TECH PUBLIC
台舟电子

SMC12

2-Line BI-directional TVS Diode

www.sot23.com.tw

Features

- 80W peak pulse power(8/20 μs)
- Ultra low leakage：nA level
- Operating voltage：12V
- Low clamping voltage
- Complies with following standards:
- – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
  – IEC61000-4-4 (EFT) 40A (5/50ns)
  –IEC61000-4-5 (Lightning) 8A (8/20μs)
- RoHS Compliant

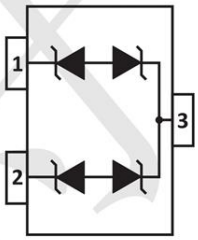
Mechanical Characteristics

- Package: SOT23
- Lead Finish: Matte Tin
- UL Flammability Classification Rating 94V-0
- Shipping Qty :3000pcs/7Inch Tape & Reel

Applications

- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box

Dimensions and Pin Configuration



Marking: V5t Or 12C

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	80	W
Peak Pulse Current (8/20μs)	Ipp	8	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			12	V	
Breakdown Voltage	V_{BR}	13.6		17.5	V	I_T = 1mA
Reverse Leakage Current	I_R			0.05	uA	V_{RWM} =12V
Clamping Voltage	Vc			9	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	Vc			10	V	I_{PP} = 8A (8 x 20Us pulse)
Junction Capacitance	C_J		15	20	pF	VR=0, f=1MHz, Pin 3 to Pin 1 or Pin 3 to Pin 2
Junction Capacitance	C_J		8		pF	VR=0, f=1MHz, Pin1 to Pin 2 or Pin 2 to Pin1

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

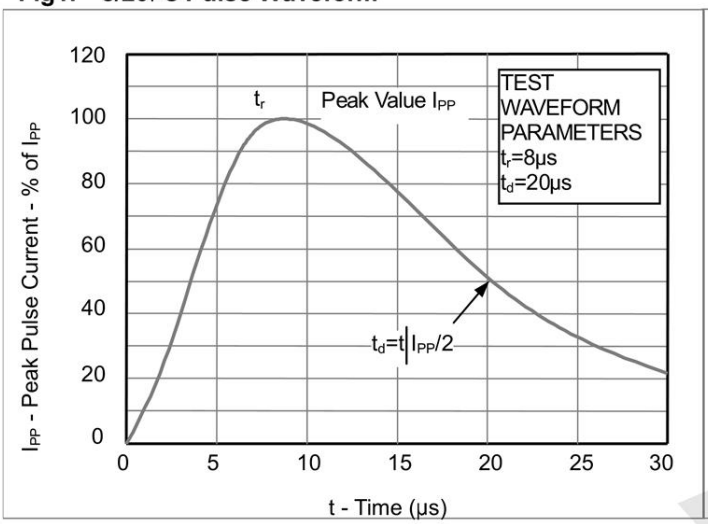


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

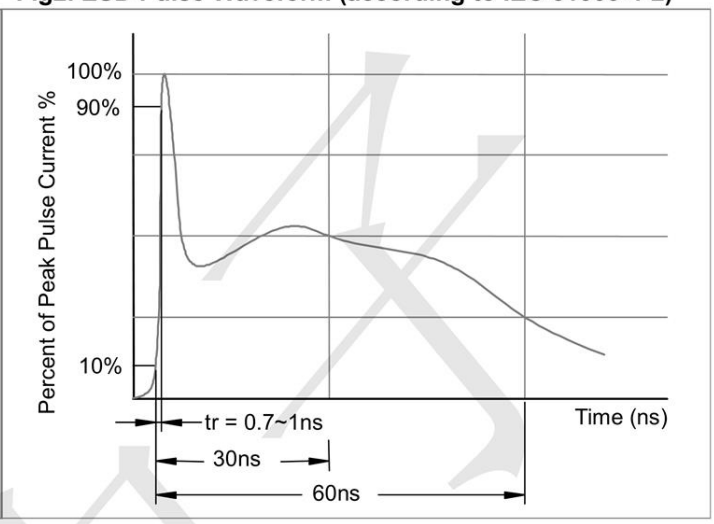
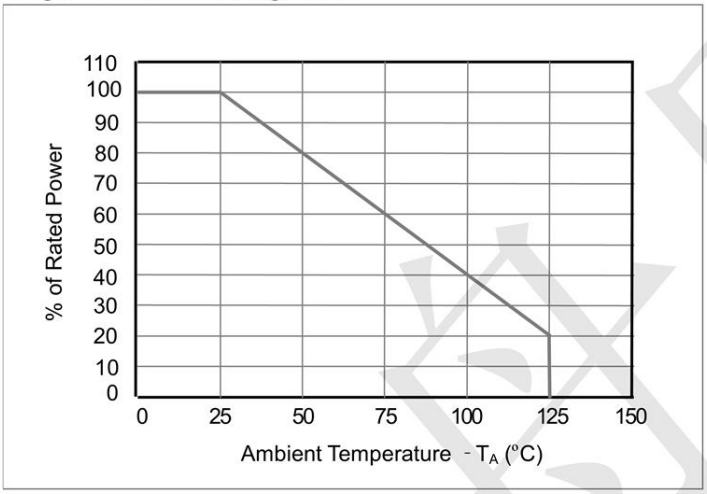


Fig3. Power Derating Curve



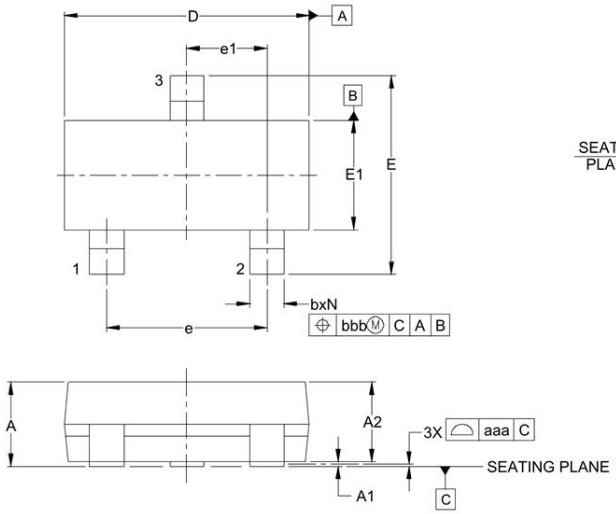
TECH PUBLIC
台舟电子

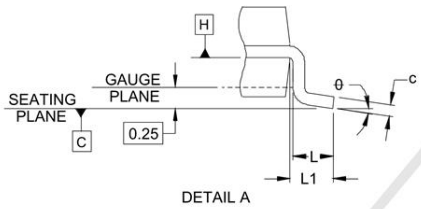
SMC12

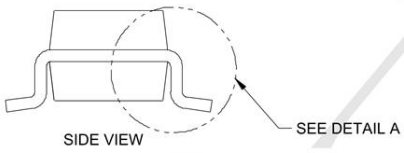
2-Line BI-directional TVS Diode

www.sot23.com.tw

Outline Drawing - SOT23

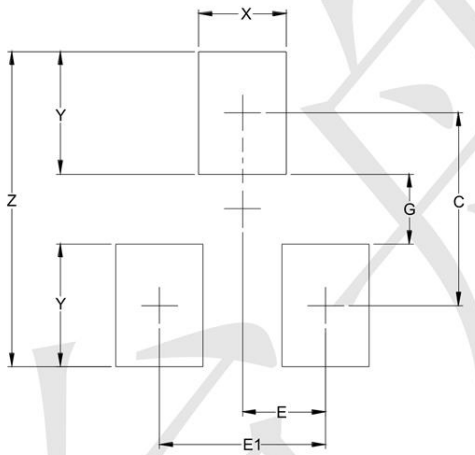






DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.035	-	.044	0.89	-	1.12
A1	.000	-	.004	0.01	-	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	-	.020	0.30	-	0.51
c	.003	-	.007	0.08	-	0.18
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e	.075			1.90 BSC		
e1	.037			0.95 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	.022			(0.55)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		

Land Pattern - SOT23



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
C	(.087)	(2.20)
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60