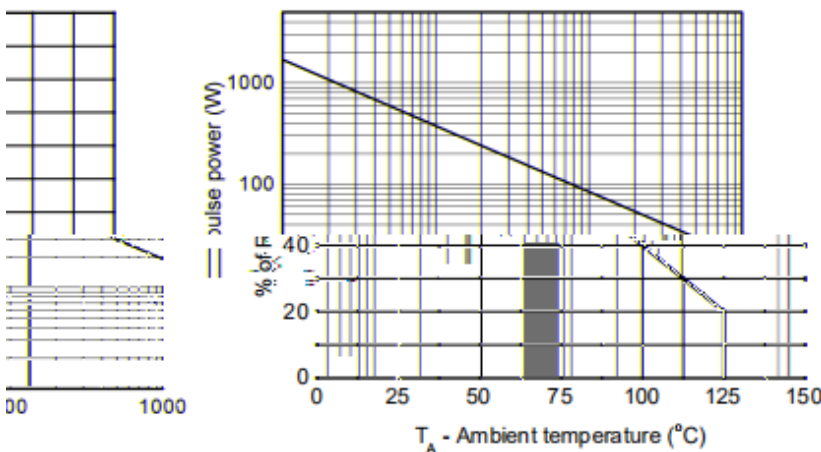
Contact discharge current waveform per IEC61000-4-2



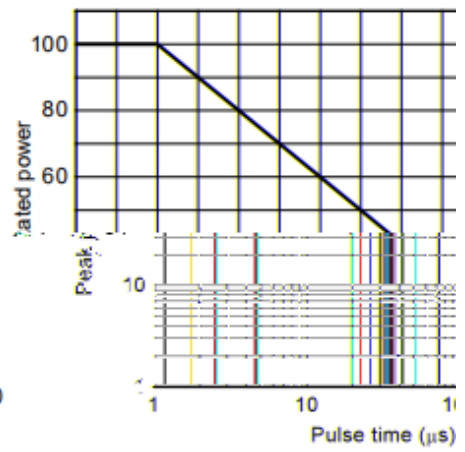
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse

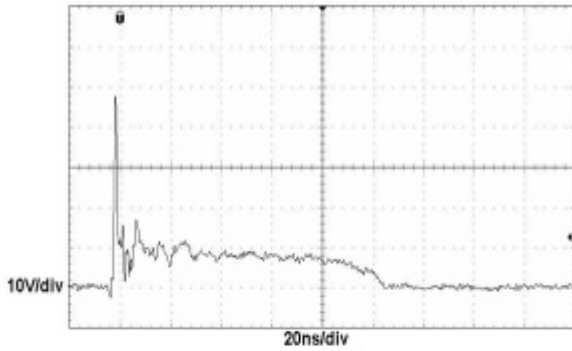


Power derating vs. Ambient temperature

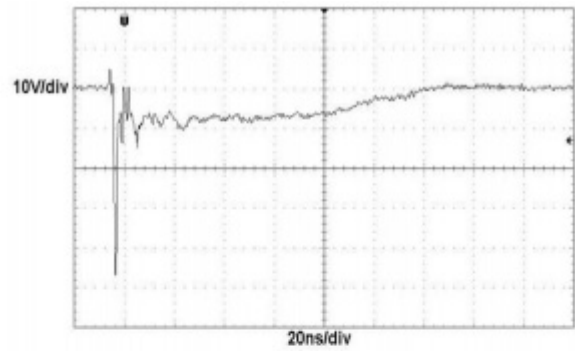


Non-repetitive peak pulse p

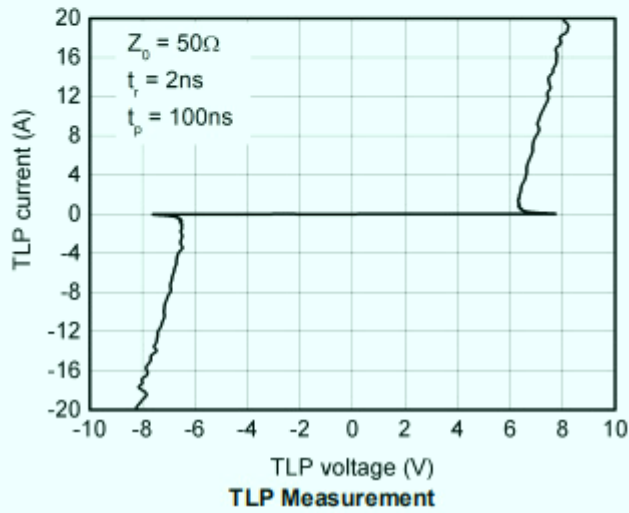
/ Electrical Characteristic Curve(Ta=25)



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



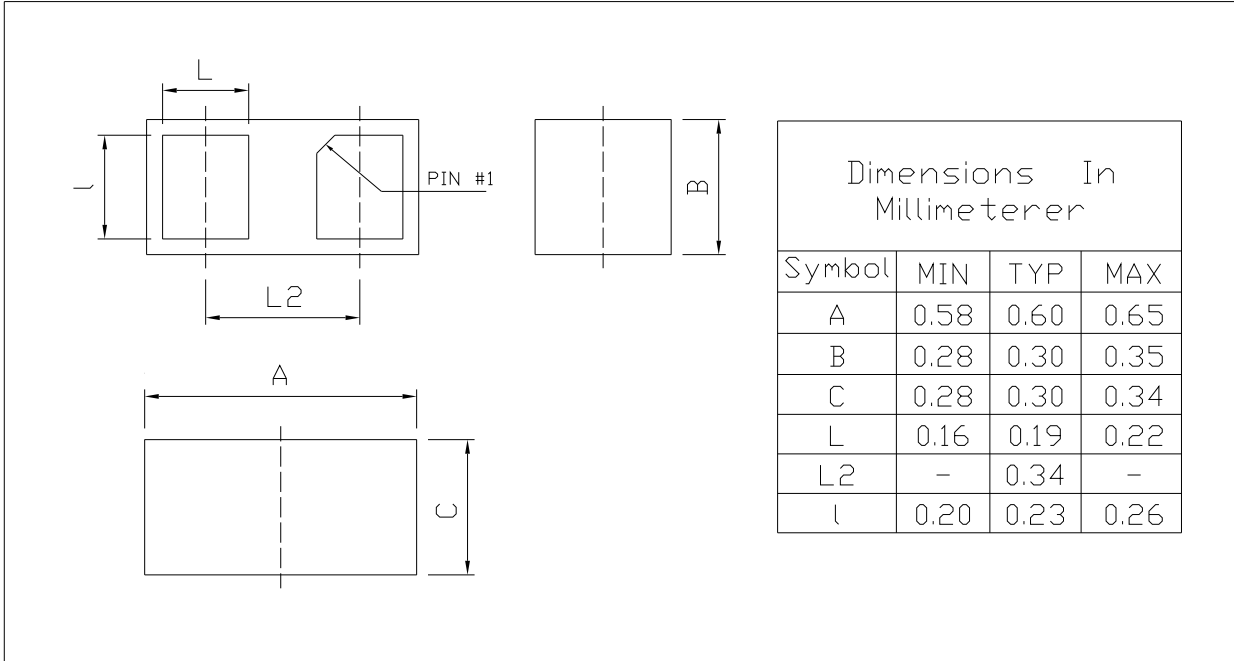
EEESub-clamping
(-8kV contact discharge per IEC61000-4-2)



/ Package Dimensions

DFN0603

Unit:mm



Rev.02 202102

/ Marking Instructions

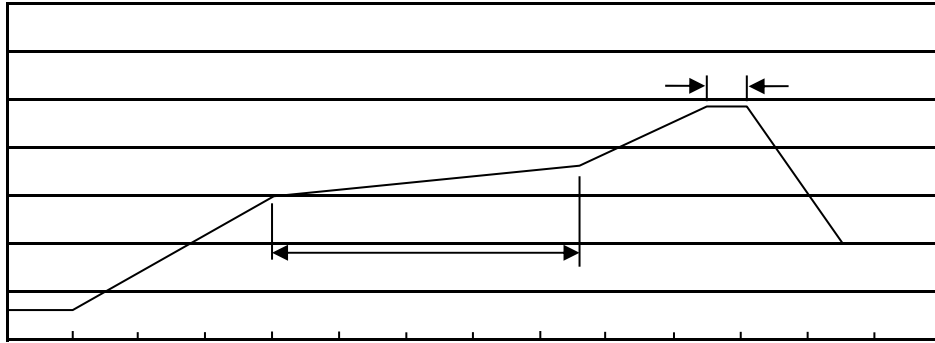


5B

Note

5B 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

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只卷盘	卷盘盒	只盒	盒箱	只箱	盒	箱	
DFN0603	15,000	10	150,000	4	600,000	7 x8	210x205x205	445x435x230

/ Notices