

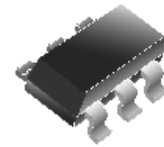
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

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 multi-layer varistors (MLV) in consumer equipment applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

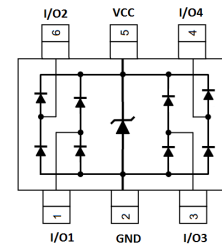
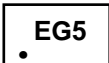
SOT-363



FEATURES

- Uni-Directional ESD Protection of Four Lines
- Low Reverse Clamping Voltage
- Low Leakage Current
- Fast Response Time
- IEC 61000-4-2 Level 4 ESD Protection
- JESD22-A114-B ESD Rating of Class 3B per Human Body Model

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-363	3K	7 inch

ORDER INFORMATION

Part Number	Type
KS05GL4-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Rating		Symbol	Value	Unit	
IEC 61000-4-2 ESD Voltage ¹	Air Contact	V _{ESD}	±25	kV	
	Contact Discharge		±25		
	JESD22-A114-B ESD Voltage ¹		Per Human Body Model		±25
			Machine Model		±0.4
Peak Pulse Power ²		P _{PP}	90	W	
Peak Pulse Current ²		I _{PP}	4.5	A	
Maximum Lead Solder Temperature @10 Second Duration		T _L	260	°C	
Operation Junction & Storage Temperature Range		T _J , T _{STG}	150, -55~150	°C	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-off Voltage	V_{RWM}	-	-	5	V	
Reverse Breakdown Voltage	V_{BR}	6.5	-	9.4	V	$I_T=1\text{mA}$
		5.8	-	8.5		$I_T=1\text{mA}, V_{CC}$ to GND
Reverse Leakage Current	I_R	-	-	1	μA	$V_{RWM}=5\text{V}$, I/O to GND & V_{CC} to GND
Forward Voltage	V_F	0.5	-	1	V	$I_F=10\text{mA}$, GND to I/O & GND to V_{CC}
Clamping Voltage ²	V_C	-	13.5	20	V	$I_{PP}=4.5\text{A}$
		-	13	20		$I_{PP}=8\text{A}, V_{CC}$ to GND
TLP Clamping Voltage @Pulse Width=100ns	V_C	-	15	-	V	$I_{TLP}=16\text{A}$
		-	13.5	-		$I_{TLP}=16\text{A}, V_{CC}$ to GND
Junction Capacitance	C_J	-	0.45	0.8	pF	$V_R=0$, $f=1\text{MHz}$
		-	0.25	0.5		$V_R=0$, $f=1\text{MHz}$, I/O to I/O

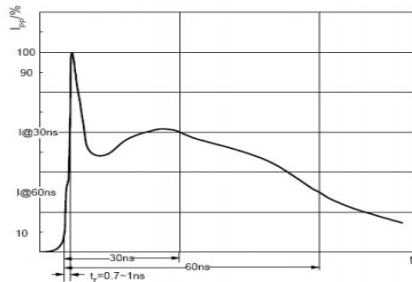
Notes:

1. Device stressed with ten non-repetitive ESD pulses, per channel (I/O to GND, V_{CC} to GND).
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

ESD STANDARDS COMPLIANCE

IEC61000-4-2 Standard

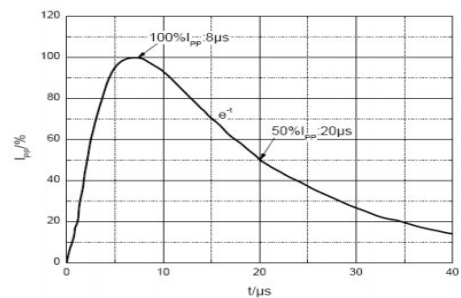
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15



ESD pulse waveform according to IEC61000-4-2

JESD22-A114-B Standard

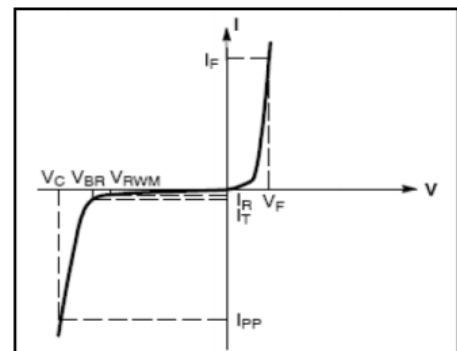
ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999



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

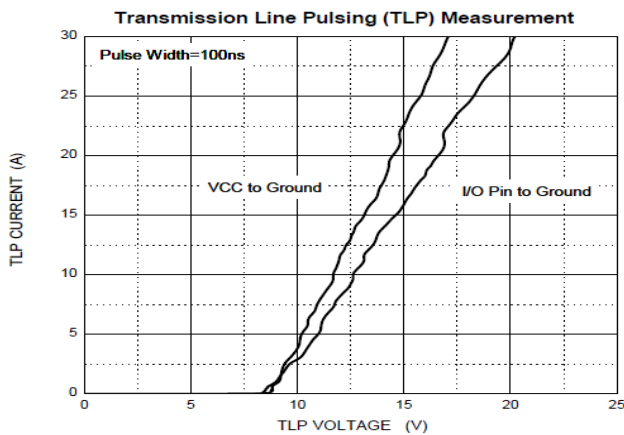
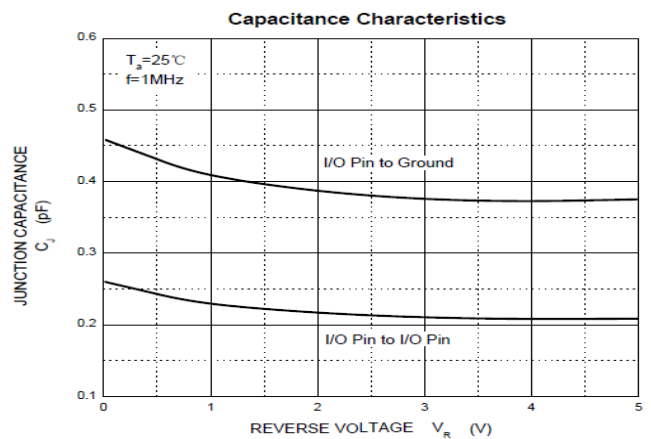
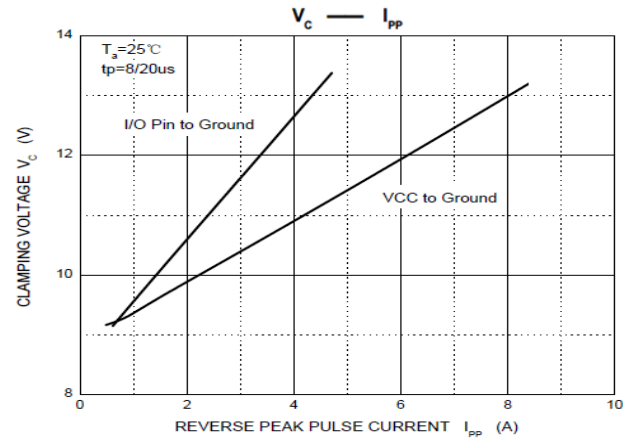
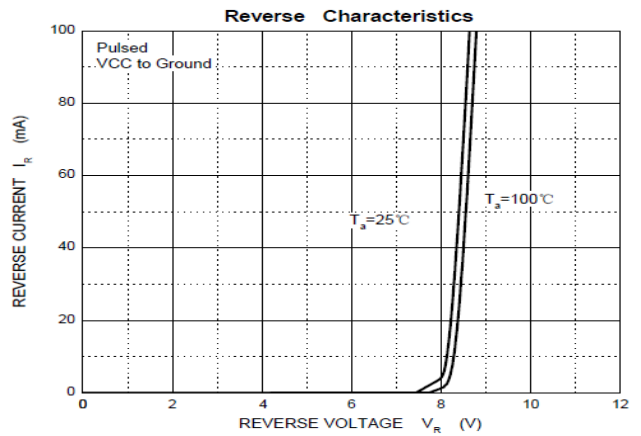
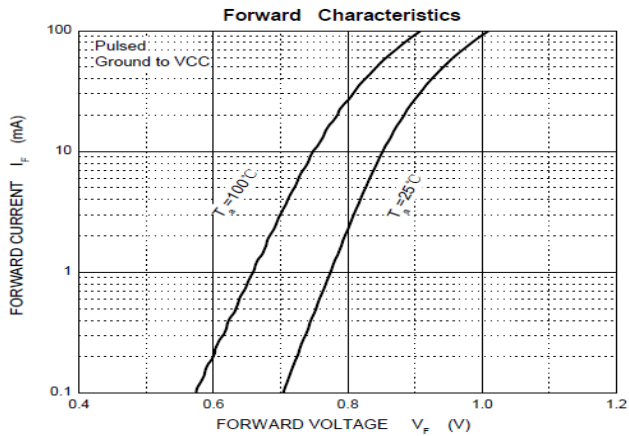
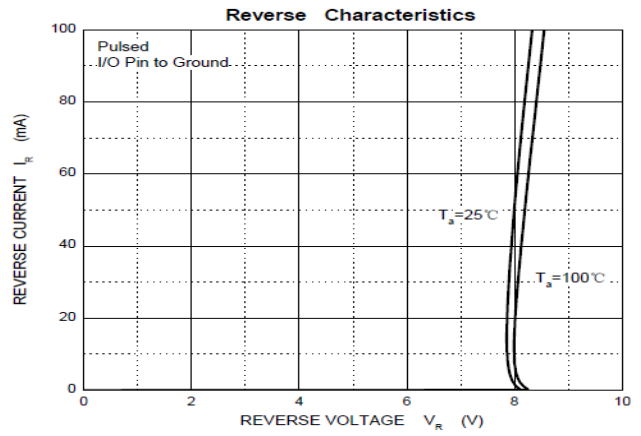
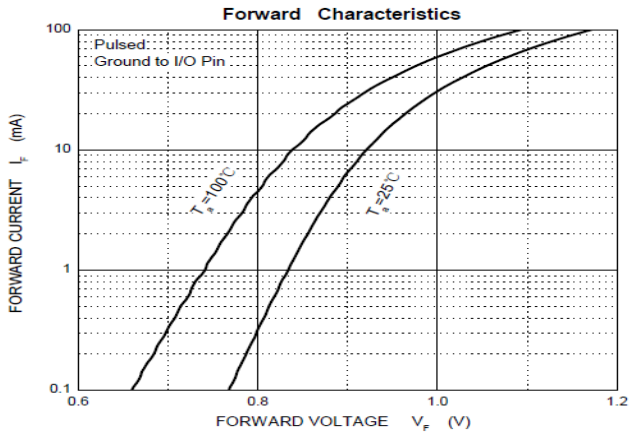
ELECTRICAL PARAMETER

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



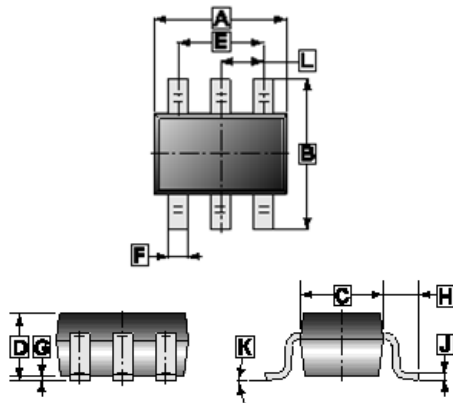
V-I characteristics for a uni-directional TVS

RATINGS AND CHARACTERISTICS CURVES



PACKAGE OUTLINE DIMENSIONS

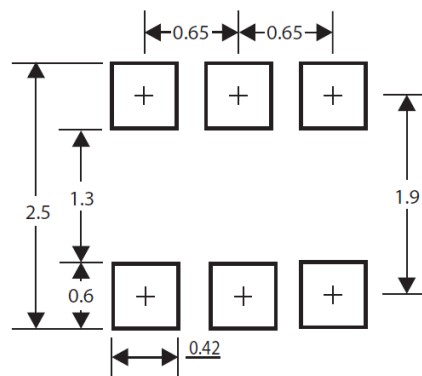
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REF.	Millimeter	
	Min.	Max.
A	1.80	2.20
B	1.80	2.45
C	1.15	1.35
D	0.70	1.10
E	1.30 REF.	
F	0.10	0.35
G	0.10 REF.	
H	0.525 REF.	
J	0.05	0.25
K	8°	
L	0.65 TYP.	

MOUNTING PAD LAYOUT

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*Dimensions in millimeters