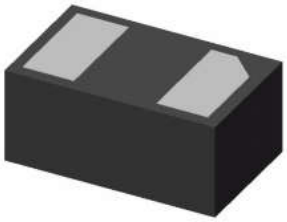
FS03LBDF

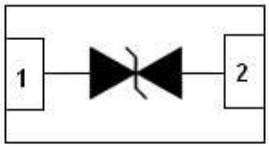
Bidirectional TVS Diode for ESD Protection

FEATURES:

- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 3.3V
- ✧ ROHS compliant



DFN1006



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

MECHANICAL CHARACTERISTICS

- ✧ Package DFN1006
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Quantity Per Reel : 10,000pcs
- ✧ Lead Finish : Lead Free
- ✧ Marking code：3Z

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

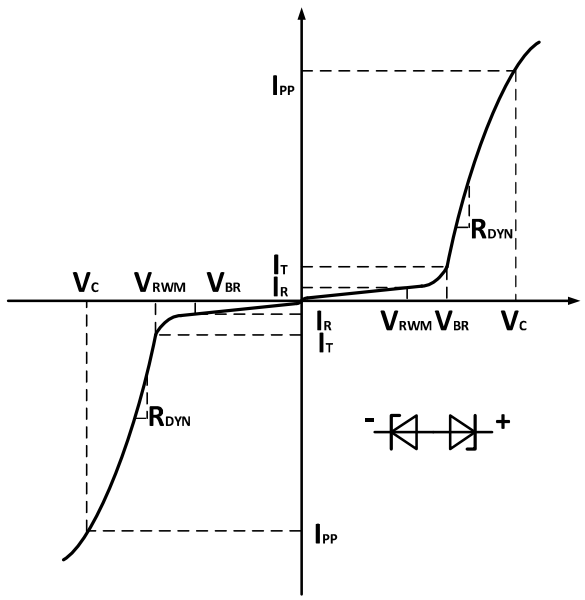
Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	℃
Operating junction temperature range	T_j	-55 to +125	℃
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	88	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}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

ELECTRICAL CHARACTERISTICS (T_A=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_R				3.3	V
Reverse Breakdown Voltage	V_{BR}	IT = 1mA	4.2			V
Reverse Leakage Current	I_R	V_R = 3.3V			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)

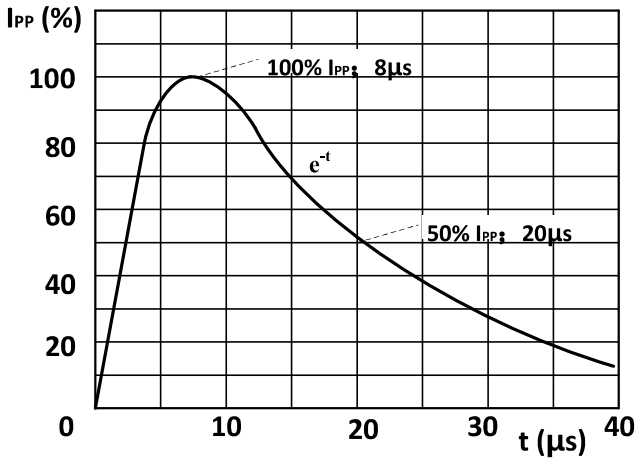


Fig. 1. 8/20 μs pulse waveform according to IEC 61000-4-5 and IEC 61643-321

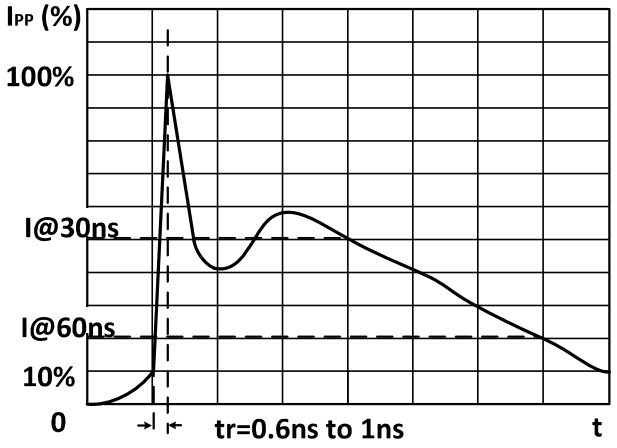


Fig. 2. ESD pulse waveform according to IEC 61000-4-2

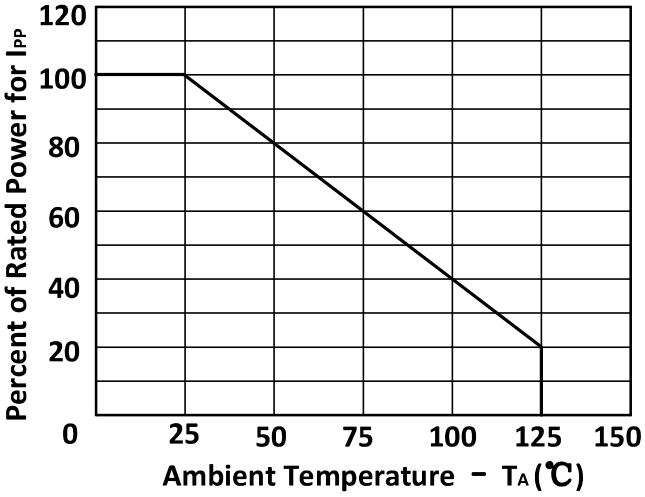


Fig. 3. Power Derating Curve

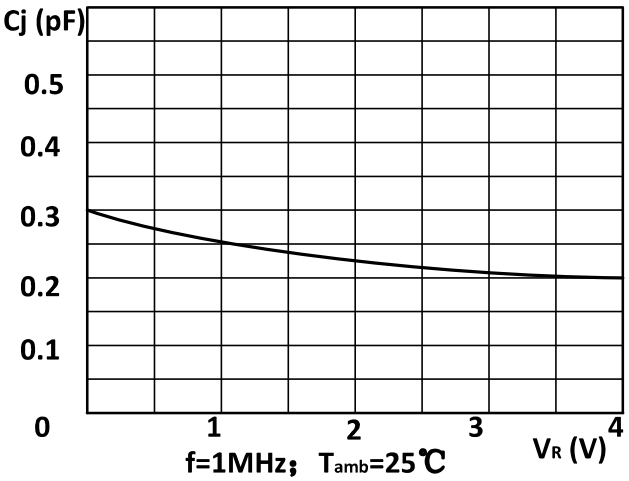
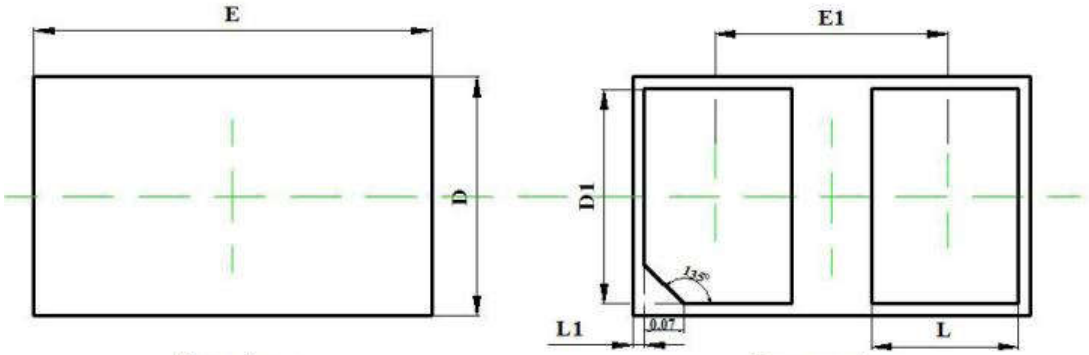
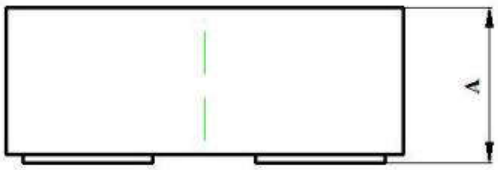


Fig. 4. Junction Capacitance vs VR

PACKAGE MECHANICAL DATA





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.350	0.450	0.014	0.018
D	0.550	0.650	0.022	0.026
E	0.950	1.050	0.037	0.041
D1	0.420	0.520	0.017	0.020
E1	0.550	0.650	0.022	0.026
L	0.270	0.370	0.011	0.015
L1	0.000	0.100	0.000	0.004