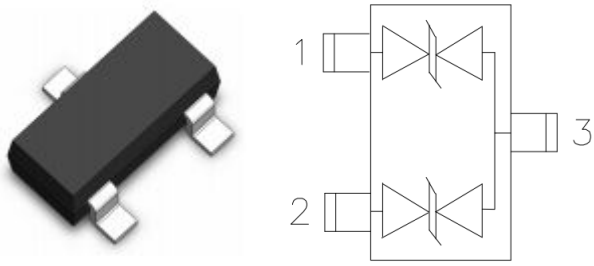
SM48C-Q1

2-Line Bi-directional TVS Diode Array

Features

- ✧ Ultra low leakage: nA level
- ✧ Operating voltage: 48V
- ✧ Low clamping voltage
- ✧ RoHS compliant
- ✧ Compliant to Halogen-free
- ✧ Suffix"-Q1" for AEC-Q101

Pin Configuration



Applications

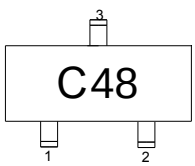
- ✧ Servers, notebook, and desktop
- ✧ Cellular handsets and accessories
- ✧ Control & monitoring systems
- ✧ Portable electronics
- ✧ CAN bus protection

Protection Solution to Meet

- ✧ IEC61000-4-2 (ESD) ±30kV (air),±30kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 9A(8/20μs)

Mechanical Characteristics

- ✧ SOT-23 package
- ✧ Solding compound flammability rating : UL 94V-0
- ✧ Sead finish：lead free
- ✧ Sarking code： C48



Absolute Maximum Ratings (T_A=25ºC, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	1000	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Operating junction temperature range	T_J	-40 to +125	℃
Storage temperature range	T_{STG}	-55 to +150	℃

Electrical Characteristics (T_A=25ºC, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				48	V
Reverse breakdown voltage	V_{BR}	I_T = 1mA	52			V
Reverse leakage current	I_R	V_{RWM} =48V			1	μA
Clamping voltage	V_C	I_{PP}=1A, tp =8/20μs		65	70	V
		I_{PP}=9A, tp =8/20μs		87	95	V
Junction capacitance	C_J	V_{RWM} = 0V, f = 1MHz		10	20	pF

Typical Performance Characteristics (TA=25°C unless otherwise specified)

Figure1: Clamping Voltage vs. Peak Pulse Current

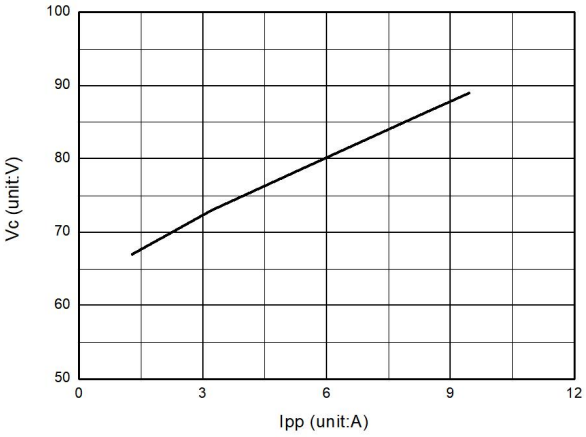


Figure2: Junction Capacitance vs, Reverse Voltage

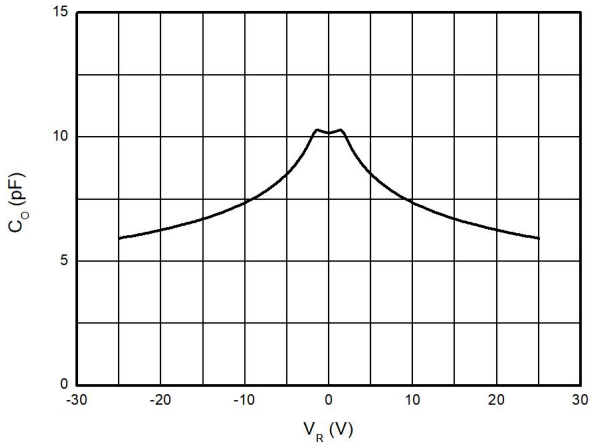


Figure3: 8 X 20us Pulse Waveform

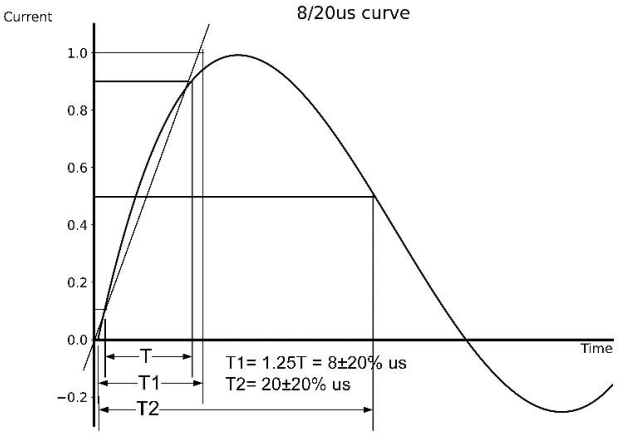
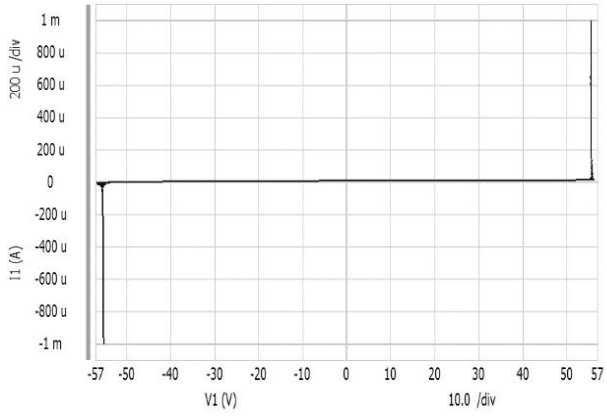
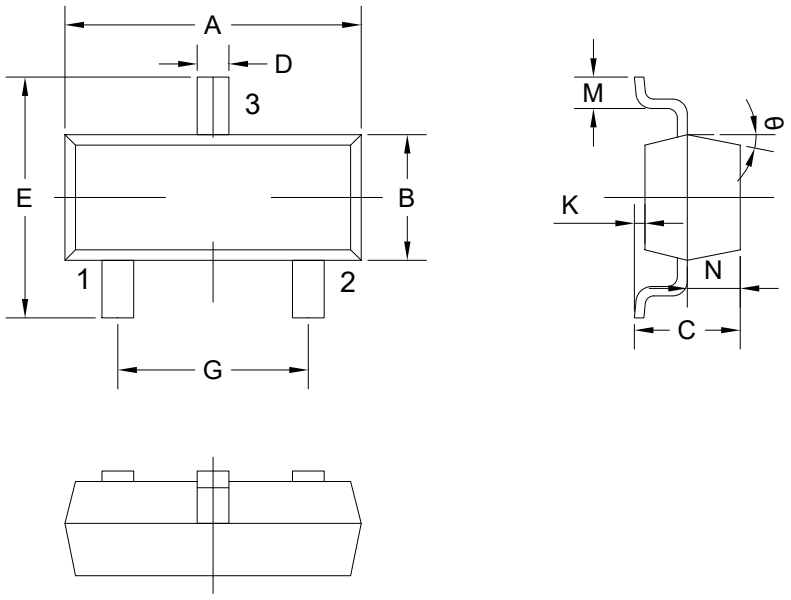


Figure4: I-V Curve

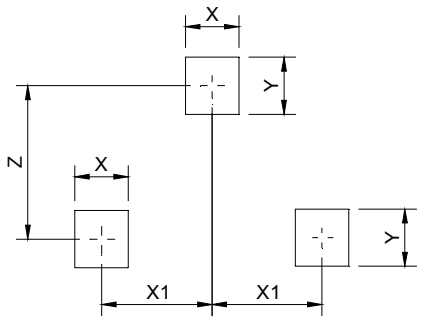


SOT-23 Package Outline Drawing



COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER					
SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	2.85	3.04	G	1.80	2.00
B	1.20	1.40	K	0	0.10
C	0.90	1.10	M	0.20	-
D	0.40	0.50	N	0.50	0.70
E	2.25	2.55	θ	5°	9°

Suggested Land Pattern



X	0.80mm
X1	0.95mm
Y	0.80mm
Z	2.02mm