Surface Mount Transient Voltage Suppressor Diode

Features

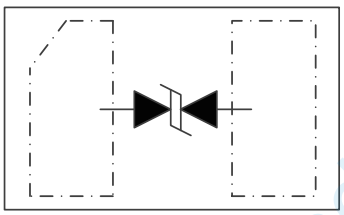
- ✧ Bi-directional ESD protection of one line
- ✧ Solid-state silicon-avalanche technology
- ✧ Working Voltage: 5.0V
- ✧ Peak Power up to 48 Watts @ 8 x 20μs Pulse
- ✧ Low Leakage current
- ✧ Response Time is Typically < 1 ns
- ✧ IEC 61000-4-2 (ESD) ±15kV (air), ±15kV (contact)
- ✧ IEC 61000-4-4 (EFT) 40A (5/50ns)

Applications

- ✧ Cellular Handsets & Accessories
- ✧ Portable devices
- ✧ Computers and Peripherals
- ✧ Notebook

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch
- ✧ RoHS/WEEE Compliant



Circuit Diagram



DFN0603

Absolute Maximum Rating at T_A = 25 °C, unless otherwise specified

Rating	Symbol	Value	Units
Peak Pulse Power (t_p =8/20μs)	P_{PP}	48	Watts
Peak Pulse Current (t_p =8/20μs) (note1)	I_{pp}	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±15 ±15	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 150	℃

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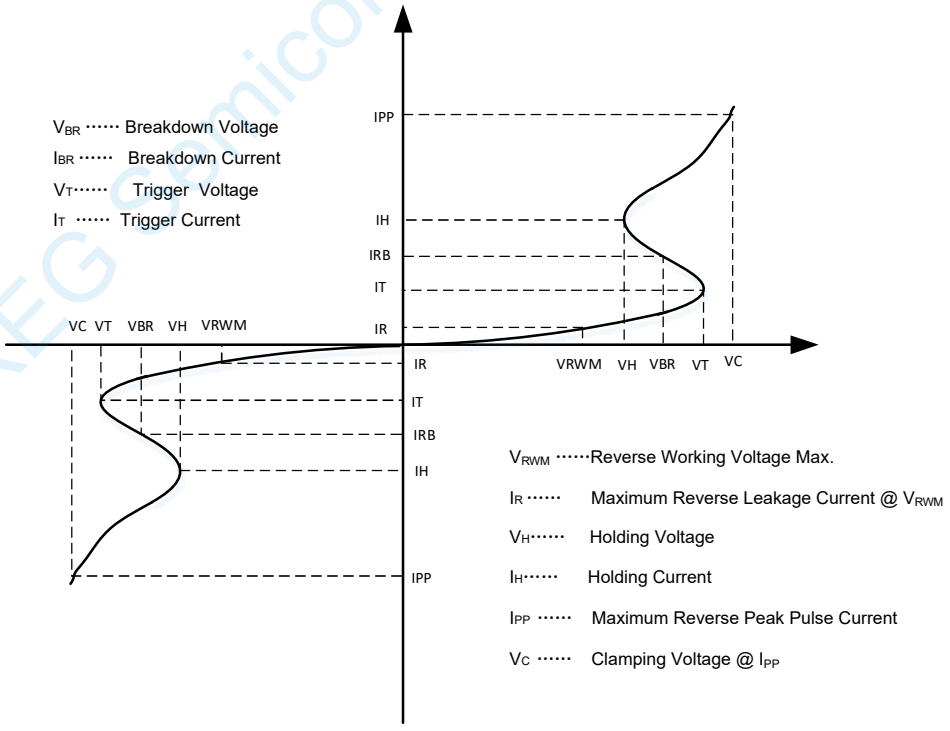
Electrical Characteristics at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typical	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0	8.0		V
Reverse Leakage Current	I_R	V_{RWM}=5.0V, T=25℃			0.1	μA
Peak Pulse Current	I_{PP}	tp =8/20μs			4.0	A
Clamping Voltage	V_C	I_{PP}=1A, tp=8/20μs		7.5		V
Clamping Voltage	V_C	I_{PP}=4.0A, tp=8/20μs		9.3	12	V
Dynamic Resistance	R_{DYN}	tp=0.2/100ns		0.52		Ω
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		0.40	0.50	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
1. All parameters specified at T_A = 25°C unless otherwise noted.
2. These parameters are guaranteed by design and characterization.
3. Standard IEC 61000−4−2 with $C_{Discharge}$ = 150 pF, $R_{Discharge}$ = 330 Ω

Electrical Parameters at T_A = 25 °C, unless otherwise specified



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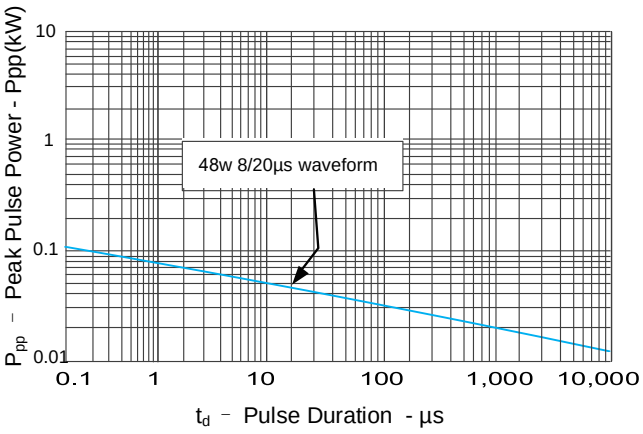
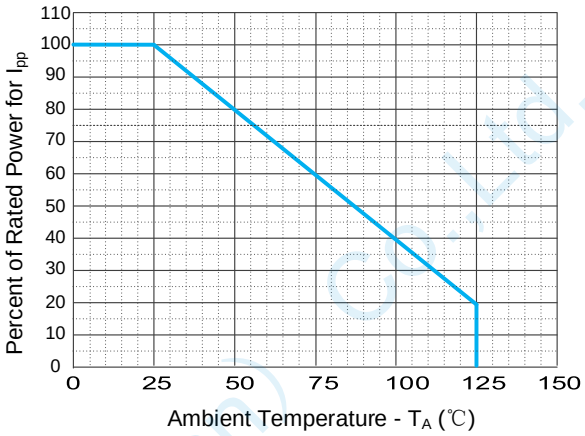
Typical Characteristics at T_A = 25 °C, unless otherwise specified

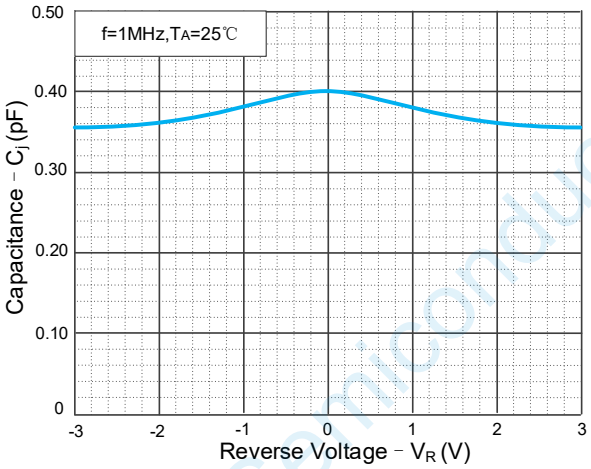
Non-repetitive Peak Pulse Power vs. Pulse Time



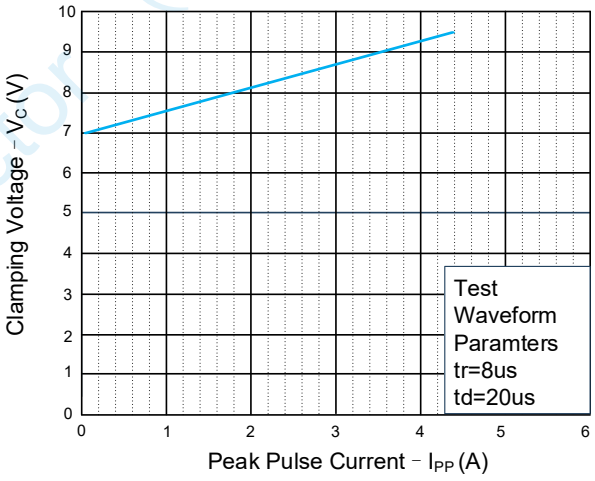
Power derating vs. Ambient temperature



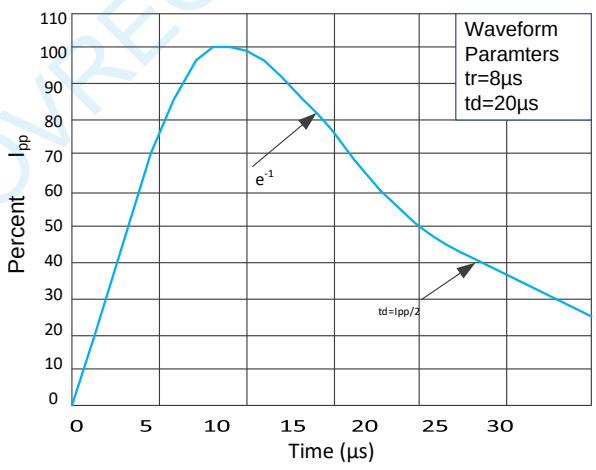
Capacitance vs. Reverse Voltage



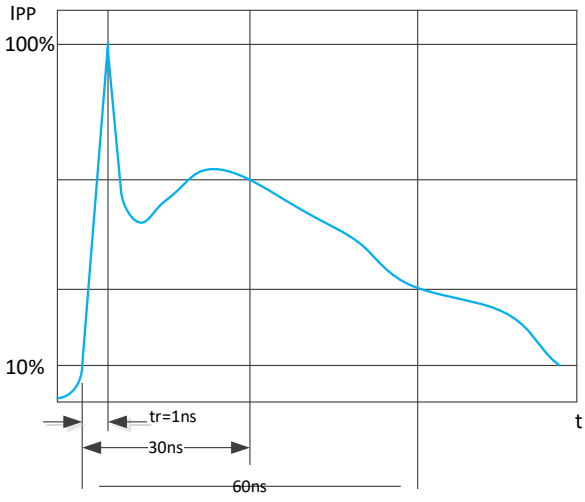
Reverse Clamping Voltage vs. Peak Pulse Current



8/20uS Pulse Waveform



IEC61000-4-2 +8kV Pulse Waveform



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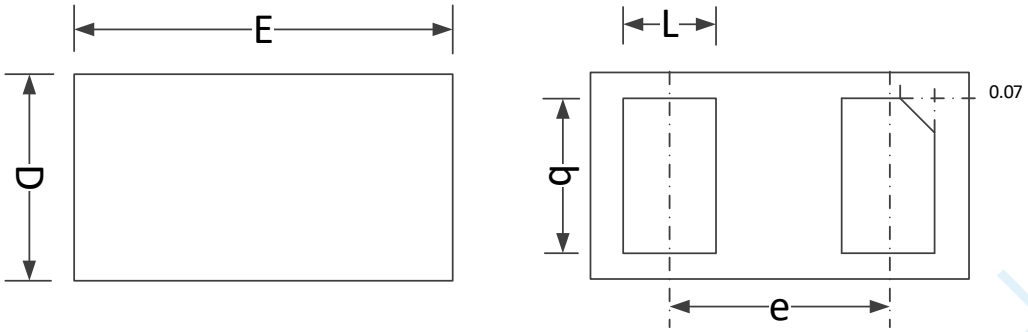
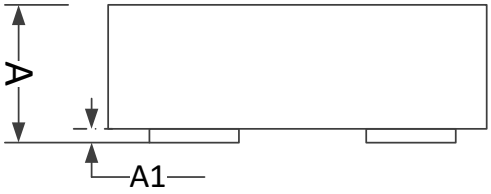
Package Information



TOP VIEW

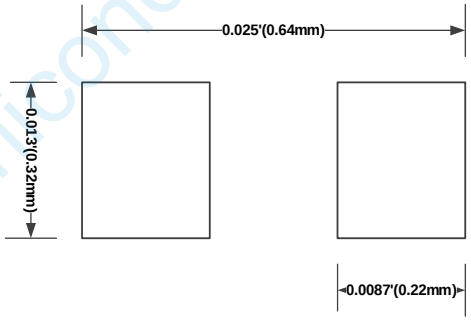
BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN0603		
REF.	MIN.	NOM.	MAX.
A	0.26	0.30	0.34
A1	0.00	0.02	0.05
b	0.20	0.25	0.30
L	0.13	0.18	0.23
e	0.40BSC		
D	0.25	0.30	0.35
E	0.55	0.60	0.65

Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVEL502A1B	GREEN	T/R	7 inch	10k/reel	10reel= 100k/box	4boxes=400k/carton

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