

## Low Capacitance Bidirectional ESD Protection Diode

### DESCRIPTION

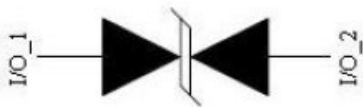
The ESD05D6L is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, VGA, DVI, SDI and other high speed line applications.

This device has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

### ORDERING INFORMATION

- ✧ Device: ESD05D6L
- ✧ Package: DFN0603
- ✧ Marking: Y
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs

### PIN CONFIGURATION



### FEATURES

- ✧ IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ Peak power dissipation: 35W (8/20 $\mu\text{s}$ )
- ✧ Protects one directional I/O line
- ✧ Low clamping voltage
- ✧ Working voltages : 5V
- ✧ Low leakage current
- ✧ Low capacitance

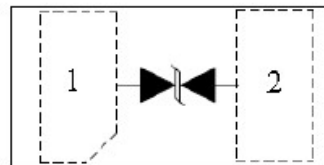
### MACHANICAL DATA

- ✧ DFN0603 package
- ✧ Terminals: Gold plated, solderable per MIL-STD-750, method 2026
- ✧ Packaging: Tape and Reel
- ✧ Reel size: 7 inch

### APPLICATIONS

- ✧ High Speed Line :USB1.0/2.0, VGA, DVI, SDI,
- ✧ Serial and Parallel Ports
- ✧ Notebooks, Desktops, Servers
- ✧ Projection TV
- ✧ Cellular handsets and accessories
- ✧ Portable instrumentation
- ✧ Peripherals

### CIRCUIT DIAGRAM



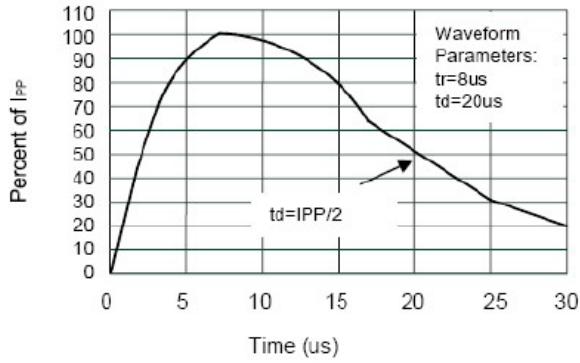
**ABSOLUTE MAXIMUM RATING (T<sub>amb</sub>=25°C, unless otherwise specified)**

Symbol	Parameter	Value	Units
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±15 ±8	kV
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	35	W
T <sub>OPT</sub>	Operating Temperature	-55~150	°C
T <sub>STG</sub>	Storage Temperature	-55~150	°C

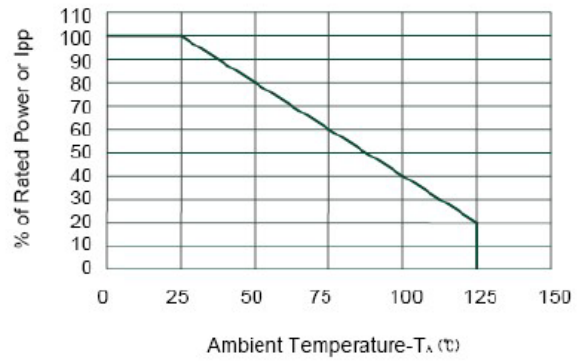
**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C, unless otherwise specified)**

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage				5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA	5.6		9.4	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V			2.0	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs			10.5	V
		I <sub>PP</sub> = 2A, t <sub>p</sub> = 8/20μs			14.0	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz		3.0	4.5	pF

## RATING AND CHARACTERISTICS CURVES (ESD05D6L)

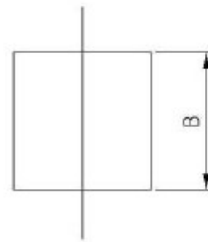
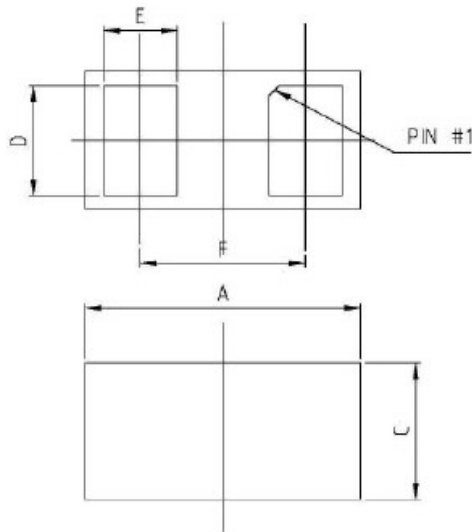


Pulse Waveform



Power Derating Curve

## DFN0603 PACKAGE OUTLINE DIMENSIONS



Dimensions In  
Millimeterer

Symbol	MIN	TYP	MAX
A	0.58	0.60	0.64
B	0.28	0.30	0.34
C	0.28	0.30	0.34
D	0.20	0.24	0.26
E	0.13	0.16	0.19
F		0.36	

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