

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

## FEATURES

- Low Capacitance
- Low Reverse Stand-off Voltage
- Low Reverse Clamping Voltage
- Low Leakage Current
- Fast Response Time
- JESD22-A114-B ESD Rating of Class 3B Per Human Body Model
- IEC 61000-4-2 Level 4 ESD Protection

## MARKING

6R-

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

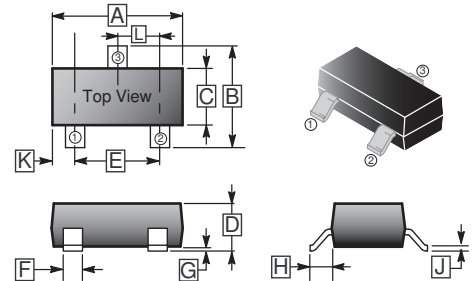
## ORDER INFORMATION

Part Number	Type
SZMBD24C	Lead (Pb)-free
SZMBD24C-C	Lead (Pb)-free and Halogen-free

## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

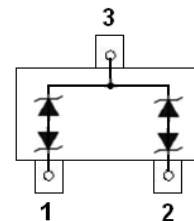
Parameter	Symbol	Ratings	Unit
IEC61000-4-2 ESD Voltage <sup>1</sup>	V <sub>ESD</sub>	Air Model	±30
		Contact Model	±30
		Per Human Body Model	±16
		Machine Model	±0.4
Peak Pulse Power <sup>2</sup>	P <sub>PP</sub>	350	W
Peak Pulse Current <sup>2</sup>	I <sub>PP</sub>	8	A
Maximum Lead Solder Temperature @10 Second Duration	T <sub>L</sub>	260	°C
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C

## SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0	0.18
B	2.10	3.00	H	0.55	REF.
C	1.20	1.80	J	0.08	0.26
D	0.89	1.3	K	0.6	REF.
E	1.70	2.3	L	0.95	BSC.
F	0.30	0.50			

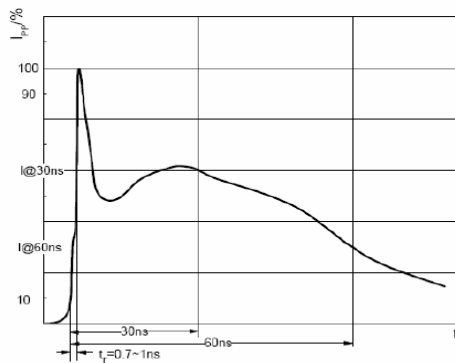
## Top View



**ESD STANDARDS COMPLIANCE**

**IEC61000-4-2 Standard**

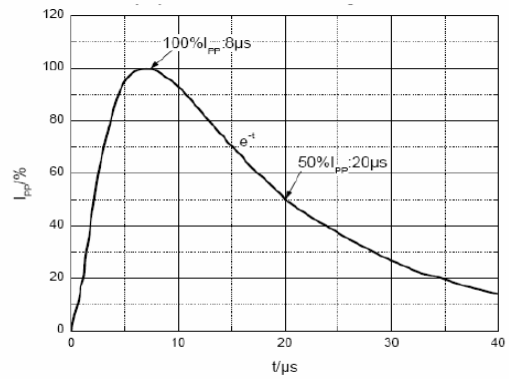
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15



ESD pulse waveform according to IEC61000-4-2

**JESD22-A114-B Standard**

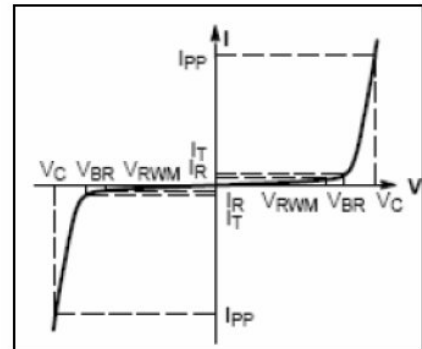
ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999



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

**ELECTRICAL PARAMETER**

Symbol	Parameter
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>PP</sub>	Peak Pulse Current
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>RWM</sub>	Reverse Standoff Voltage
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>
I <sub>F</sub>	Forward Current



V-I characteristics for a Bi-directional TVS

**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub>=25°C unless otherwise noted)

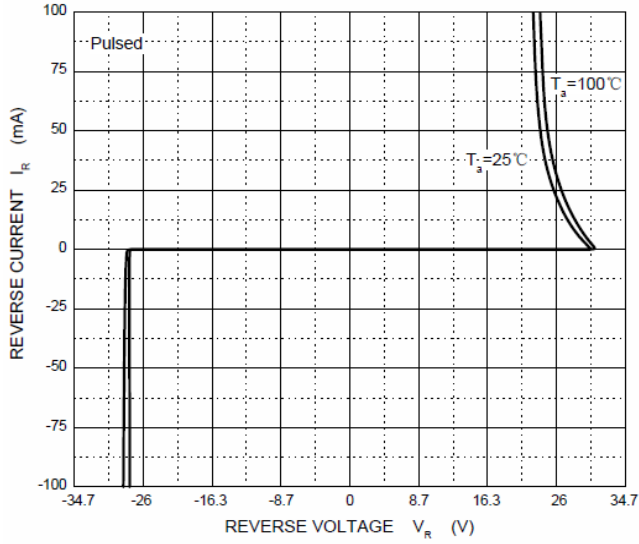
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-off Voltage	V <sub>RWM</sub>	-	-	24	V	
Breakdown Voltage	V <sub>(BR)</sub>	26.2	-	-	V	I <sub>T</sub> =1mA
Clamping Voltage <sup>2</sup>	V <sub>C</sub>	-	-	34	V	I <sub>PP</sub> =1A, t <sub>p</sub> =8/20µs
		-	50	66		I <sub>PP</sub> =8A, t <sub>p</sub> =8/20µs
Reverse Leakage Current	I <sub>R</sub>	-	1	10	µA	V <sub>RWM</sub> =24V
Junction Capacitance	C <sub>J</sub>	-	28	40	pF	V <sub>R</sub> =0V, f=1MHz

Notes:

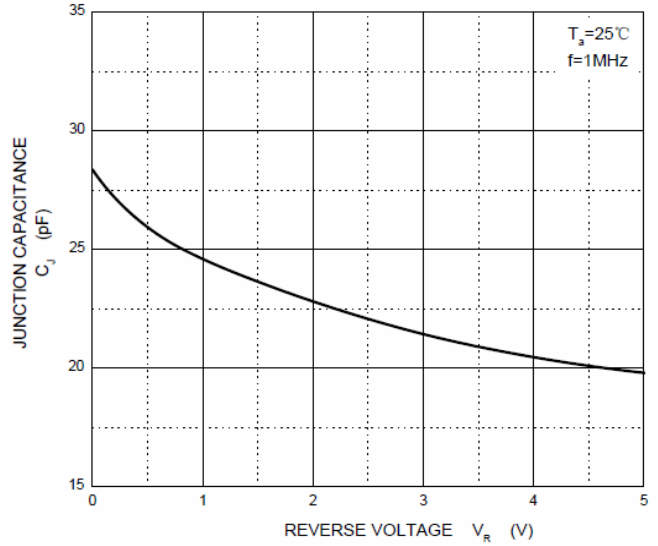
1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20µs exponential decay waveform according to IEC61000-4-5.

**TYPICAL CHARACTERISTICS**

**Reverse Characteristics**



**Capacitance Characteristics**



$V_C$  —  $I_{PP}$

