HIGH DIODE

ESDB05LCDF

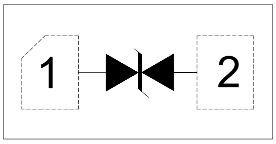
RoHS COMPLIANT

HALOGEN FREE

DFN1006-2L Plastic-Encapsulate Diodes

Bi-direction ESD Protection Diode

DFN1006-2L (Bottom view)



Pin Configuration (Top view)

FEATURES

- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 5.0V
- ✧ Low leakage current
- ✧ Ultra low capacitance: 0.3pF(typ.)
- ✧ RoHS compliant

MAIN APPLICATIONS

- ✧ USB ports
- ✧ Display port
- ✧ Wireless communications
- ✧ Digital visual interface (DVI)
- ✧ Cellular handsets & accessories

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 4.5A (8/20μs)

MECHANICAL CHARACTERISTICS

- ✧ DFN1006-2L package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 10,000pcs
- ✧ Lead finish: lead free

MARKING CODE

5F

MAXIMUM RATINGS (T_a=25℃unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P_{PP}	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 20 +/- 20	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=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5.0	V
Reverse breakdown voltage	V_{BR}	I_T =1mA	6.0			V
Reverse leakage current	I_R	V_{RWM} =5V			1.0	μA
Peak pulse current	I_{PP}	t_P=8/20μs			4.5	A
Clamping voltage	V_C	I_{PP}=1A, t_P=8/20μs		10	12.5	V
		I_{PP}=2.5A, t_P=8/20μs		15	18	V
		I_{PP}=4.5A, t_P=8/20μs		25	30	V
Junction capacitance	C_J	V_{RWM}=0V, f=1MHz		0.3	0.5	pF

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

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

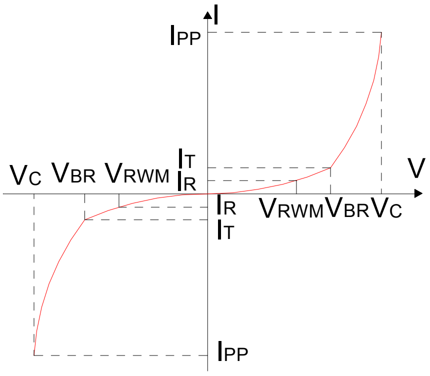


FIG.2: Pulse waveform (8/20μs)

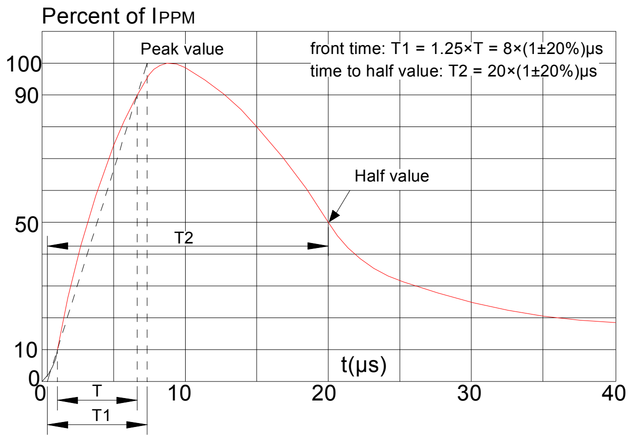


FIG.3: Pulse derating curve

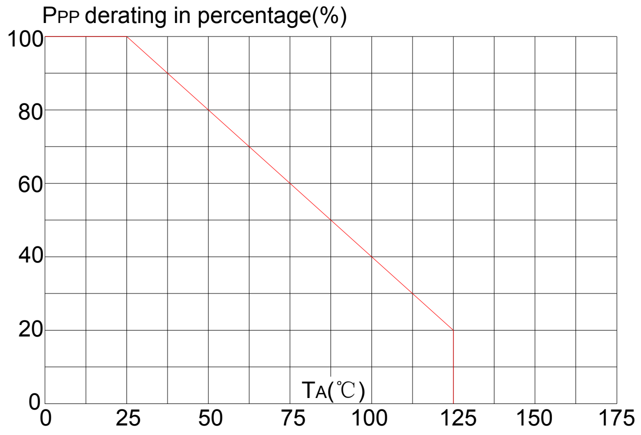


FIG.4: ESD clamping (20kV contact)

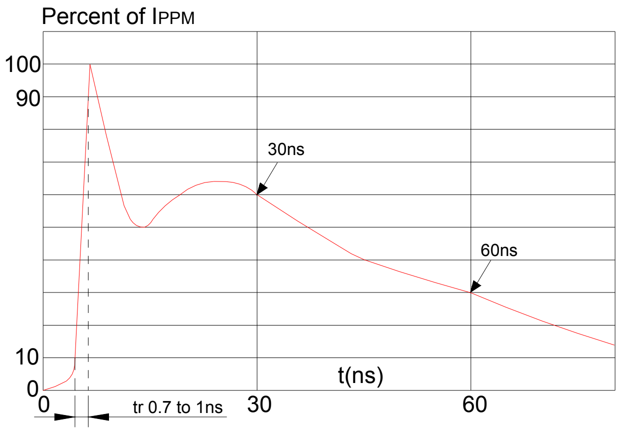


FIG.5:Capacitance vs.reverse voltage

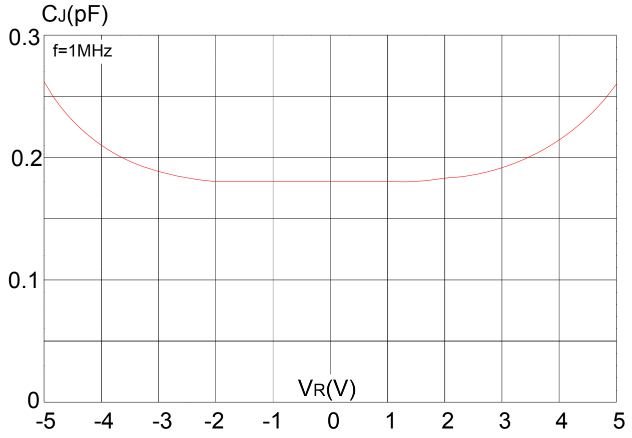
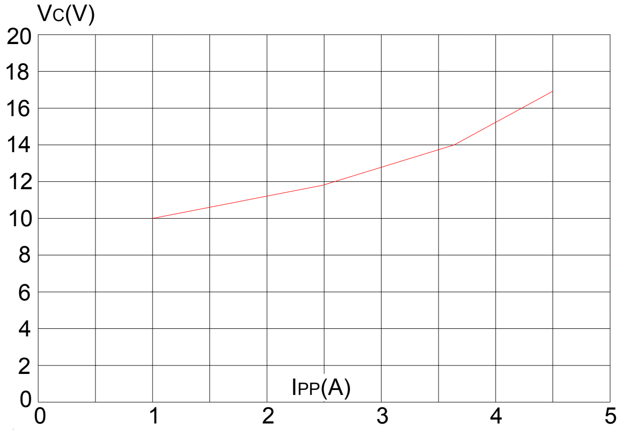
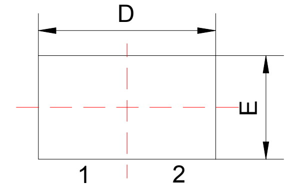


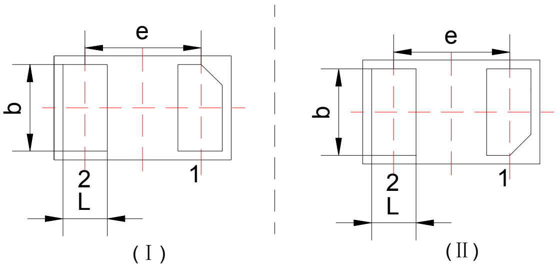
FIG.6:Clamping voltage vs.peak pulse current



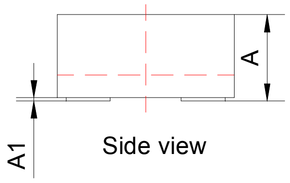
DFN1006-2L Package Outline Dimensions



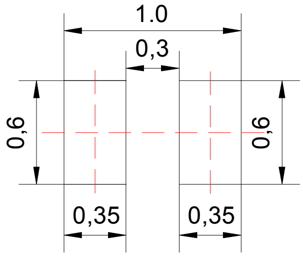
Top view



Bottom view



Side view



Recommended soldering footprint(mm)

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