



ESD05D6CU

Low Capacitance Bi-directional ESD Protection Diode

Description

The ESD05D6CU 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: ESD05D6CU

Package: DFN0603

Marking: Y

Material: Halogen free

Packing: Tape & Reel

Quantity per reel: 10,000pcs

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 μs)

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

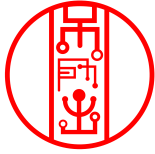
Notebooks, Desktops, Servers

Projection TV

Cellular handsets and accessories

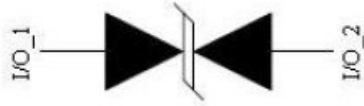
Portable instrumentation

Peripherals

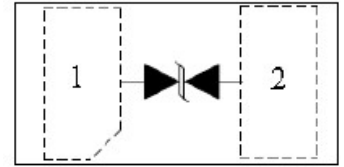


ESD05D6CU

Circuit Diagram



Package Outline

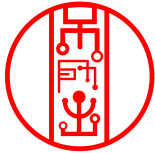


Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 15 ± 8	kV
P_{PP}	Peak Pulse Power (8/20 μ s)	35	W
T_{OPT}	Operating Temperature	-55~150	$^{\circ}$ C
T_{STG}	Storage Temperature	-55~150	$^{\circ}$ C

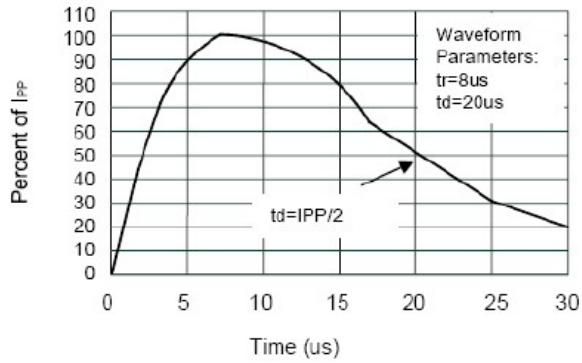
Electrical Characteristics($T_{amb}=25^{\circ}$ C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$	5.6		9.4	V
I_R	Reverse Leakage Current	$V_{RWM} = 5V$			2.0	μA
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$			10.5	V
		$I_{PP} = 2A, t_p = 8/20\mu s$			14.0	V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$		3.0	4.5	pF

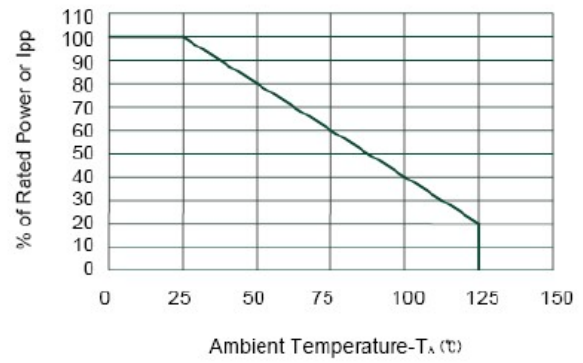


ESD05D6CU

Electrical Characteristics Curve

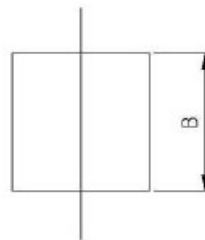
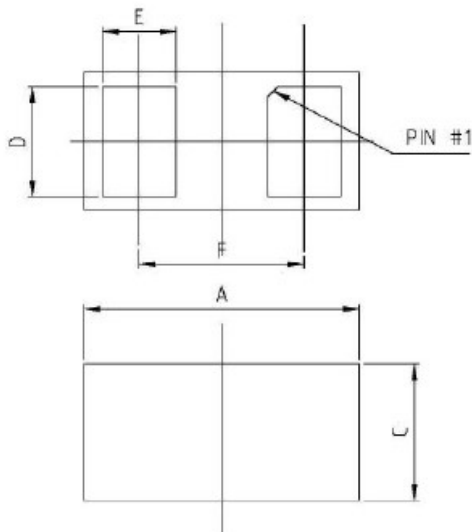


Pulse Waveform



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	