ESDBM3V3A1

Bidirectional TVS Diode for ESD Protection

Features

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



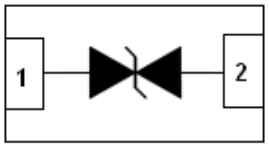
DFN1006-2L

Protection Solution to meet

- ✧ IEC61000-4-2 (ESD) ±30kV (air),±30kV (contact)
- ✧ IEC61000-4-5 (Lighting)10A (8/20us)

Mechanical Characteristics

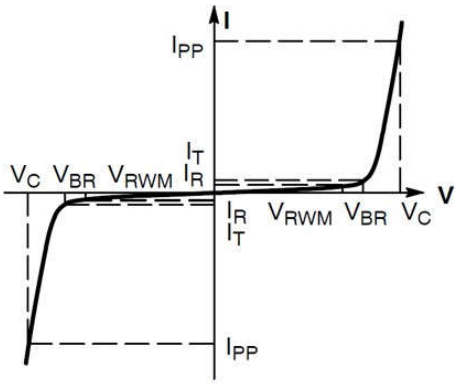
- ✧ Package DFN1006-2L
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Quantity Per Reel : 10,000pcs
- ✧ Lead Finish : Lead Free
- ✧ Marking code：3X



PIN Configuration

Portion Electronics Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @I_{PP}



Absolute Maximum Ratings (T_A=25°C , 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_{Pk}	80	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 30 +/- 30	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	3.7			V
Reverse Leakage Current	I_R	V_R = 3.3V			0.1	μA
Peak Pulse Current	Ipp	t p =8/20μs			9	A
Clamping Voltage	V_C	I_{PP} = 1A, tp =8/20μs			6.0	V
		I_{PP} = 9A, tp =8/20μs			9	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		15	25	pF

Electrical Characteristics Curves (T_A=25°C, unless otherwise noted)

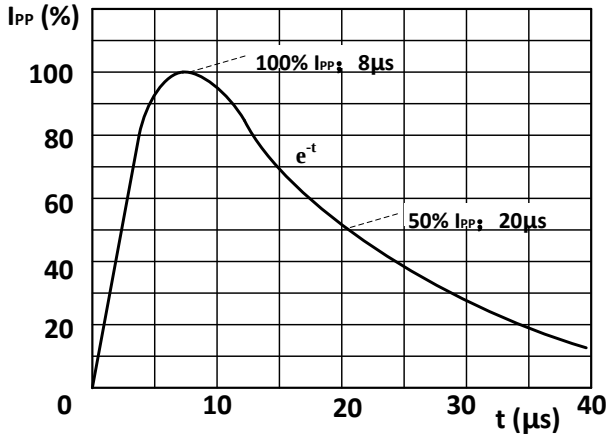


Fig. 1. 8/20 μs pulse waveform according to IEC 61000-4-5 and IEC 61643-321

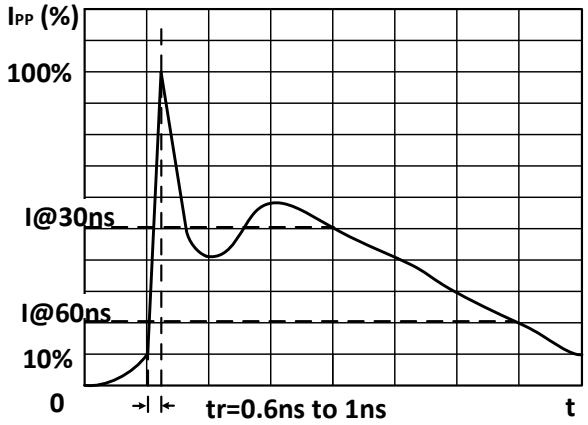


Fig. 2. ESD pulse waveform according to IEC 61000-4-2

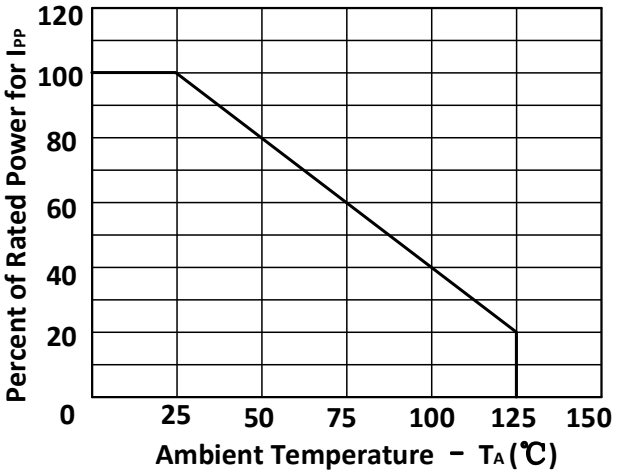


Fig. 3. Power Derating Curve

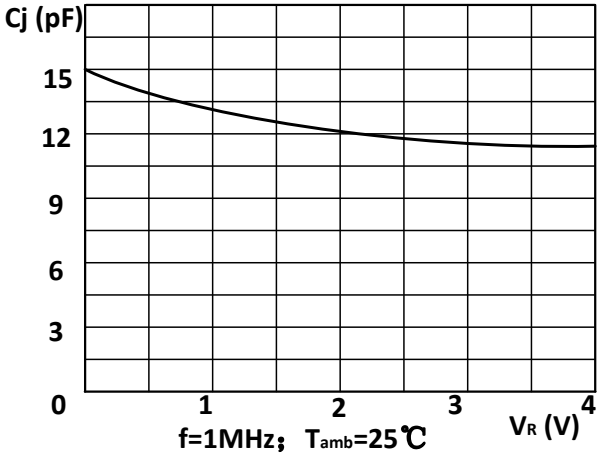
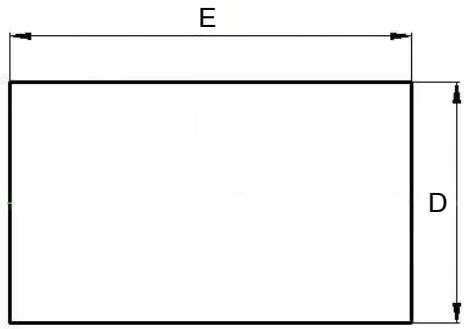
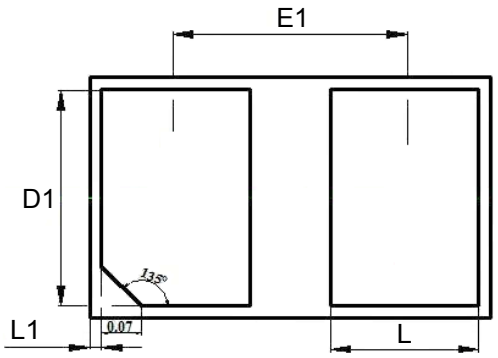


Fig. 4. Junction Capacitance vs VR

Package Mechanical Data(DFN1006-2L)



Top view



Bottom view



Side view

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