PRODUCT DATA SHEET

To learn more about JGSEMI, please visit our website at

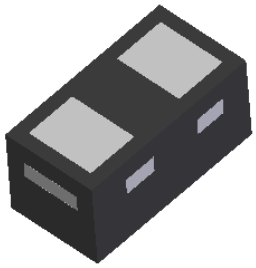
Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

PESD3V3MS

LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features

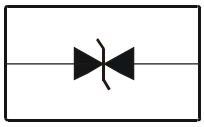
- Ultra-Small, Low Profile Leadless Surface Mount Package (0.6 x 0.3 x 0.3mm)
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±25kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals



DFN0603

Mechanical Data

- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish –Matte Tin over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.0002 grams (Approximate)



Device Schematic

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	35	W	8/20μs, Per Fig. 3
Peak Pulse Current	I_{PP}	5	A	8/20μs, Per Fig. 3
ESD Protection – Contact Discharge	$V_{ESD\_Contact}$	±25	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V_{ESD_Air}	±30	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P_D	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	—	—	3.3	V	—
Channel Leakage Current (Note 6)	I_{RM}	—	10	100	nA	V_{RWM} = 3.3V
Clamping Voltage, Positive Transients	V_{CL}	— —	4.5 5.8	5.4 7.0	V	I_{PP} = 1A, t_P = 8/20μs I_{PP} = 5A, t_P = 8/20μs
Breakdown Voltage	V_{BR}	3.8	—	6.5	V	I_R = 1mA
Differential Resistance	R_{DIF}	—	0.3	—	Ω	I_R = 1A
Channel Input Capacitance	C_T	—	10	13	pF	V_R = 0V, f = 1MHz

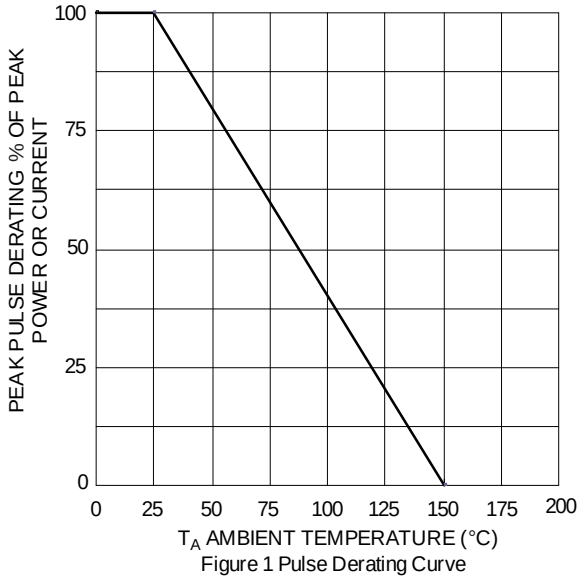


Figure 1 Pulse Derating Curve

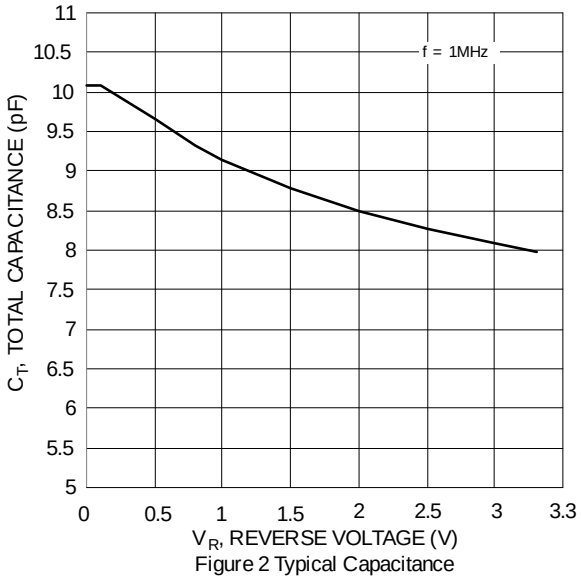


Figure 2 Typical Capacitance

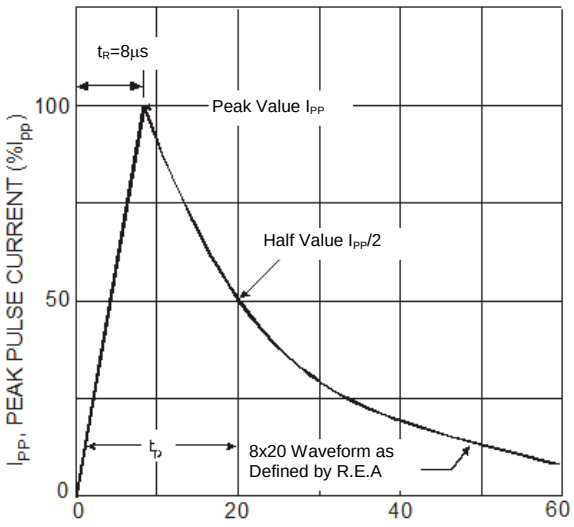


Figure 3 Pulse Waveform

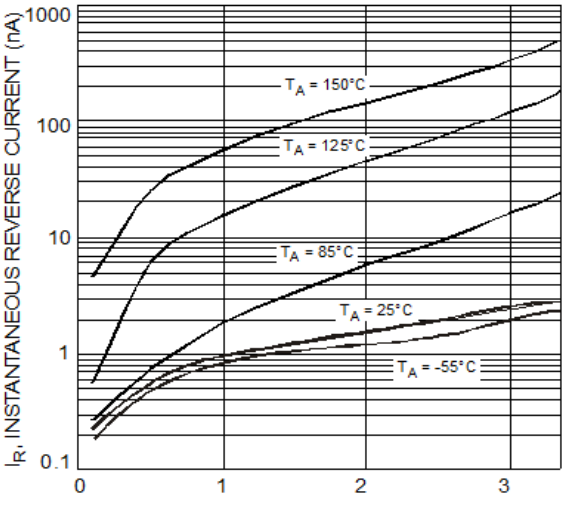


Figure 4 Typical Reverse Characteristics

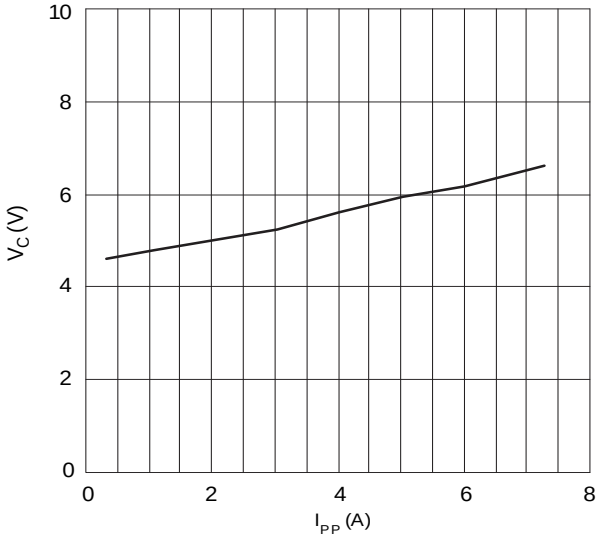


Figure 5 Typical Peak Clamping Voltage V_C vs. Peak Pulse Current I_{PP}

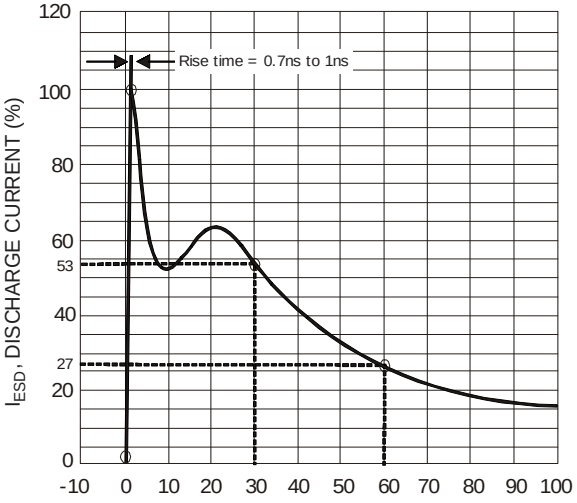


Figure 6 ESD Discharge Current Wave Form IEC 6100-4-2 (330 Ω/150pF)

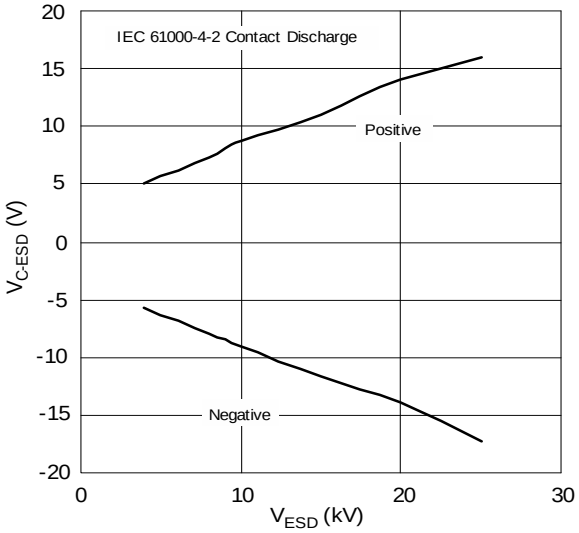


Figure 7 Typical Clamping Voltage vs. Contact Discharge Voltage

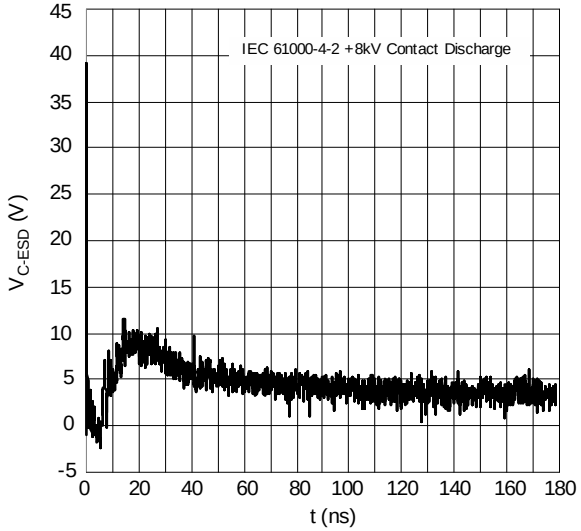
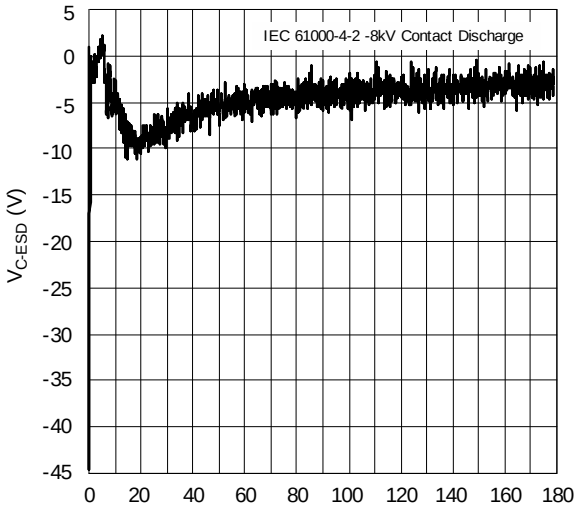


Figure 8 Typical Clamping Performance @ 8kV Contact Discharge



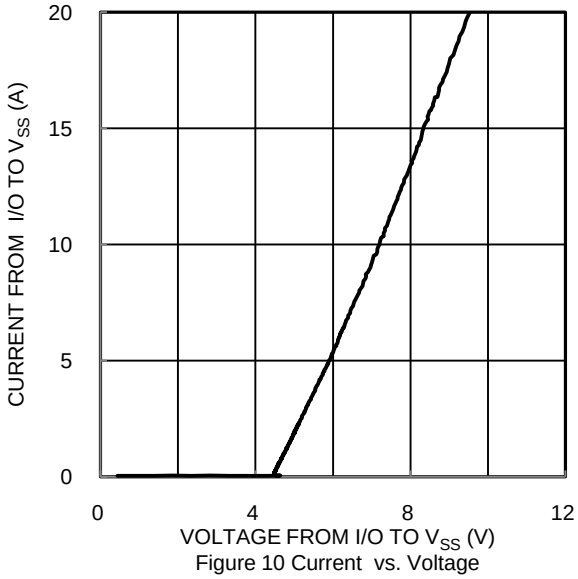
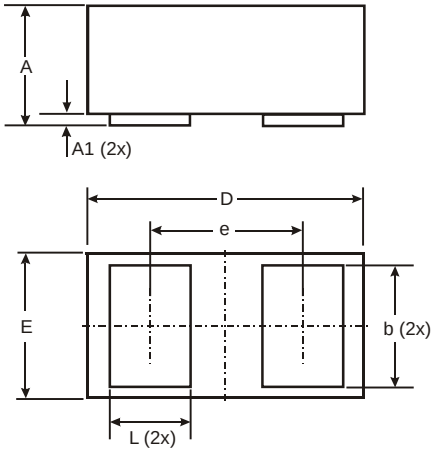


Figure 10 Current vs. Voltage

Package Outline Dimensions



X3-DFN0603-2			
Dim	**Min**	**Max**	**Typ**
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

Attention

1, Any and all JGSEMI products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, orother applic ations whose failure can be reasonably expected to result in serious physical or material damage. Consult with your JGSEMI representative nearest you before using any JGSEMI products described or contained herein in such applicati ons.

2,JGSEMI assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all JGSEMI products described or contained herein.

3, Specifications of any and all JGSEMI products described or contained herein stipulate the performance, characteri stics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer’s products or equipment. To ver ify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate an d test devices mounted in the customer’s products or equipment.

4,In the event that any or all JGSEMI products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported wit hout obtaining the export license from the authorities concerned in accordance with the above law.

6, Any and all information described or contained herein are subject to change without notice due to product technology improvement,etc. When designing equipment, refer to the "Delivery Specification" for the JGSEMI produ ct that you Intend to use.