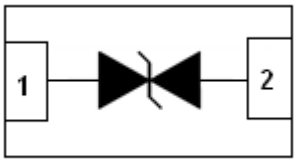
ASD05MA

Bidirectional TVS Diode for ESD Protection

FEATURES:

- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 5.0V
- ✧ ROHS compliant
- ✧ Compliant to Halogen - free

DFN0603



PIN Configuration

MAIN APPLICATIONS

- ✧ Cell Phone Handsets and Accessories
- ✧ Personal Digital Assistants (PDA's)
- ✧ Notebooks, Desktops, and Servers
- ✧ Portable Instrumentation
- ✧ Pagers
- ✧ Microprocessor based equipment

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±20kV (air), ±15kV (contact)
- ✧ IEC61000-4-5 (Lightning) 8A (8/20μs)

MECHANICAL CHARACTERISTICS

- ✧ Package :DFN0603
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Lead Finish : Lead Free
- ✧ Marking Code：AI / A5.

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	℃
Operating junction temperature range	T_j	-55 to +125	℃
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 20 +/- 15	kV

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ELECTRICAL CHARACTERISTICS (T_A=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_R				5.0	V
Reverse Breakdown Voltage	V_{BR}	IT = 1mA	5.6			V
Reverse Leakage Current	I_R	V_R = 5V			0.5	μA
Peak Pulse Current	Ipp	t p =8/20μs			8	A
Clamping Voltage	V_C	I_{PP} = 1A, tp =8/20μs			7.5	V
		I_{PP} = 8A, tp =8/20μs			12.5	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		15	22	pF

Typical Performance Characteristics (T_A=25ºC, unless otherwise noted)

FIG1：Power rating derating curve

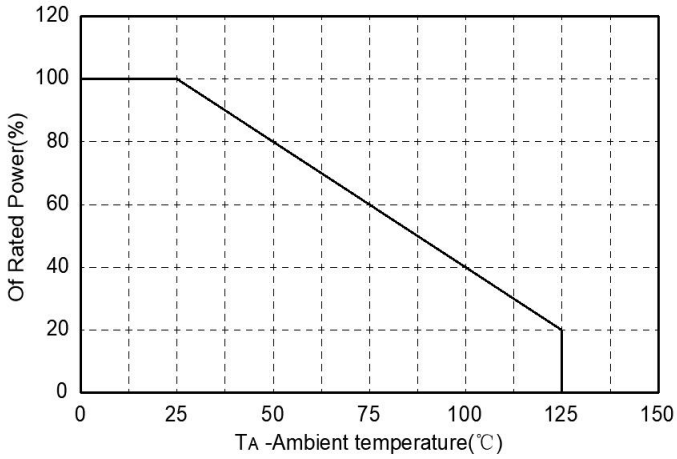


FIG2： pulse Waveform

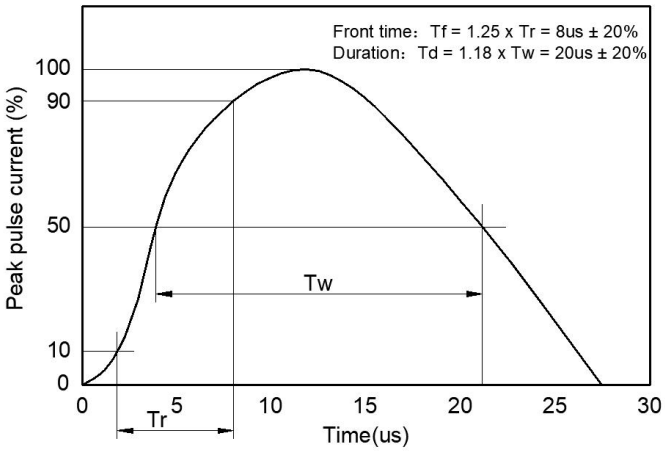


FIG3：Capacitance between teminals charateristics

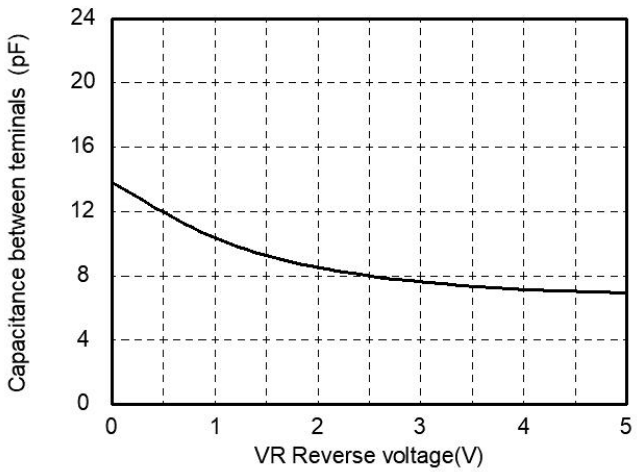
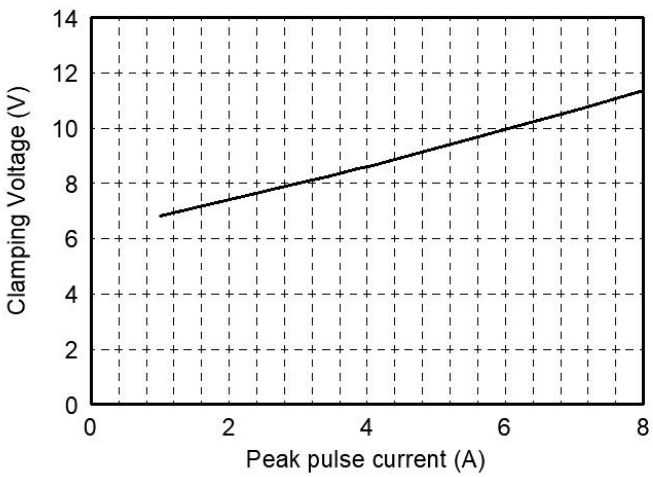
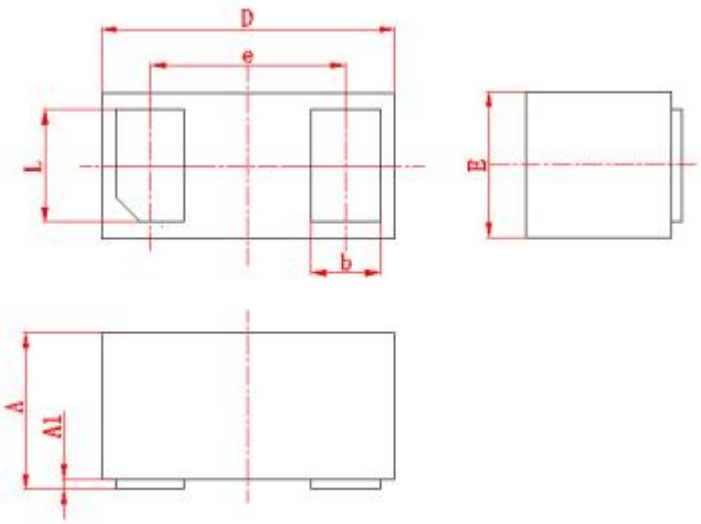


FIG4: Clamping Voltage vs. Peak Pulse Current



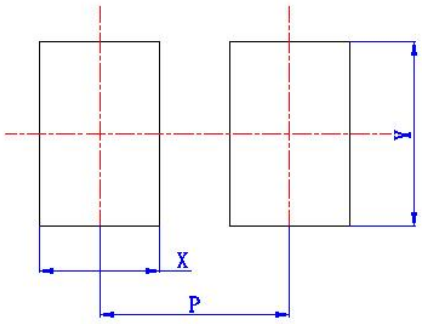
PACKAGE MECHANICAL DATA

DFN0603



Symbol	Dimension in Millimeters	
	min.	max.
A	0.27	0.37
A1	0	0.05
D	0.55	0.65
E	0.25	0.35
e	(0.40)	
b	0.07	0.19
L	0.18	0.30

SUGGESTED LAND PATTERN



Symbol	Dimension in Millimeters
	typ.
X	(0.32)
Y	(0.40)
P	(0.47)