Elektronische Bauelemente

SQESD24A-C

6650W, 24V
Transient Voltage Suppressors
for ESD Protection (Uni-direction)

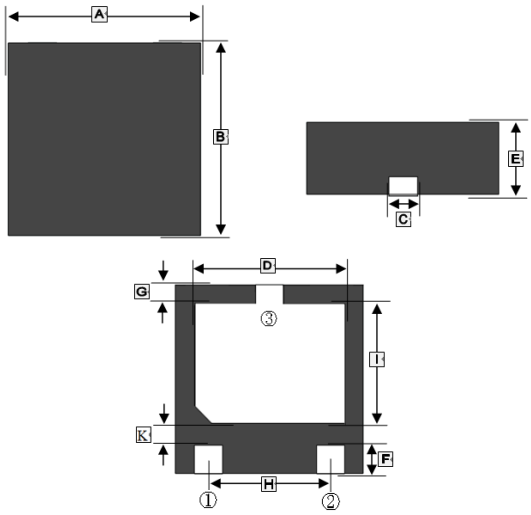
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, high level 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.

DFN2x2-3L

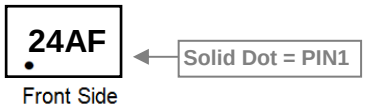


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.90	2.10	F	0.324	0.476
B	1.90	2.10	G	0.20	0.30
C	0.30 BSC.		H	1.30 BSC.	
D	1.40	1.60	I	0.90	1.15
E	0.50	0.65	K	0.20	0.45

FEATURES

- Uni-directional ESD protection of one line
- Low reverse stand−off voltage: 24V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- Peak pulse power: 6650W (IEC61000-4-5 8/20μs)
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection
- Surge protection according to IEC61000-4-5 8/20μs waveform: I_{PPM}=190A

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN2x2-3L	3K	7 inch

ORDER INFORMATION

Part Number	Type
SQESD24A-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter		Symbol	Rating	Unit
IEC 61000-4-2 ESD Voltage [1]	Air Model	V_{ESD}	±30	kV
	Contact Model		±30	
JESD22-A114-B ESD Voltage [1]	Per Human Body Model		±20	
ESD Voltage [1]	Machine Model		±0.4	
Peak Pulsed Power [2]		P_{PP}	6650	W
Peak Pulsed Current [2]		I_{PP}	190	A
Maximum Lead Solder Temperature @10Second Duration		T_L	260	℃
Junction and Storage Temperature Range		T_J, T_{STG}	150, -55~150	

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ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-off Voltage	V_{RWM}	-	-	24	V	
Breakdown Voltage	$V_{(BR)}$	25.5	-	-	V	I_T=1mA
Clamping Voltage [2]	V_C	-	35	-	V	I_{PP}=190A
Reverse Leakage Current	I_R	-	-	1	μA	V_{RWM}=24V
Junction Capacitance	C_J	-	740	-	pF	V_R=0V, f=1MHz

Notes:
1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

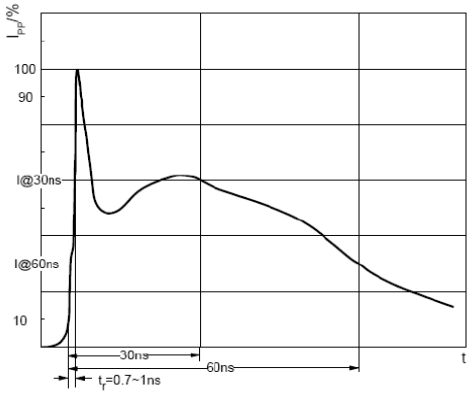
ESD STANDARDS COMPLIANCE

IEC61000-4-2 Standard

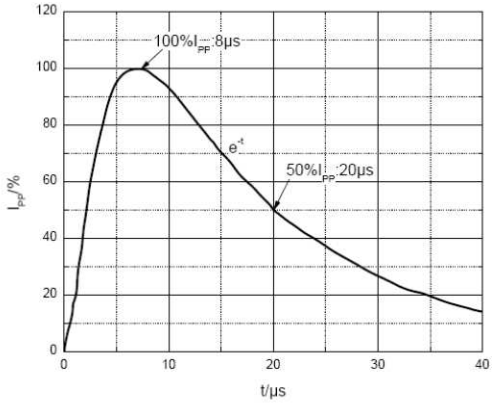
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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



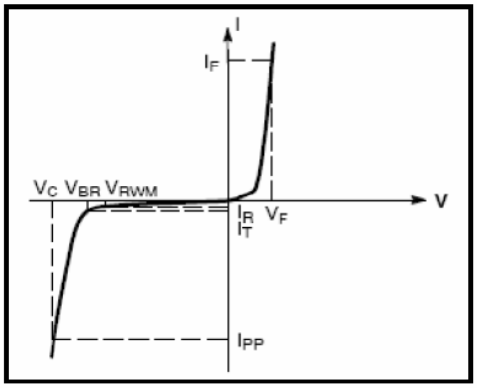
ESD pulse waveform according to IEC61000-4-2



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

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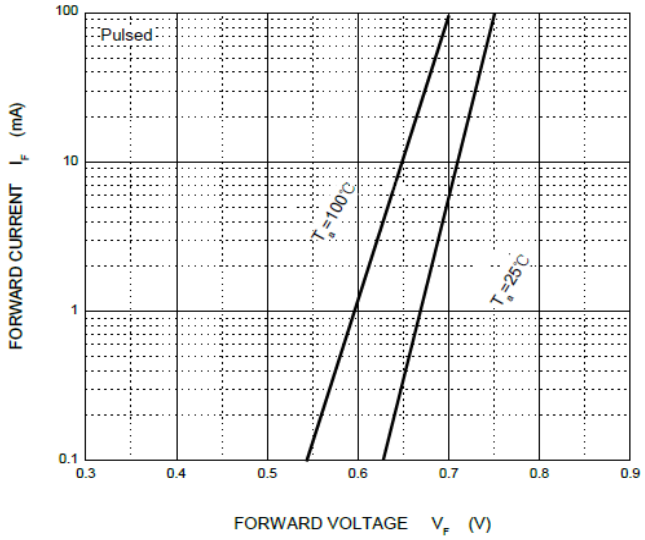
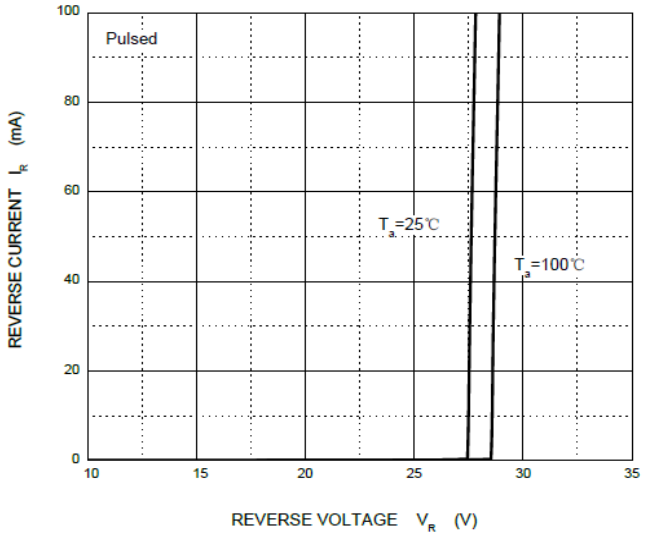
CHARACTERISTICS CURVES

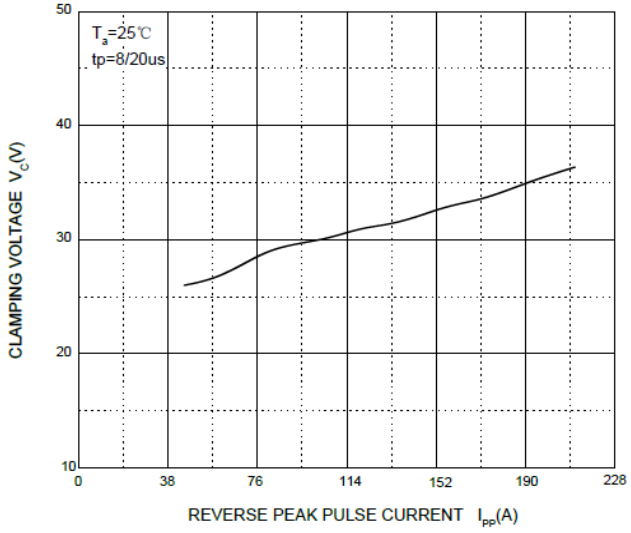
Forward Characteristics



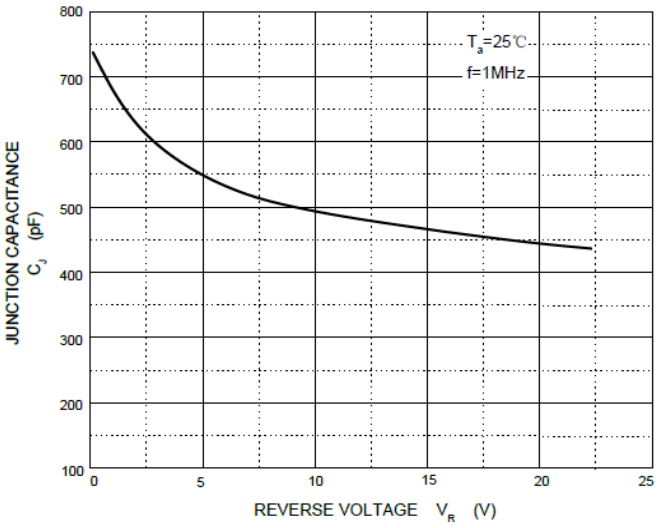
Reverse Characteristics



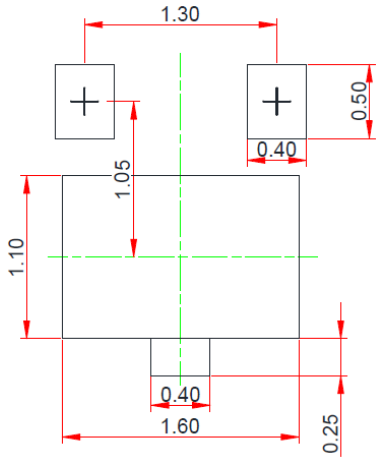
V_C —— I_{PP}



Capacitance Characteristics



Mounting Pad Layout



*Dimensions in millimeters