

BRES5V0M1B2ZA

Rev.A Aug.-2024

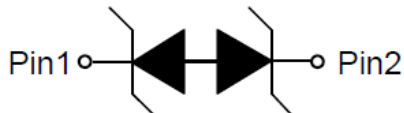
DFN0603

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

- ◆ Battery Line Protection
- ◆ Audio Line Protection
- ◆ Microphone Line Protection
- ◆ GPIO Protection

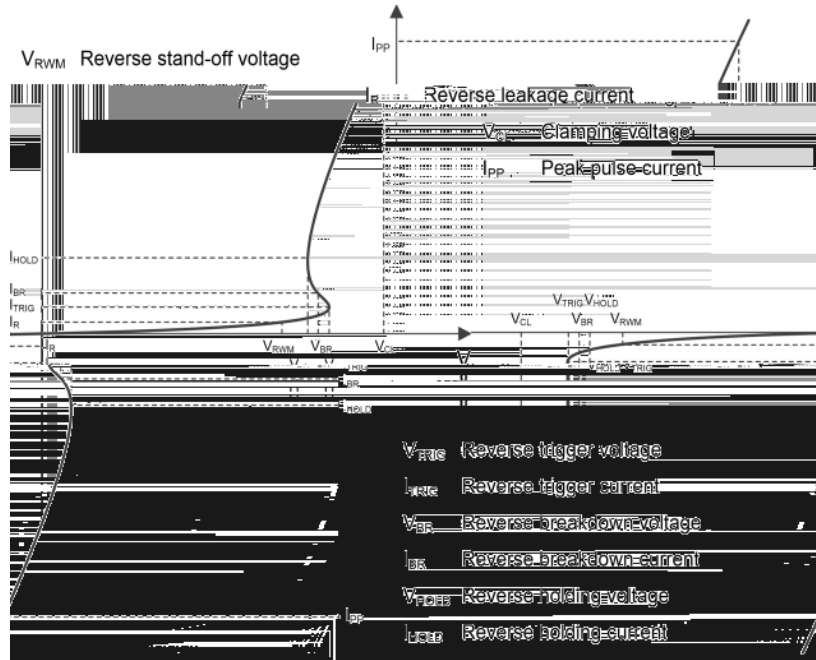


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/ Absolute Maximum Ratings

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}	$I_{PP}=16A \quad t_p=100ns$		7.8		V
Dynamic resistance ¹⁾	R_{DYN}			0.1		Ω
Clamping voltage ²⁾	V_{CL}	$V_{ESD}= 8kV$		8.0		V
Clamping voltage ³⁾	V_{CL}	$I_{PP} = 1A \quad t_p = 8/20\mu s$		6.2	8	V
		$I_{PP} = 20A \quad t_p = 8/20\mu s$		9.5	11.5	V
Junction Capacitance	C_J	$V_R = 0V \quad f = 1MHz$		35	45	pF
	C_J	$V_R = 5V \quad f = 1MHz$		25	35	pF

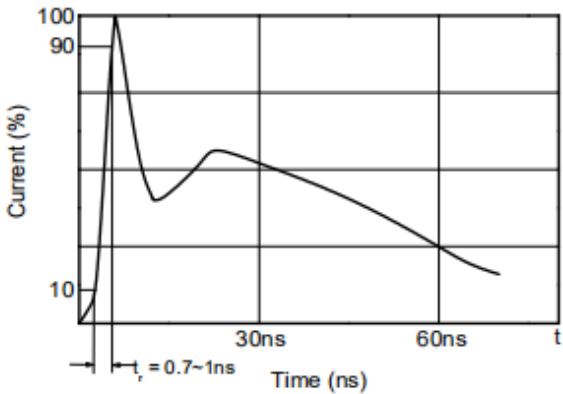
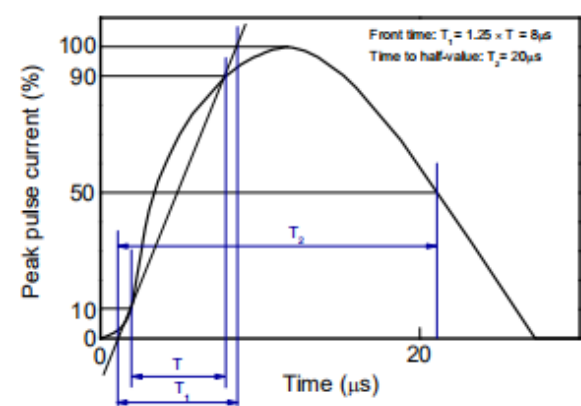
Notes:

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.

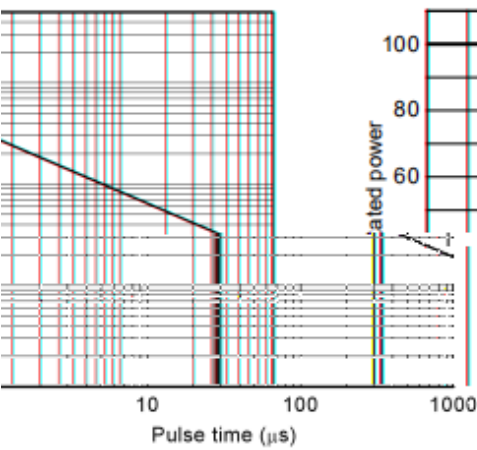
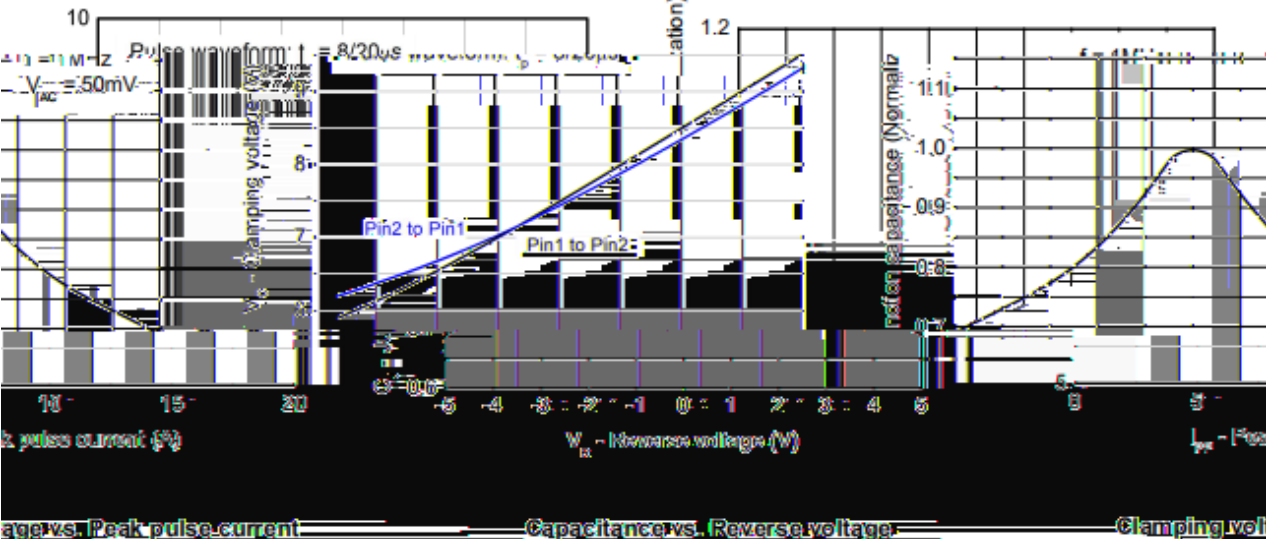
3) Non-repetitive current pulse, according to IEC61000-4-5.

/ Electrical Characteristic Curve(Ta=25)

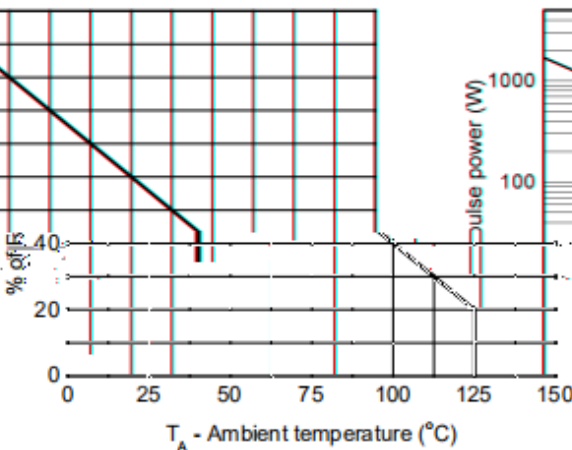


8/20μs waveform per IEC61000-4-5

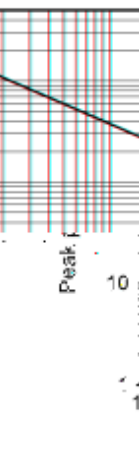
Contact discharge current waveform per IEC61000-4-2



Ion-repetitive peak pulse power vs. Pulse time

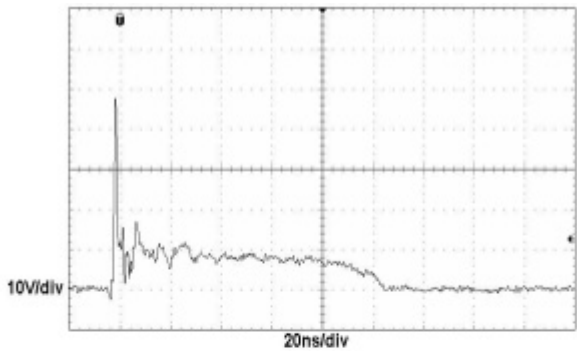


Power derating vs. Ambient temperature

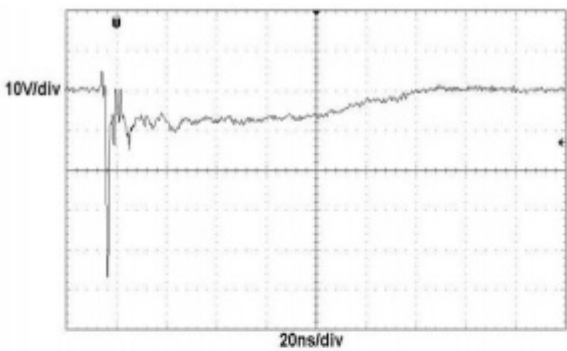


Peak current vs. Ambient temperature

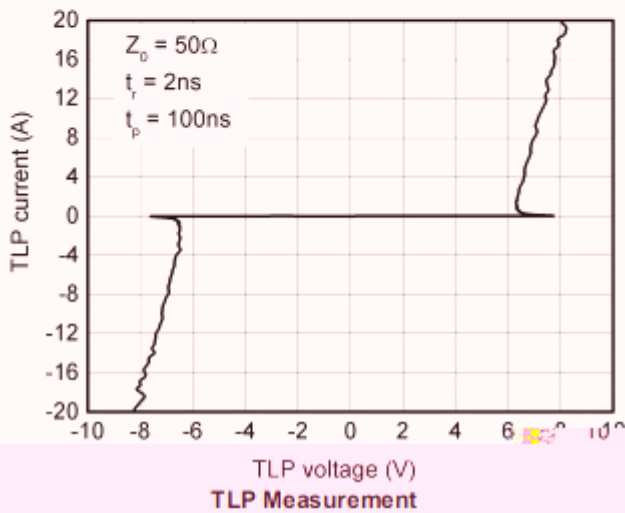
/ Electrical Characteristic Curve(Ta=25)



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



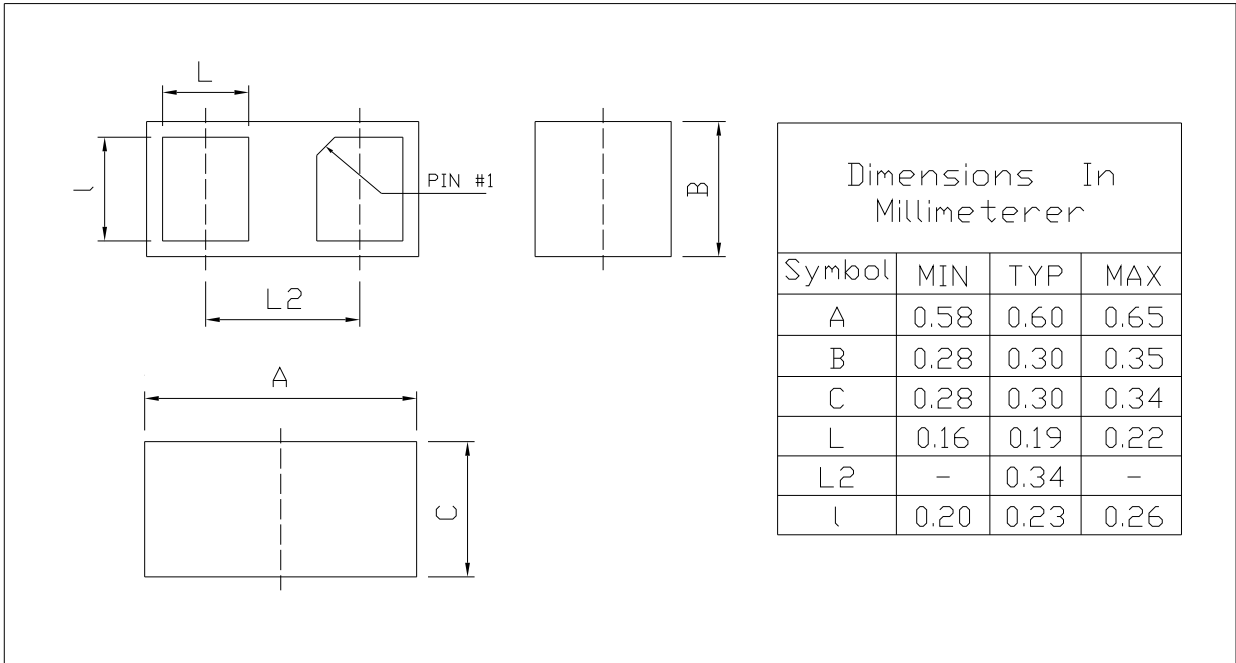
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



/ Package Dimensions

DFN0603

Unit:mm



Rev.02 202102

/ Marking Instructions

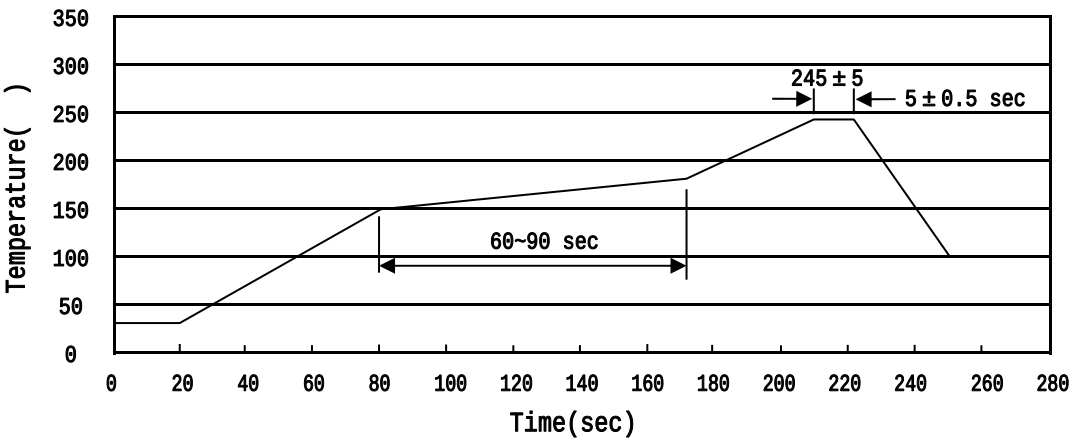


5B

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: mm³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱
DFN0603	15,000	10	150,000	4	600,000	7 ×8	210×205×205	445×435×230

/ Notices