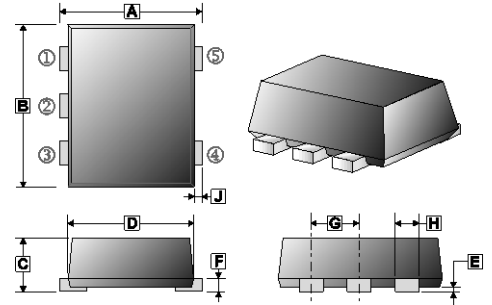


RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

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 multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

SOT-553

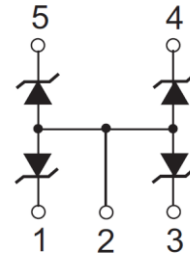
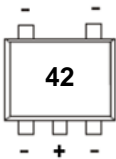


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	F	0.09	0.16
B	1.50	1.70	G	0.45	0.55
C	0.525	0.60	H	0.17	0.27
D	1.10	1.30	J	0.10	0.30
E	-	0.05			

FEATURES

- Uni-directional ESD protection of four lines
- Low reverse stand-off voltage
- Low leakage current
- Low reverse clamping voltage
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-553	3K	7 inch

ORDER INFORMATION

Part Number	Type
KS05L4	Lead (Pb)-free
KS05L4-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	V _{ESD}	Air model	±25
		Contact model	±25
		Per human body model	±16
		Machine model	±0.4
Peak Pulsed Power ²	P _{PP}	60	W
Peak Pulsed Current ²	I _{PP}	5	A
Maximum Lead Solder Temperature @10 Second Duration	T _L	260	°C
Junction & Storage Temperature Range	T _J , T _{STG}	150, -55~150	

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	
Breakdown Voltage	$V_{(BR)}$	6	-	7.2	V	$I_T=1\text{mA}$
Clamping Voltage ²	V_C	-	-	12	V	$I_{PP}=5\text{A}$
Forward Voltage	V_F	-	-	0.9	V	$I_F=10\text{mA}$
Reverse Leakage Current	I_R	-	-	5	μA	$V_{RWM}=5\text{V}$
Junction Capacitance	C_J	-	30	-	pF	$V_R=0\text{V}$, $f=1\text{MHz}$

Notes:

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

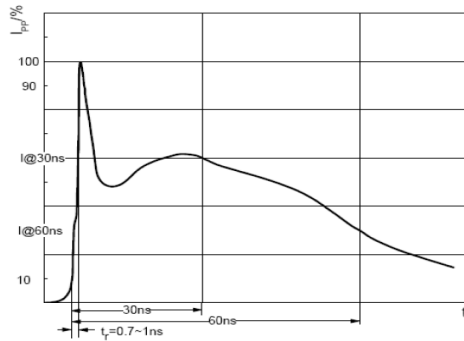
ESD STANDARDS COMPLIANCE

IEC61000-4-2 Standard

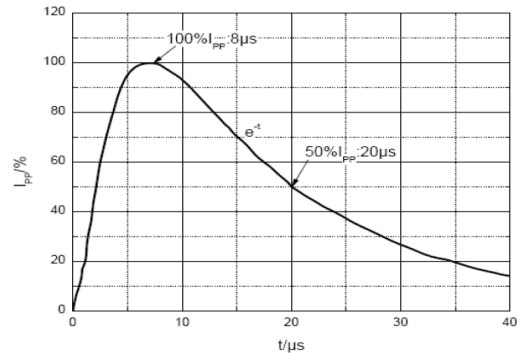
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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



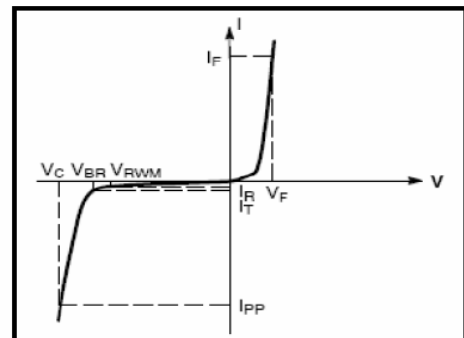
ESD pulse waveform according to IEC61000-4-2



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

ELECTRICAL PARAMETER

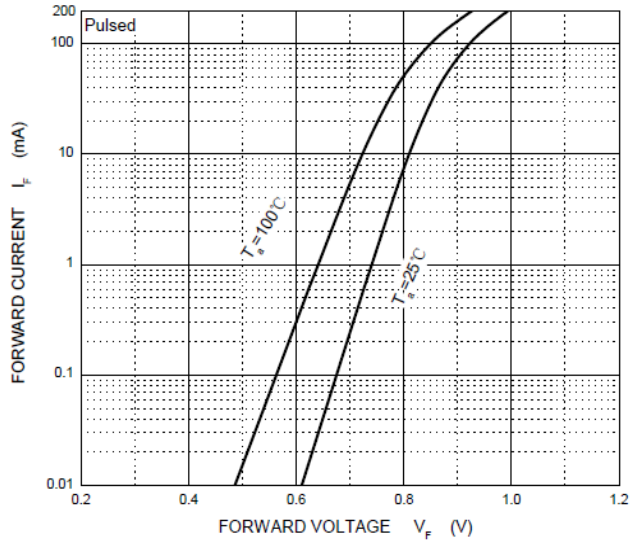
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage
V_F	Forward Voltage @ I_F
I_F	Forward Current



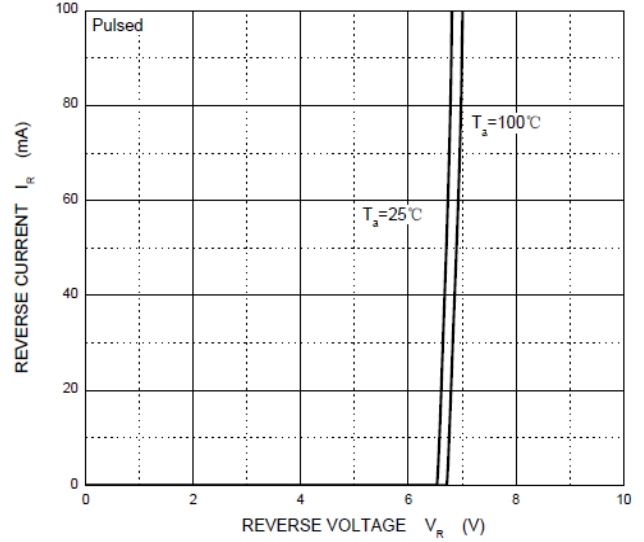
V-I characteristics for a uni-directional TVS

CHARACTERISTICS CURVES

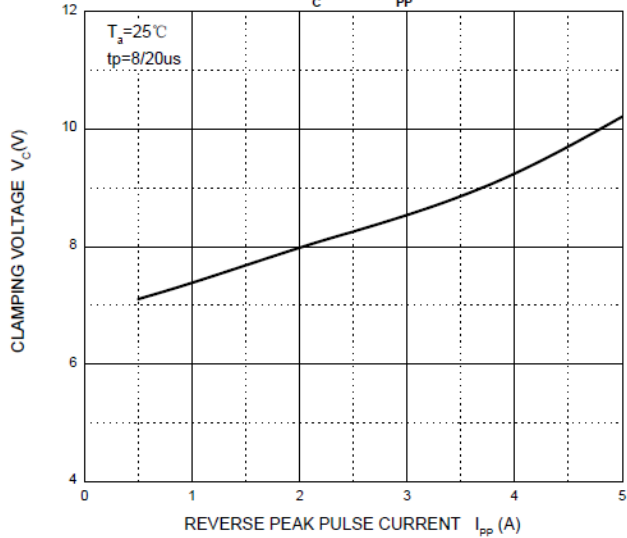
Forward Characteristics



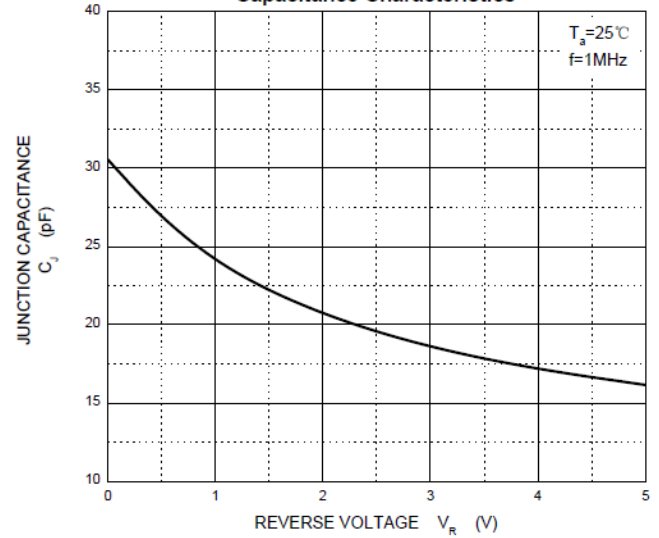
Reverse Characteristics



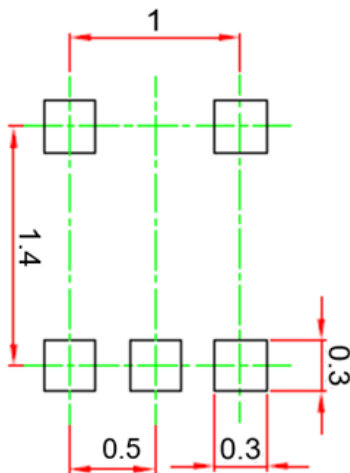
V_C --- I_{PP}



Capacitance Characteristics



Mounting Pad Layout



*Dimensions in millimeters