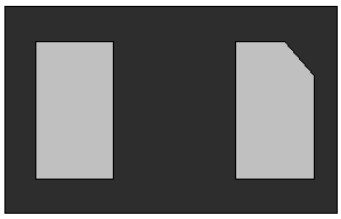
ASB05A07DF-Q1

Bi-directional TVS Diode for ESD Protection

Features

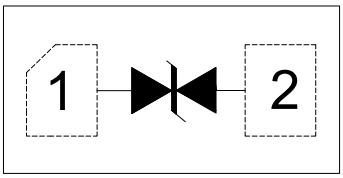
- Protects one bi-directional I/O line
- Low clamping voltage
- Low operating voltage:5.0V
- Compliant to Halogen-free
- Suffix “-Q1” for AEC-Q101



DFN-2L(0402)

Applications

- Cell phone handsets and accessories
- Personal digital assistants (PDA’s)
- Notebooks, desktops, and servers
- Portable instrumentation
- Pagers
- Microprocessor based equipment



Pin Configuration

Protection Solution to Meet

- IEC61000-4-2 (ESD) ±30kV(air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 7A (8/20μs)

Mechanical Data

- DFN-2L package
- Molding compound flammability rating : UL 94V-0
- Marking code：PB

Absolute Maximum Ratings (T_A=25ºC unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20μs waveform	P_{PP}	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 30 +/- 30	kV
Lead soldering temperature	T_L	260 (10 sec.)	℃
Operating junction temperature range	T_J	-55 to +125	℃
Storage temperature range	T_{STG}	-55 to +150	℃

Electrical Characteristics (T_A=25ºC unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	I_T =1mA	5.5	6	8.5	V
Reverse leakage current	I_R	V_{RWM}=5V			0.1	μA
Peak pulse current	I_{PP}	t_P=8/20μs			7	A
Clamping voltage	V_C	I_{PP}=1A, t_P=8/20μs		7	10	V
		I_{PP}=7A, t_P=8/20μs		11	13	V
Junction capacitance	C_J	V_{RWM}=0V, f=1MHz		18	20	pF

Typical Characteristics (T_A=25ºC unless otherwise noted)

FIG.1:V- I curve characteristics (Bi-directional)

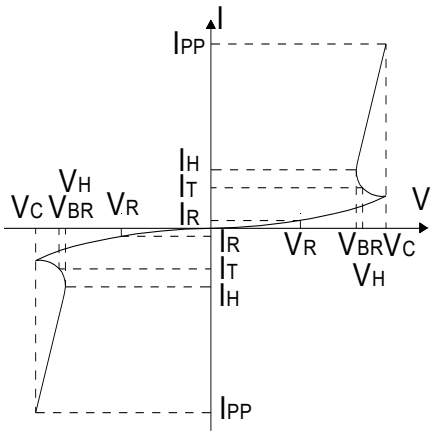


FIG.2: Pulse waveform (8/20μs)

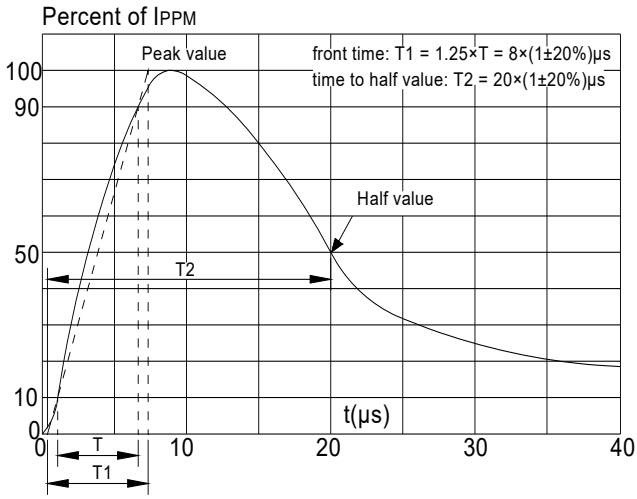


FIG.3: Pulse derating curve

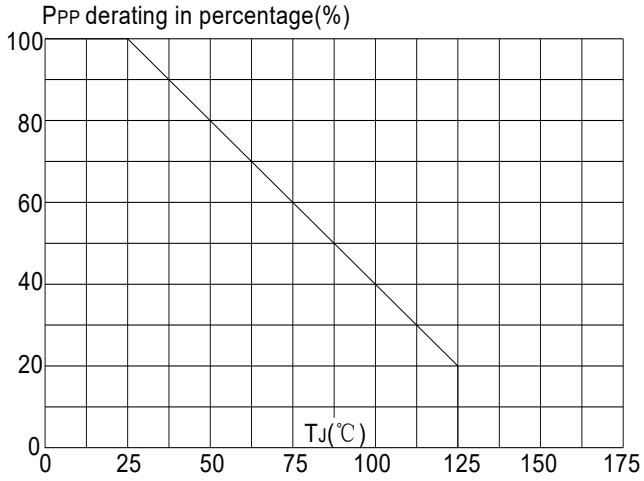
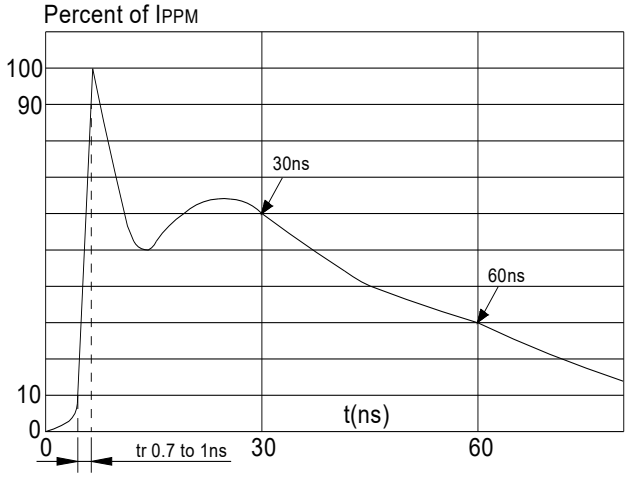


FIG.4: ESD clamping (30kV contact)



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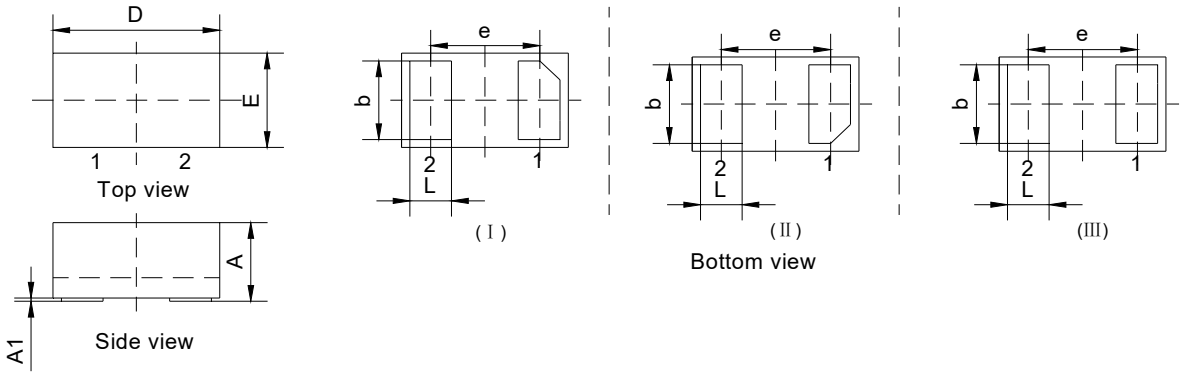
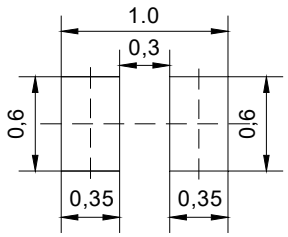
Package Dimensions



Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.40	0.50	0.55	0.016	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65BSC			0.026BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012



Recommended soldering footprint(mm)