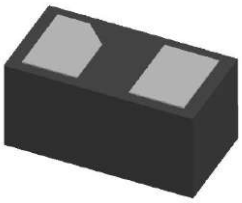
ESD5311Z

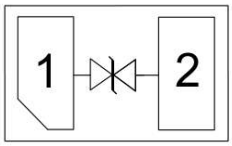
Bidirectional TVS Diode for ESD Protection

FEATURES:

- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 5V
- ✧ ROHS compliant



DFN0603



PIN Configuration

MAIN APPLICATIONS

- ✧ Cell Phone Handsets and Accessories
- ✧ Personal Digital Assistants (PDA's)
- ✧ Notebooks, Desktops, and Servers
- ✧ Portable Instrumentation
- ✧ Pagers
- ✧ Microprocessor based equipment

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±12kV (air), ±12kV (contact)
- ✧ IEC61000-4-5 (Lighting) 4.0A (8/20us)

MECHANICAL CHARACTERISTICS

- ✧ Package DFN0603
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Quantity Per Reel : 10,000pcs
- ✧ Lead Finish : Lead Free
- ✧ Marking code：5B

ABSOLUTE MAXIMUM RATINGS (T_A=25ºC, RH=45%-75%, unless otherwise noted)

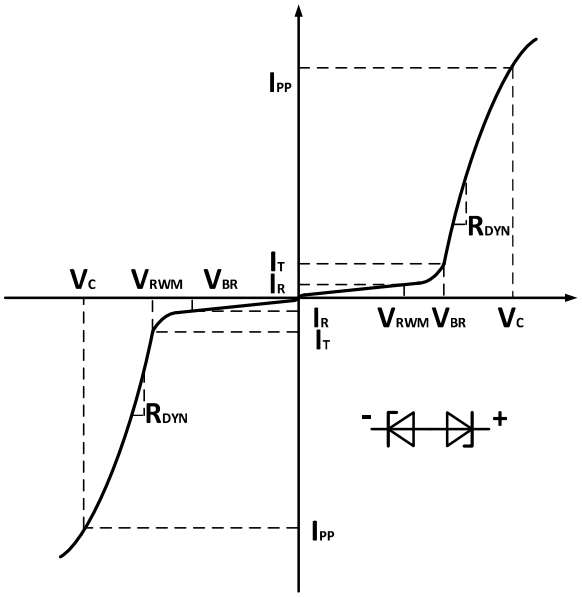
Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	℃
Operating junction temperature range	T_j	-55 to +125	℃
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	88	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 12 +/- 12	kV

ELECTRICAL CHARACTERISTICS (T_A=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_R				5	V
Reverse Breakdown Voltage	V_{BR}	IT = 1mA	6.0			V
Reverse Leakage Current	I_R	V_R = 5V			1.0	μA
Peak Pulse Current	Ipp	t p =8/20μs			4.0	A
Clamping Voltage	V_C	I_{PP} =1.0A, tp =8/20μs			13	V
		I_{PP} =4.0A, tp =8/20μs			22	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		0.22	0.35	pF

RATINGS AND V-I CHARACTERISTICS CURVES

Symbol	Parameter
V_{RWM}	Reverse Standoff Voltage
I_R	Max Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Max Peak Pulse Current
R_{DYN}	Dynamic Resistance
C_J	Junction Capacitance
P_{PP}	Peak Pulse Power



RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25ºC, unless otherwise noted)

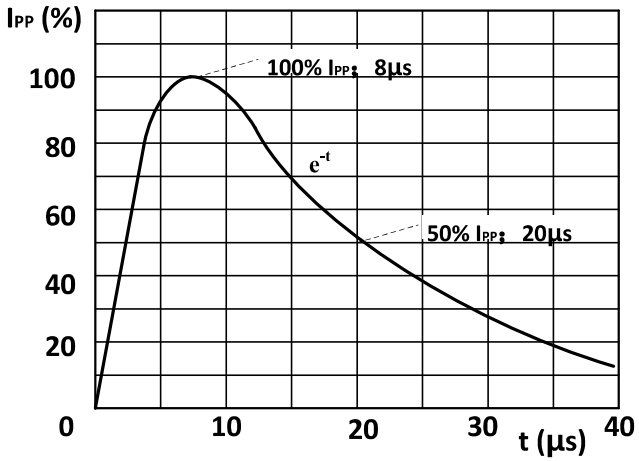


Fig. 1. 8/20 μs pulse waveform according to IEC 61000-4-5 and IEC 61643-321

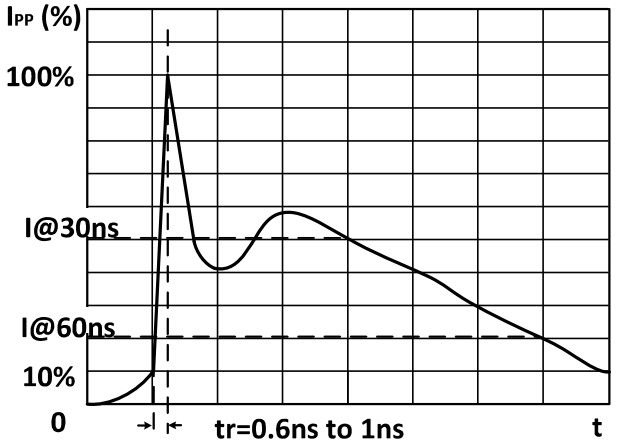


Fig. 2. ESD pulse waveform according to IEC 61000-4-2

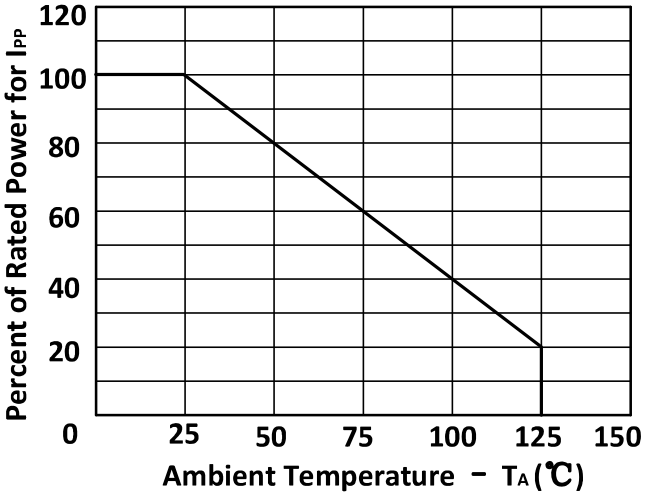


Fig. 3. Power Derating Curve

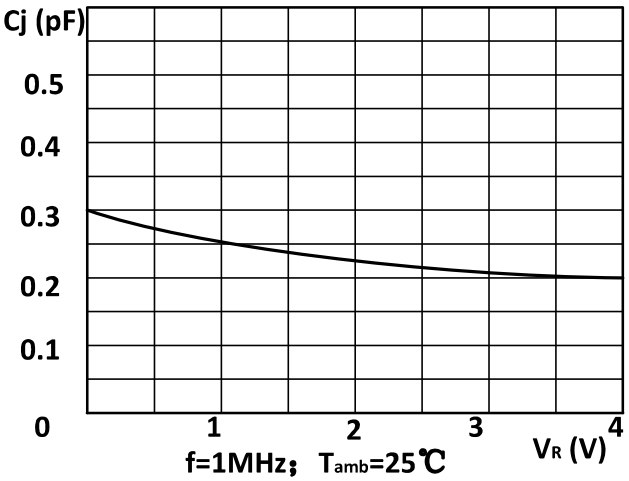
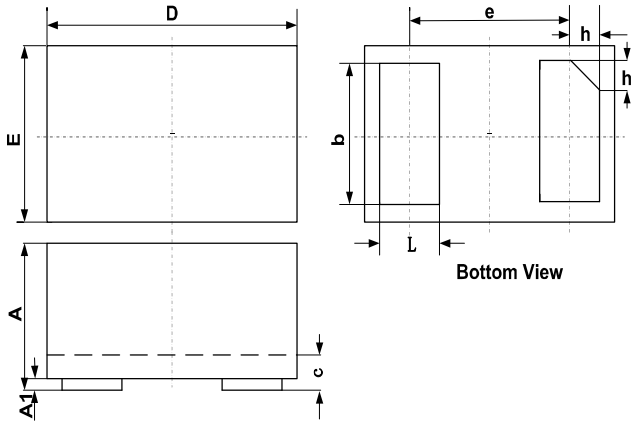


Fig. 4. Junction Capacitance vs VR

PACKAGE MECHANICAL DATA

DFN0603



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		