

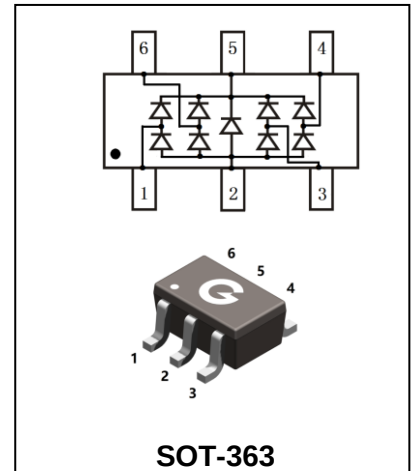
Low Capacitance ESD Protector Array

GESDV5V0A

FEATURES

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): ± 20 kV (air), ± 15 kV (contact)
 - IEC 61000-4-4 (EFT): ± 40 A (5/50ns)
- Protection for four high-speed I/O lines
- Working voltage: $V_{RWM} = 5V$

HF



APPLICATIONS

- USB power & data line protection
- NB & DT PCs, servers, video display cards
- Monitors, flat panel displays
- Portable instrumentation
- Set top box

ORDERING INFORMATION

Part Number	Marking	Package
GESDV5V0A	B54	SOT-363

MAXIMUM RATING (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	65	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	5	A
IEC 61000-4-2; ESD (Air)	V_{ESD-A}	± 20	kV
IEC 61000-4-2; ESD (Contact)	V_{ESD-C}	± 15	kV
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	280	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	170	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	220	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper

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ELECTRICAL CHARACTERISTICS (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Stand-off Voltage	V_{RWM}			5	V	
Reverse Breakdown Voltage	$V_{(BR)}$	6		9	V	$I_R = 1\text{mA}$
Clamping Voltage (I/O pin to GND)	V_C			9	V	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$
Clamping Voltage (I/O pin to GND)				13		$I_{PP} = 5\text{A}$, $t_p = 8/20\mu\text{s}$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 5\text{V}$
Junction Capacitance (I/O pin to I/O)	C_{J1}		0.3	0.4	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$
Junction Capacitance (I/O pin to GND)	C_{J2}		0.6	0.8		$V_R = 0\text{V}$, $f = 1\text{MHz}$

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TYPICAL CHARACTERISTICS (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

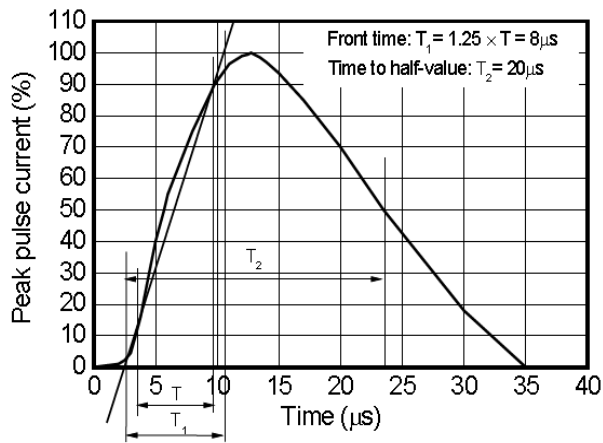


Fig 1 8/20 μs waveform per IEC61000-4-5

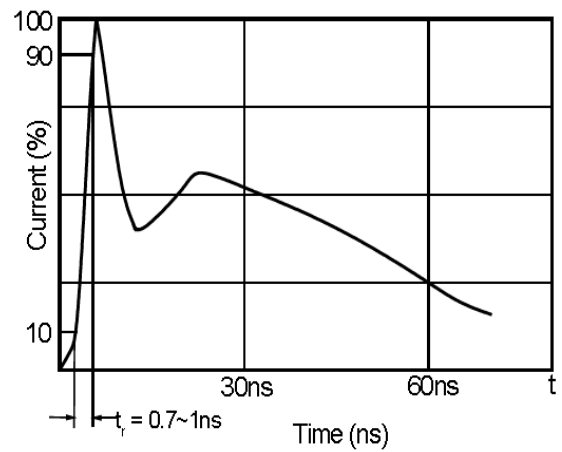


Fig 2 ESD pulse waveform according to IEC61000-4-2

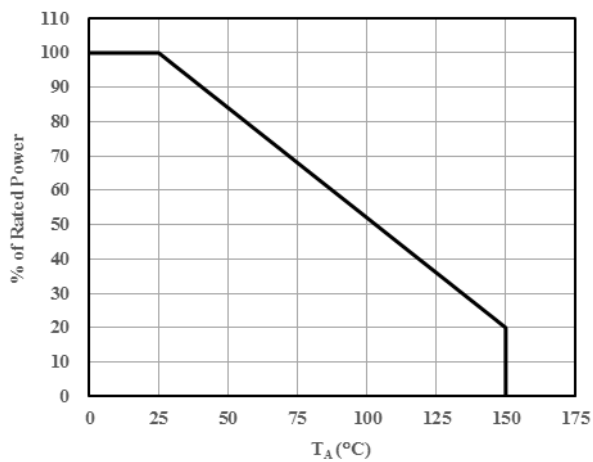


Fig 3 Power Derating Curve

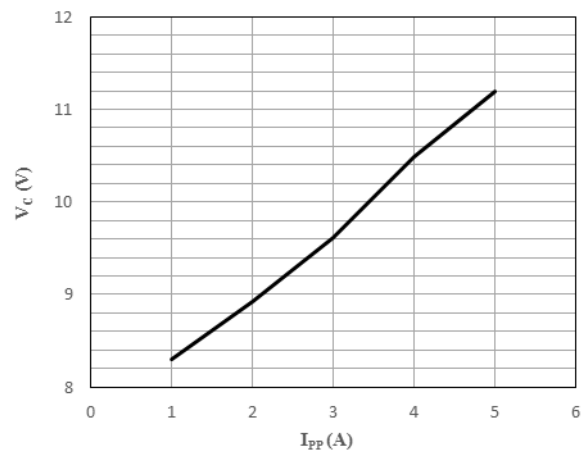


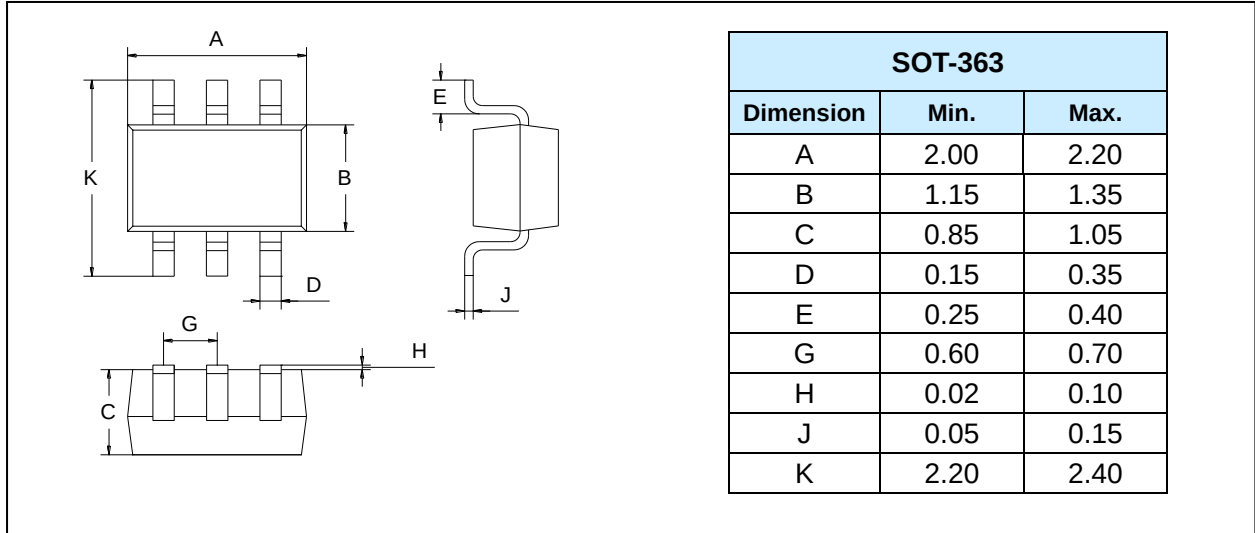
Fig 4 Clamping Voltage vs. Peak Pulse Current

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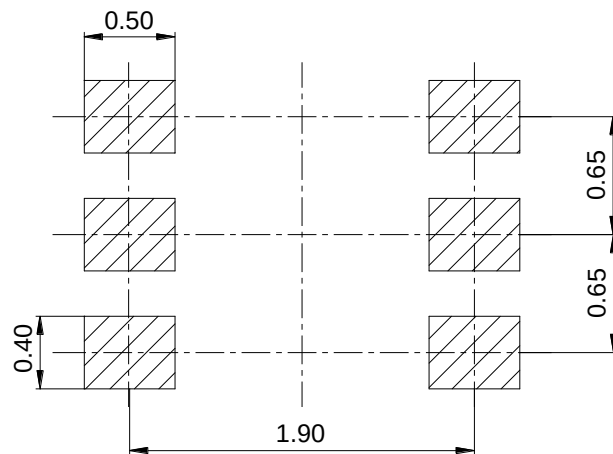
GESDV5V0A

PACKAGE OUTLINE (Unit: mm)

Plastic surface mounted package



MOUNTING PAD LAYOUT (Unit: mm)



PACKAGE INFORMATION

Part Number	Package	Shipping Quantity
GESDV5V0A	SOT-363	3000 pcs / Tape & Reel

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CHANGE RECORD

Revision	Date	Modification
Updated	2019-11-22	General edit to improve legibility.
	2019-12-13	$I_{PP} = 4A$ 改成 $I_{PP} = 5A$
	2019-12-24	$P_{PP} = 150W$ 改成 $P_{PP} = 100W$, $V_C @ I_{PP} = 3A$ 改成 $V_C @ I_{PP} = 5A$
	2020-01-18	更新曲线图
1.0	2024-04-17	TX101J,增加热阻, 更新 VC-IPP 曲线