JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

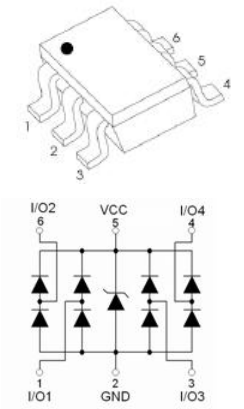
SOT-363 Plastic-Encapsulate Diodes

ESDUEG5V0Q4 Uni-direction ESD Protection Array

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.

SOT-363



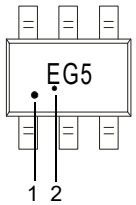
FEATURES

- Uni-directional ESD protection of four lines
- Low capacitance: 0.8pF(max)
- Low reverse stand−off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Excellent package:2.10mm×1.25mm×0.96mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

APPLICATIONS

- Computers and peripherals
- Audio and video equipment
- High speed data lines
- Cell phone
- MID
- PDA
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Other electronics equipments communication systems

MARKING



Front side

EG5=Device code
Solid dot1 = Pin1 indicator
Solid dot2 = Green molding compound device, if none, the normal device

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD}(1)	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±25	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power (I/O to GND)		P_{PP}(2)	90	W
Peak Pulse Current (I/O to GND)		I_{PP}(2)	4.5	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Operation Junction and Storage Temperature Range		T_J,T_{stg}	-55 ~ +150	℃

(1).Device stressed with ten non-repetitive ESD pulses, per channel (I/O to GND, V_{CC} to GND).

(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

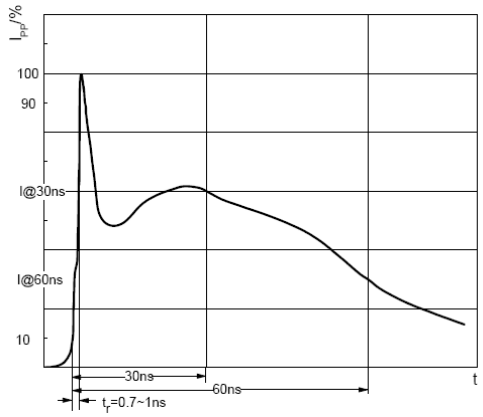
ESD standards compliance

IEC61000-4-2 Standard

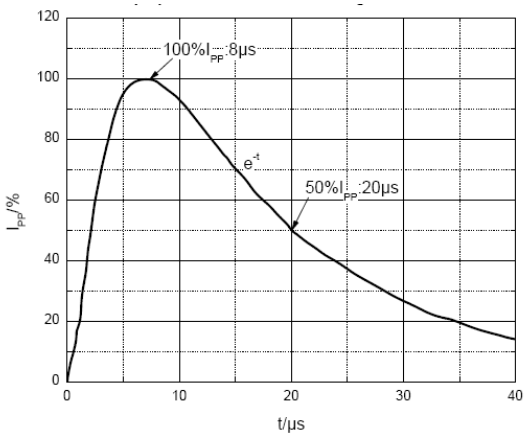
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0～249
1A 1B 1C	250～499 500～999 1000～1999
2	2000～3999
3A 3B	4000～7999 8000～15999



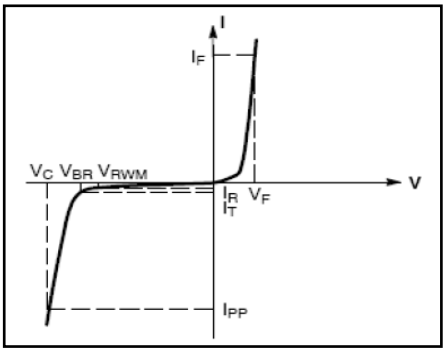
ESD pulse waveform according to IEC61000-4-2



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

ELECTRICAL PARAMETER

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage
V_F	Forward Voltage@ I_F
I_F	Forward Current



V-I characteristics for a uni-directional TVS

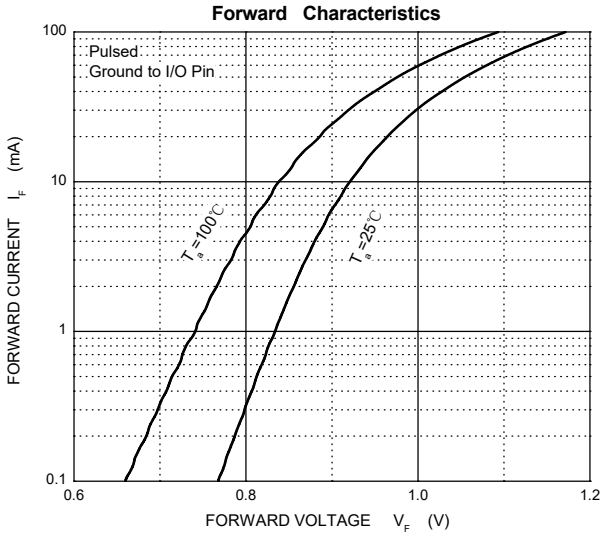
ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise specified)

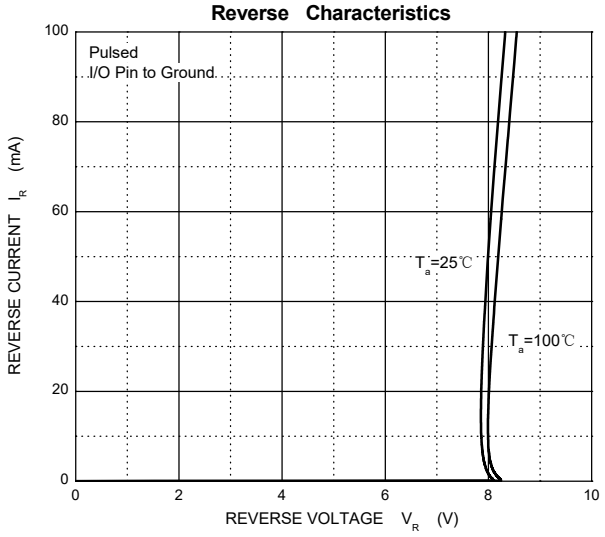
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Per channel(I/O to GND unless otherwise specified)						
Reverse stand off voltage	V_{RWM} (1)				5	V
Breakdown voltage	$V_{(BR)}$	I_T=1mA	6.5		9.4	V
		I_T=1mA (VCC to GND)	5.8		8.5	V
Reverse leakage current	I_R	V_{RWM}=5V (I/O to GND & VCC to GND)			1	μA
Forward voltage	V_F	I_F=10mA (GND to I/O & GND to VCC)	0.5		1.0	V
Clamping voltage	V_C (2)	I_{PP}=4.5A		13.5	20	V
		I_{PP}=8A (VCC to GND)		13	20	V
TLP clamping voltage	V_C	I_{TLP} =16A, Pulse Width=100ns		15		V
		I_{TLP} =16A, Pulse Width=100ns (VCC to GND)		13.5		V
Junction capacitance	C_J	V_R=0V,f=1MHz		0.45	0.8	pF
		V_R=0V,f=1MHz (I/O to I/O)		0.25	0.5	pF

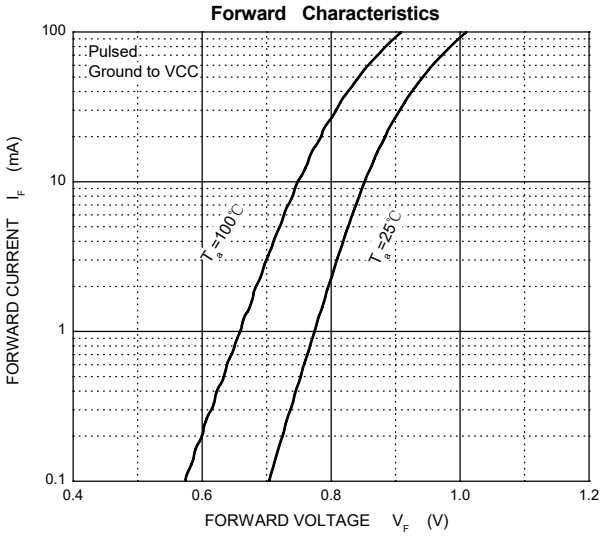
(1).Other voltages available upon request.

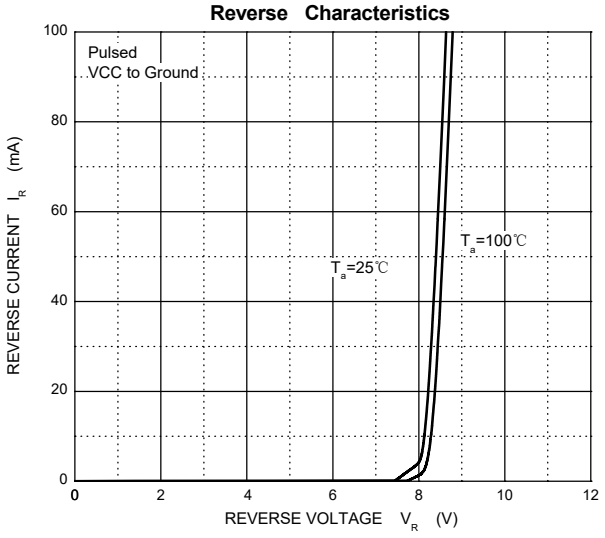
(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

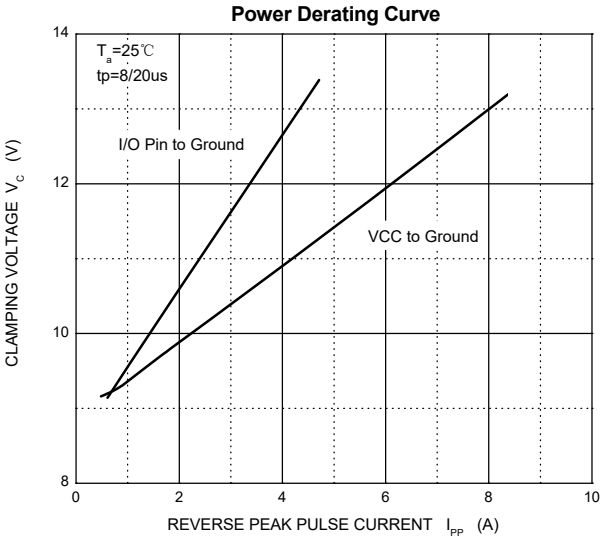
TYPICAL CHARACTERISTICS

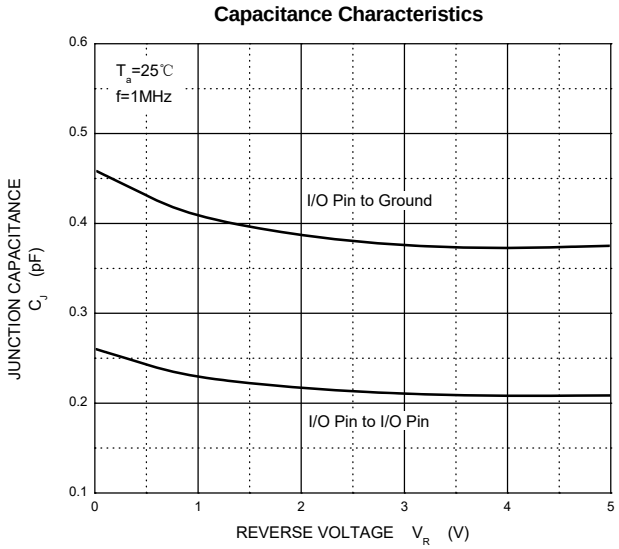












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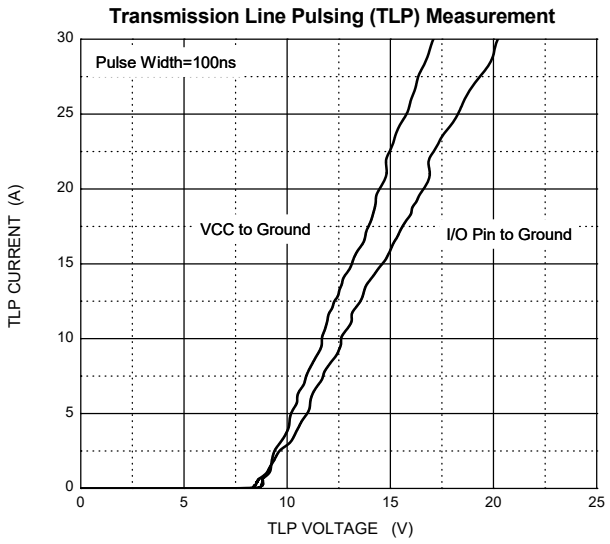
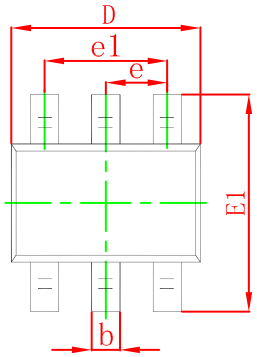
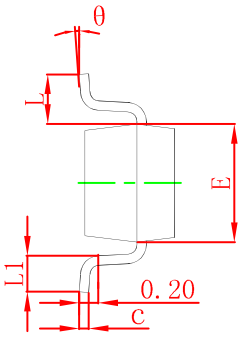
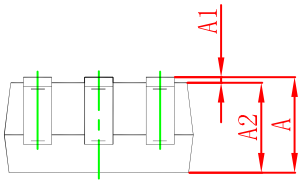


PACKAGE OUTLINE AND PAD LAYOUT INFORMATION

SOT-363 Package Outline Dimensions

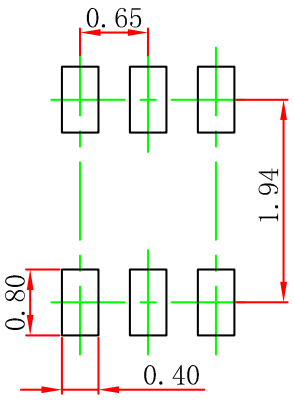






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-363 Suggested Pad Layout

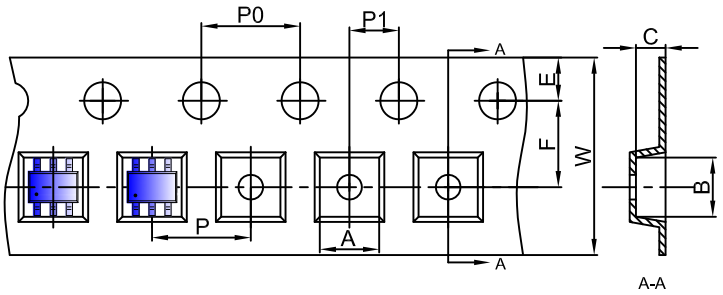


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE
JSCJ reserves the right to make modifications,enhancements,improvements,corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TAPE AND REEL INFORMATION

SOT-363 Embossed Carrier Tape

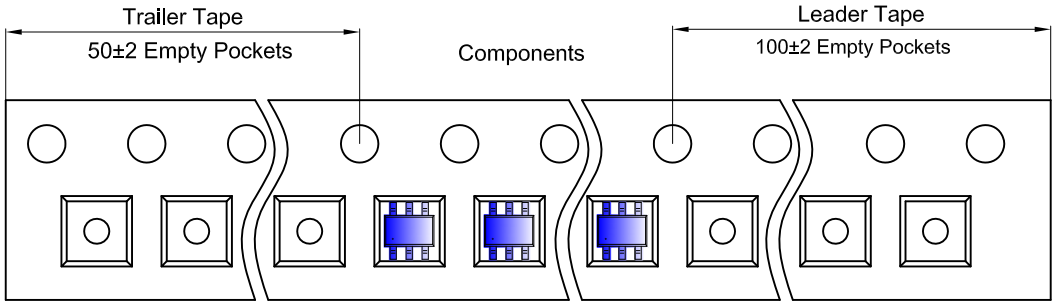


Packaging Description:

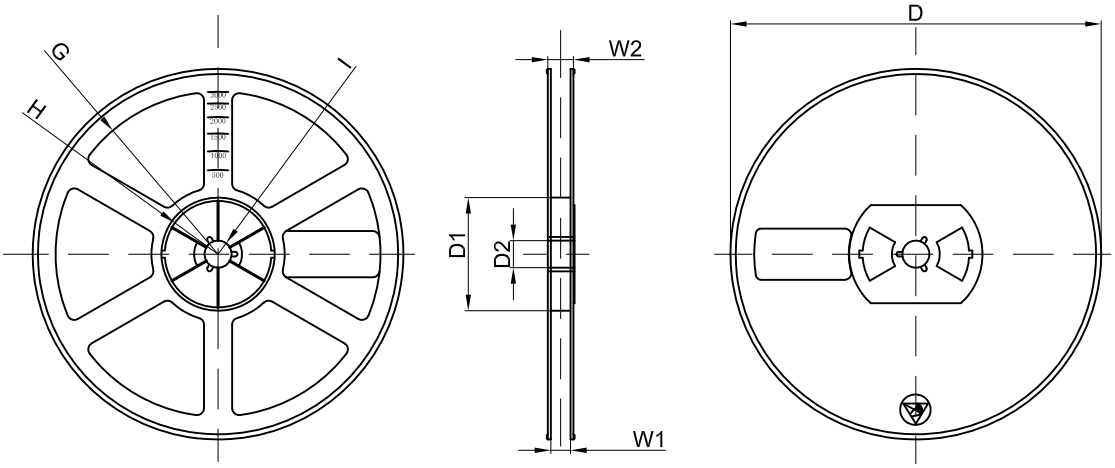
SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-363 Tape Leader and Trailer



SOT-363 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	