

DFN1006-2L Plastic-Encapsulate Diodes

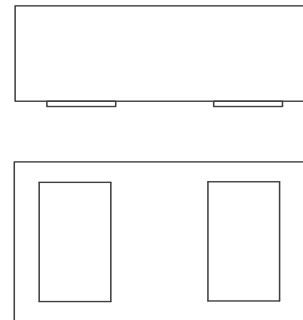
Description

The ESDA5B0M1D2 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

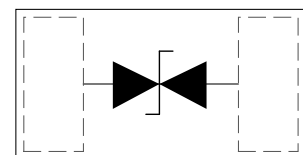
Features

- IEC 61000-4-2 Level 4 ESD Protection
 - $\pm 10\text{kV}$ Contact Discharge
 - $\pm 15\text{kV}$ Air Discharge
- 80W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- RoHS compliant
- Protecting one bi-directional lines
- Low Junction capacitance: 0.35pF Typ.

DFN1006-2L **RoHS**
COMPLIANT



Schematic & PIN configuration



Applications

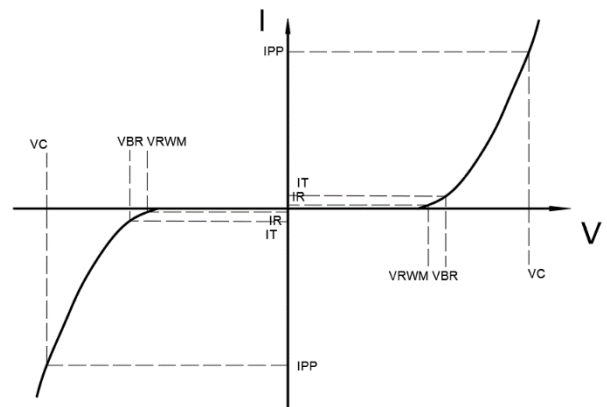
- USB 2.0/3.0
- Monitors and flat panel display
- 10/100/1000 ethernet
- Notebook computers
- SIM ports
- ATM interface

Absolute Maximum Ratings : ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power ($t_p=8/20\mu\text{s}$)@ 25°C	P_{pk}	-	80	W
Peak pulse current ($t_p=8/20\mu\text{s}$)@ 25°C	I_{PP}	-	4	A
ESD (IEC61000-4-2 air discharge) @ 25°C	V_{ESD}	-	± 15	kV
ESD (IEC61000-4-2 contact discharge) @ 25°C	V_{ESD}	-	± 10	kV
Junction temperature	T_J	-	150	$^{\circ}\text{C}$
Operating temperature	T_{OP}	-40	125	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-55	150	$^{\circ}\text{C}$
Lead temperature	T_L	-	260	$^{\circ}\text{C}$

Portion Electronics Parameter

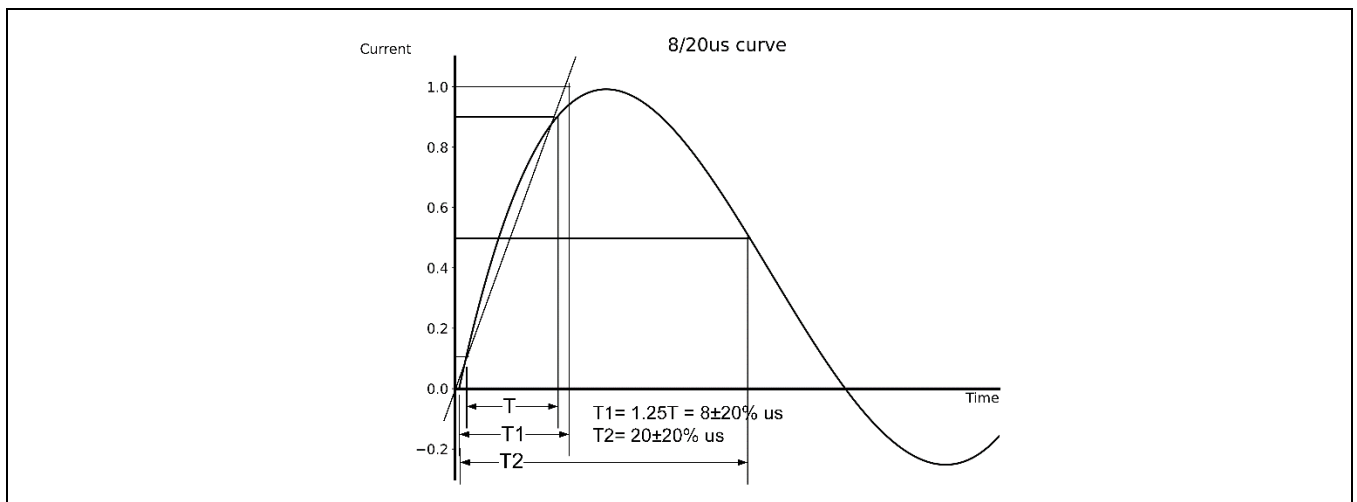
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



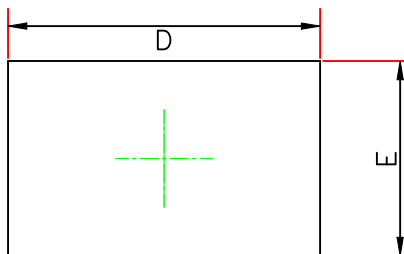
Electrical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6.0			V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}$; $t_p=8/20\mu\text{s}$		12		V
Clamping Voltage	V_C	$I_{PP}=4\text{A}$; $t_p=8/20\mu\text{s}$		18		V
Junction Capacitance	C_J	I/O to GND; $V_R=0\text{V}$; $f=1\text{MHz}$		0.35		pF

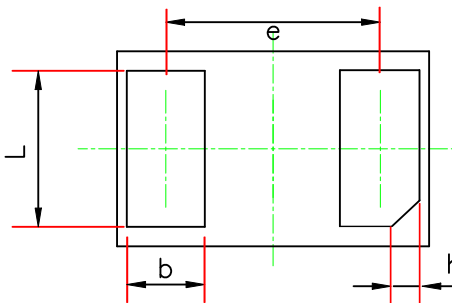
Typical Characteristic



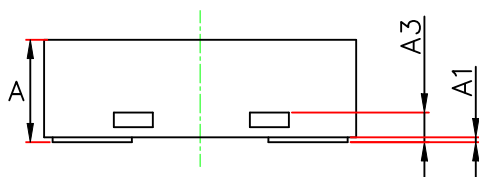
DFN1006-2L Package Outline Dimensions



TOP VIEW



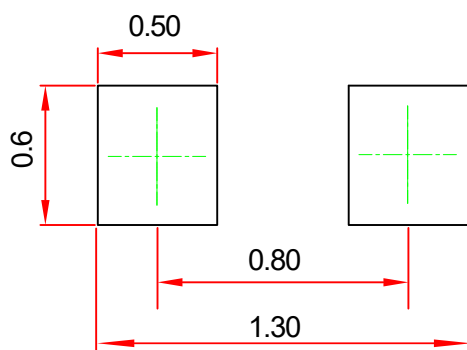
BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
A3	0.120	0.180	0.005	0.007
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.200	0.300	0.008	0.012
e	0.650TYP.		0.026TYP.	
L	0.450	0.550	0.018	0.022
h	0.007	0.170	0.003	0.007

Suggested Pad Layout



Note:

1. Controlling dimension:in/millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.