GOODWORK
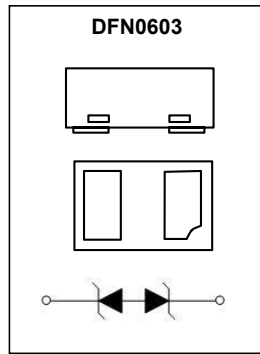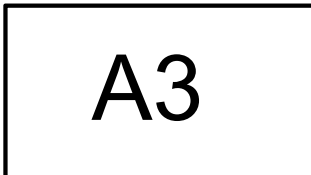
ES3.3D1MA06
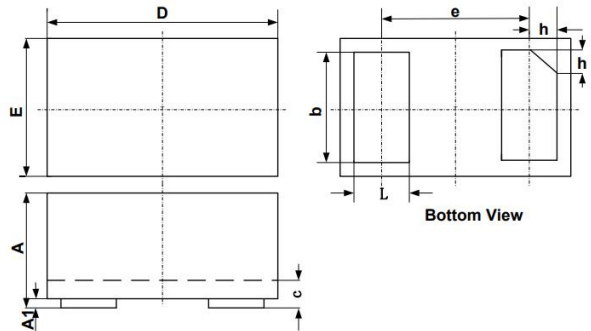## Bi-direction ESD Protection Diode

Features

- Bi-directional ESD protection of one line
- Reverse stand−off voltage: 3.3V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- IEC 61000-4-2 (ESD) immunity test：
- Air discharge: ±30kV
- Contact discharge: ±30kV

DFN0603

Marking Diagram

A3

Package Outline Dimensions (Unit: mm)

Bottom View

SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Description

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

Applications

- Computers and peripherals
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection
- Portable electronics
- FireWire
- Other electronics equipments communi- cation systems

ES3.3D1MA06

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

| Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	80	W
Peak Pulse Current (8/20μs)	IPP	8	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	TJ	−55to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	VR_{WM}				3.3	V
Breakdown Voltage	VBR	I_T = 1mA	3.5		5	V
Reverse Leakage Current	IR	VR_{WM} = $\pm$3.3V			0.1	uA
Clamping Voltage	Vc	I_{PP} = 8A (8 x 20μs pulse)			10	V
Junction Capacitance	Cj	VR = 0V, f = 1MHz			20	pF

Electronics Parameter

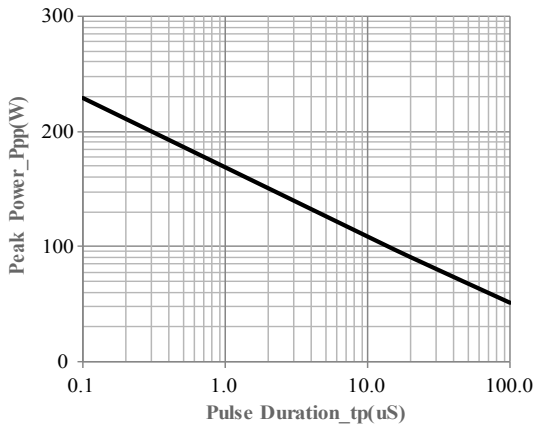| Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @Ic
V_{BR}	Breakdown Voltage @ IT
I_R	Reverse Leakage Current @ VRWM
V_{RWM}	Reverse Standoff Voltage
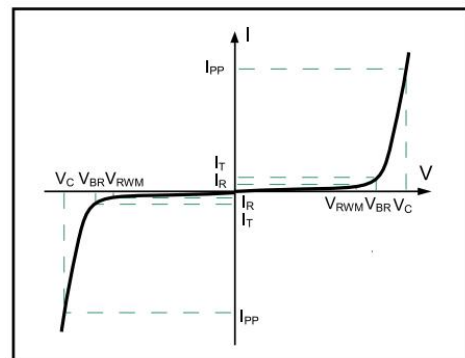
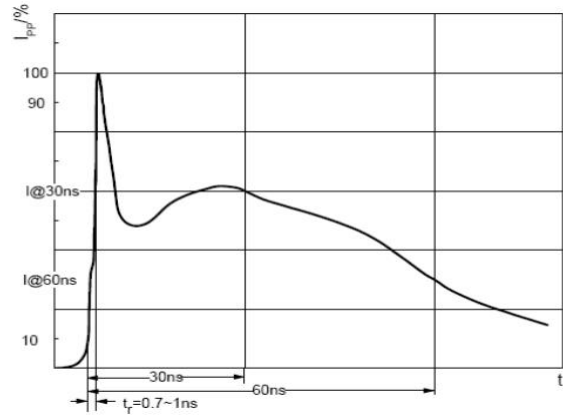# Typical Performance Characteristics (T_A=25°C unless otherwise Specified)
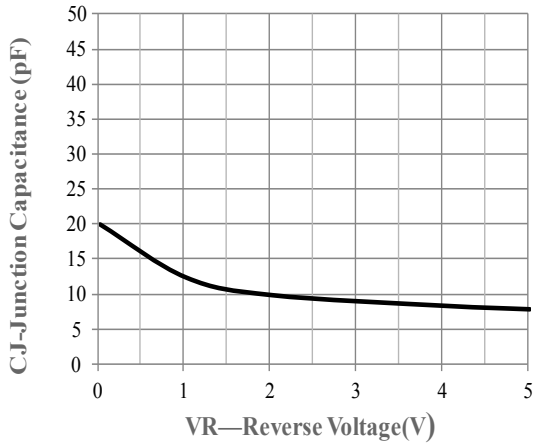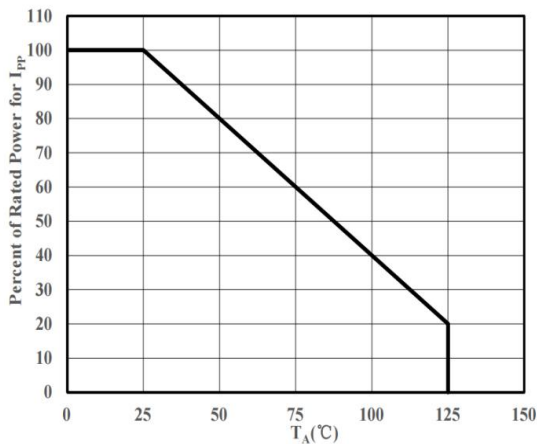
Junction Capacitance vs. Reverse Voltage
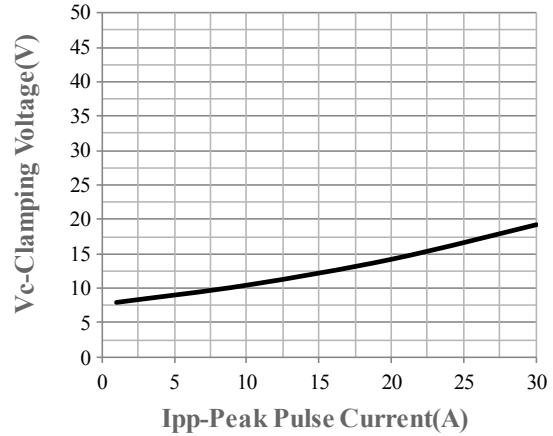
Clamping Voltage vs. Peak Pulse Current
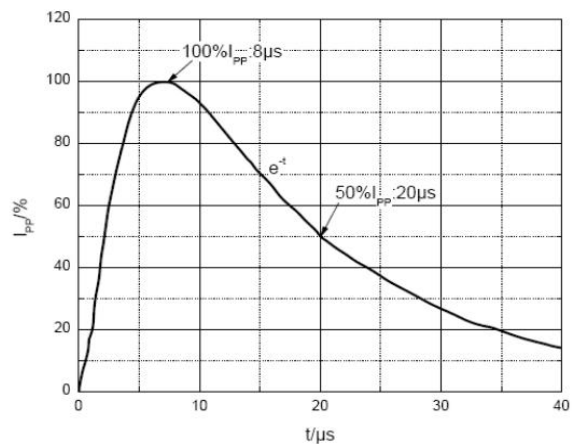
Peak Pulse Power vs. Pulse Time

ESD pulse waveform according to IEC61000-4-2

Power Derating Curve

8/20μs pulse waveform according to IEC 61000-4-5

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