

DFN1006 Plastic-Encapsulate TVS/ESD Protection Diodes

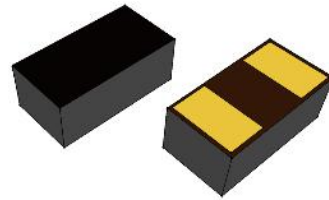
DESCRIPTION

ESD1201OC is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With maximum capacitance of 15pF only, ESD1201OC is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc. ESD1201OC uses ultra-small DFN1006 package. Each ESD1201OC device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern..

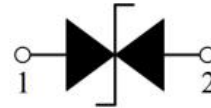
Features

- ◆ Peak Power Dissipation 150 W (8/20 μs)
- ◆ Stand-off voltage :12V
- ◆ Low capacitance 15pF(Maximum)
- ◆ Protects I/O Port
- ◆ Low clamping voltage
- ◆ Low Leakage
- ◆ Low Capacitance
- ◆ Response Time is <1ns
- ◆ Meets MSL 1 Requirements
- ◆ Replacement for MLV(0402)

Pin Configuration



Circuit Diagram



Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Serial and Parallel Ports
- ◆ Projection TV
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ MP3 Players

Mechanical Characteristics

- ◆ Package: DFN1006
- ◆ Flammability Rating: UL 94V-0
- ◆ High temperature soldering guaranteed: 260 °C/10s
- ◆ Marking: MOC
- ◆ Packing: Tape & Reel
- ◆ Quantity per reel: 10,000pcs

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Peak Pulse Power(tp=8/20us waveform)	P _{PP}	150	W
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260(10 sec.)	°C

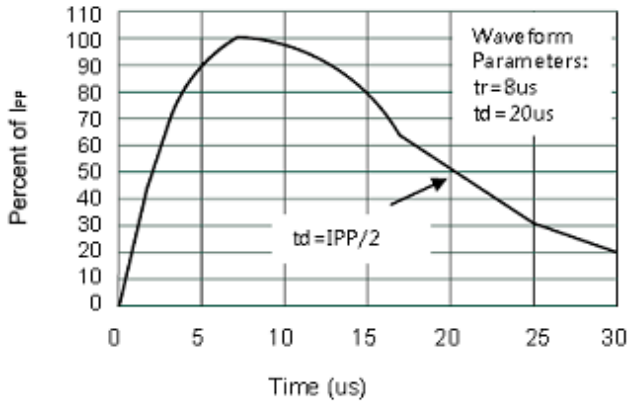
The above data are for reference only.

Electrical Characteristics (T_A=25°C unless otherwise specified)

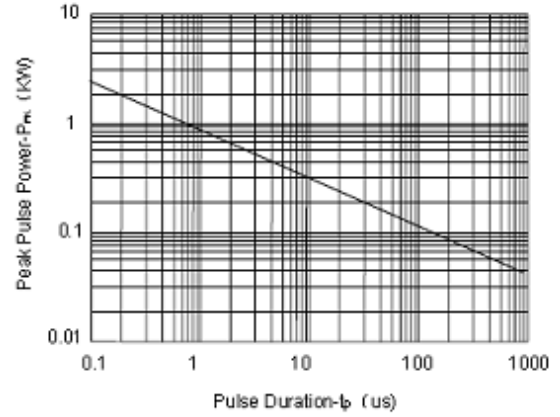
Symbol	Param	Test Condition	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage				12.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	13.3			V
I _R	Reverse Leakage Current	V _{RWM} = 12V			0.2	μA
V _C	Clamping Voltage	I _{PP} = 1A, t _p = 8/20μs			19	V
		I _{PP} = 5A, t _p = 8/20μs			26	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz		13	15	pF

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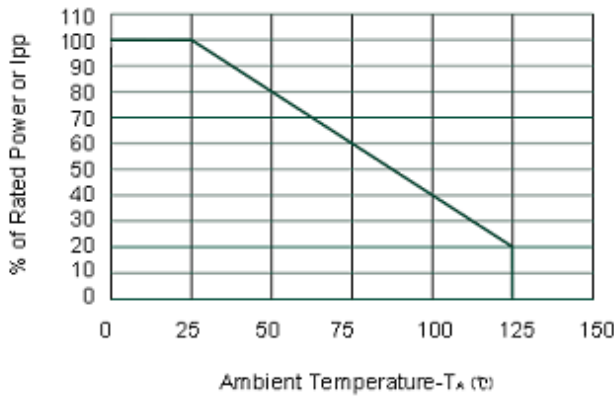
ELECTRICAL CHARACTERISTICS CURVE



Pulse Waveform



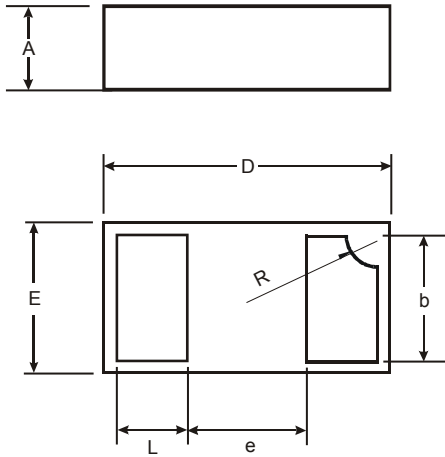
Non-Repetitive Peak Pulse Power vs. Pulse Time



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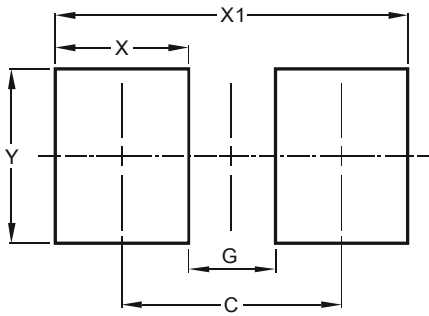
Outline Drawing

DFN1006 Package Outline Dimensions



DFN1006			
Dim	Min	Max	Typ
A	0.45	0.55	0.50
b	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.07	0.17	0.12
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
C	0.90
G	0.40
X	0.50
X1	1.10
Y	0.50

Note:

1. Controlling dimension: in/millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
DFN1006	7'	178	10,000	210×210×205	100,000	445×445×230	400,000