

Features

- Protects one line I/O or power line
- Protection solution to meet
 - IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 4A (8/20 μs)
- Low clamping voltage
- Low leakage current
- Ultra low capacitance: 21pF(typ)
- RoHS Compliant
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Applications

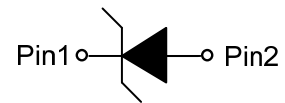
- USB 2.0 power and data line protection
- High speed data line
- LAN equipment
- Digital visual interface (DVI)
- Video

Mechanical Data

- Package: DFN-2L
- Molding compound flammability rating: UL 94V-0
- Marking Information: See Below



0402(DFN-2L)



PIN Configuration

Absolute maximum ratings ($T_a=25^\circ\text{C}$, RH=45%-75%, Unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20 μs waveform	P_{PP}	300	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.)	$^\circ\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				36	V
Reverse breakdown voltage	V_{BR}	$I_T=1\text{mA}$, Pin1 to 2	40			V
Forward voltage	V_F	$I_F=10\text{mA}$, Pin2 to 1	0.6		1.2	V
Reverse leakage current	I_R	$V_{RWM}=36\text{V}$			0.1	μA
Peak pulse current	I_{PP}	$t_p=8/20\mu\text{s}$			4	A
Clamping voltage	V_C	$I_{PP}=1\text{A}$, $t_p=8/20\mu\text{s}$		46	55	V
		$I_{PP}=4\text{A}$, $t_p=8/20\mu\text{s}$		60	70	V
Junction capacitance	C_J	$V_{RWM}=0\text{V}$, $f=1\text{MHz}$		21	30	pF

Characteristics (Typical)

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

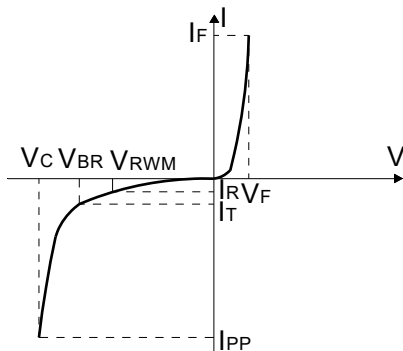


FIG.2: Pulse waveform (8/20 μs)

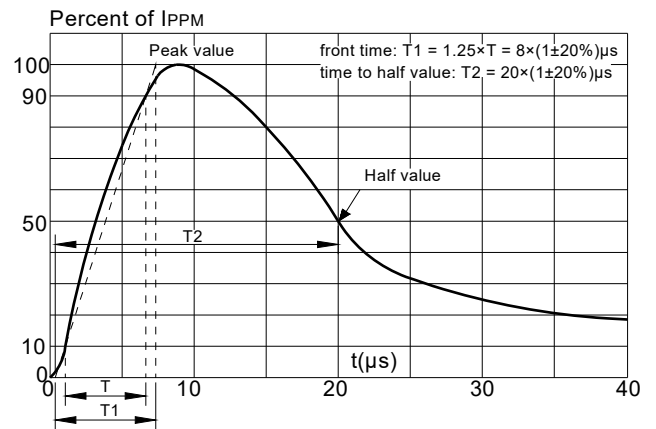


FIG.3: Pulse derating curve

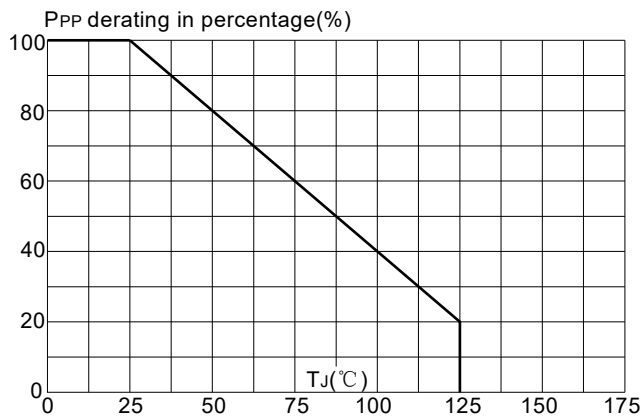
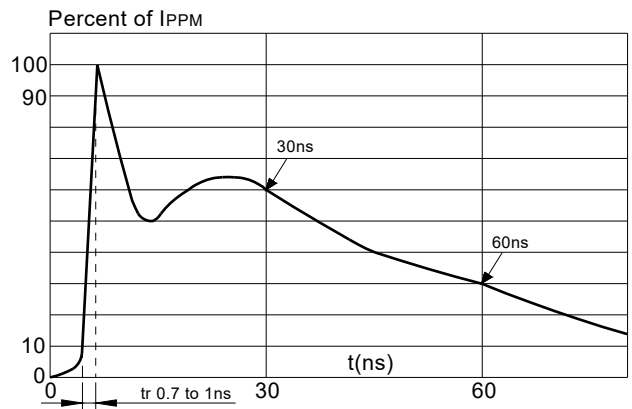
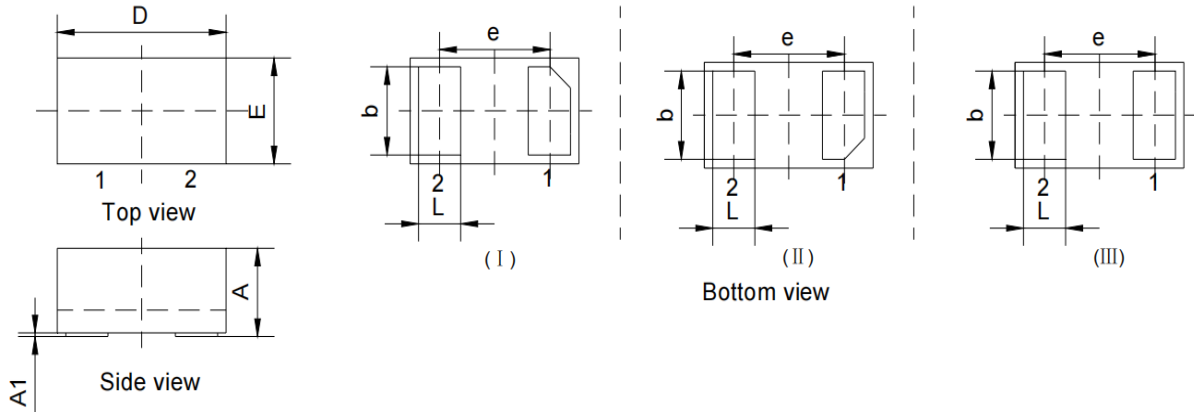


FIG.4: ESD clamping (30kV contact)

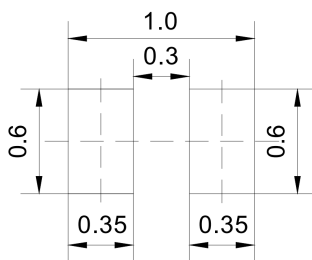


Outline Dimensions



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 PCB Layout



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met

Unit:mm