TECH PUBLIC
台舟电子

SM15-02HTG

2-Line Uni-directional TVS Diode

www.sot23.com.tw

Features

- 380W peak pulse power(8/20μs)
- Protects one bi-directional or two uni-directional lines
- Ultra low leakage： nA level
- Operating voltage：15V
- 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) 12A (8/20μs)
- RoHS Compliant

Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J STD 020

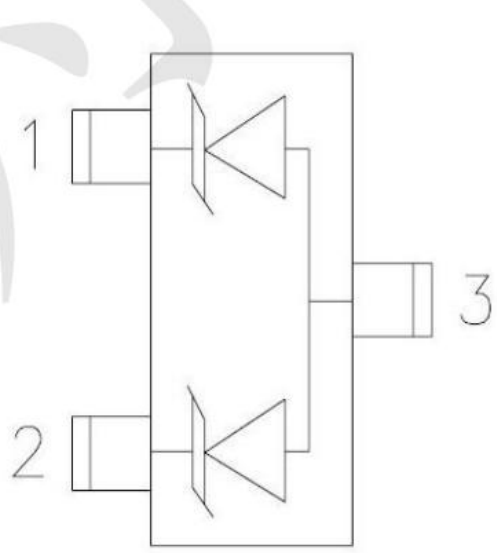
Applications

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

Ordering Information

Part Number	Qty per Reel	Reel Size
SM15-02HTG	3000	7″

Dimensions and Pin Configuration



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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	380	W
Peak Pulse Current (8/20μs)	I_{PP}	12	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}			15	V	
Breakdown Voltage	V_{BR}	16			V	I_T = 1mA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 36V
Forward Voltage	V_F		0.8	1.2	V	I_F = 10mA
Clamping Voltage	V_C			27	V	I_{PP} = 5A (8 x 20μs pulse)
Clamping Voltage	V_C			33	V	I_{PP} = 12 A (8 x 20μs pulse)
Junction Capacitance	C_J			85	pF	VR=0, f=1MHz，Pin 1 to Pin 3 or Pin 2 to Pin 3
Junction Capacitance	C_J		40		pF	VR=0, f=1MHz，Pin 1 to Pin 2

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig1. 8/20μs Pulse Waveform

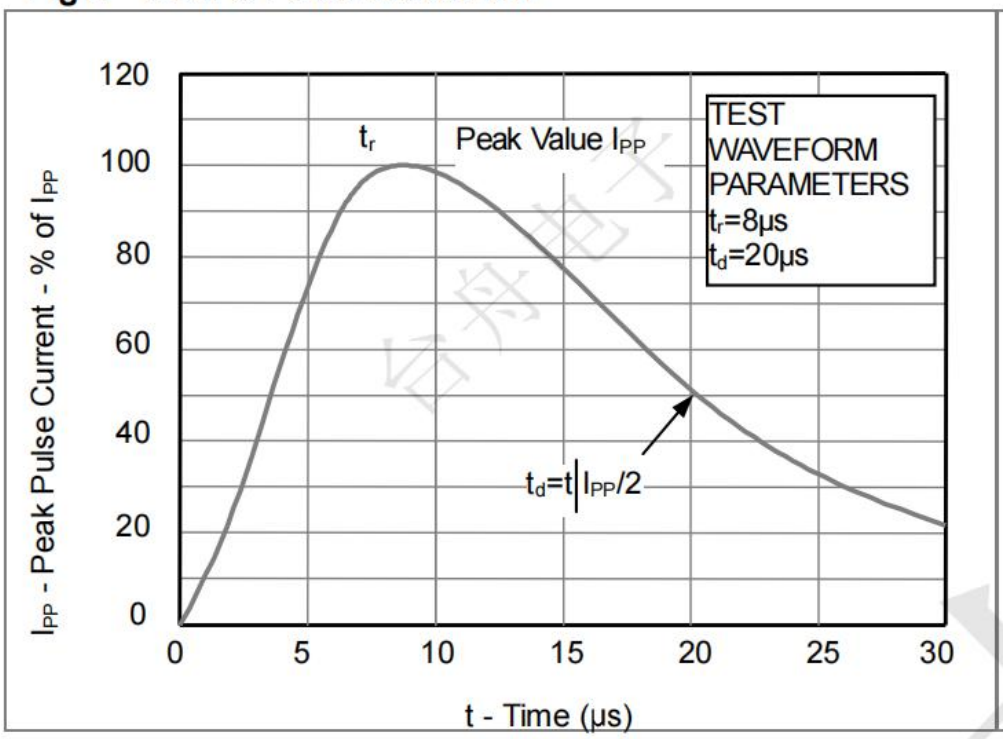


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

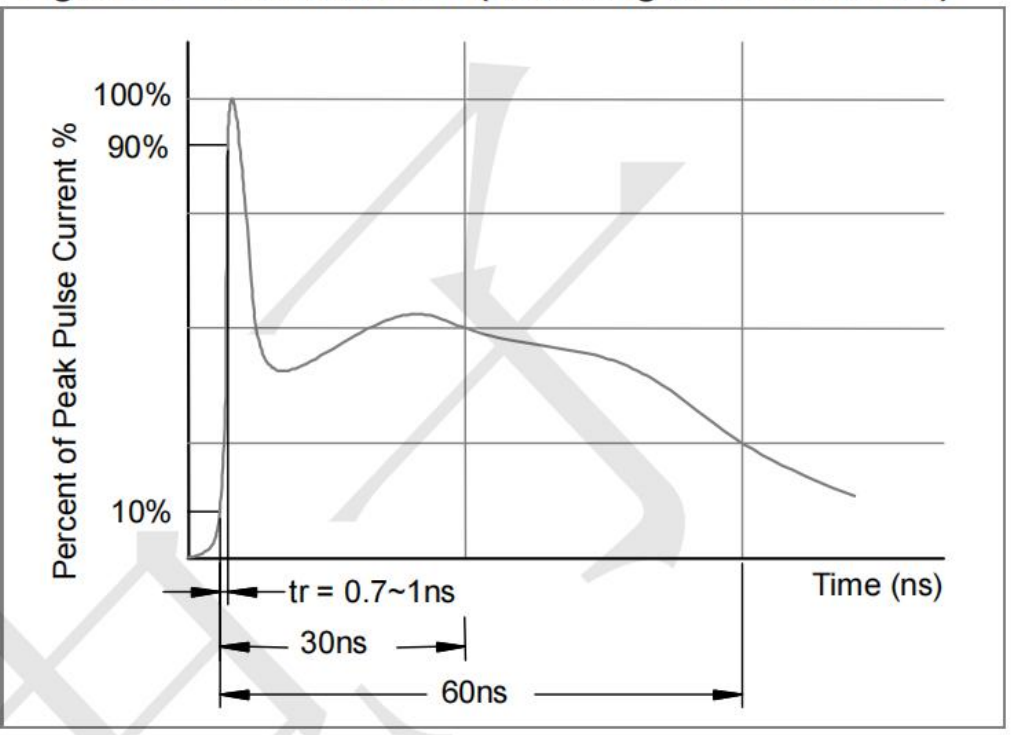
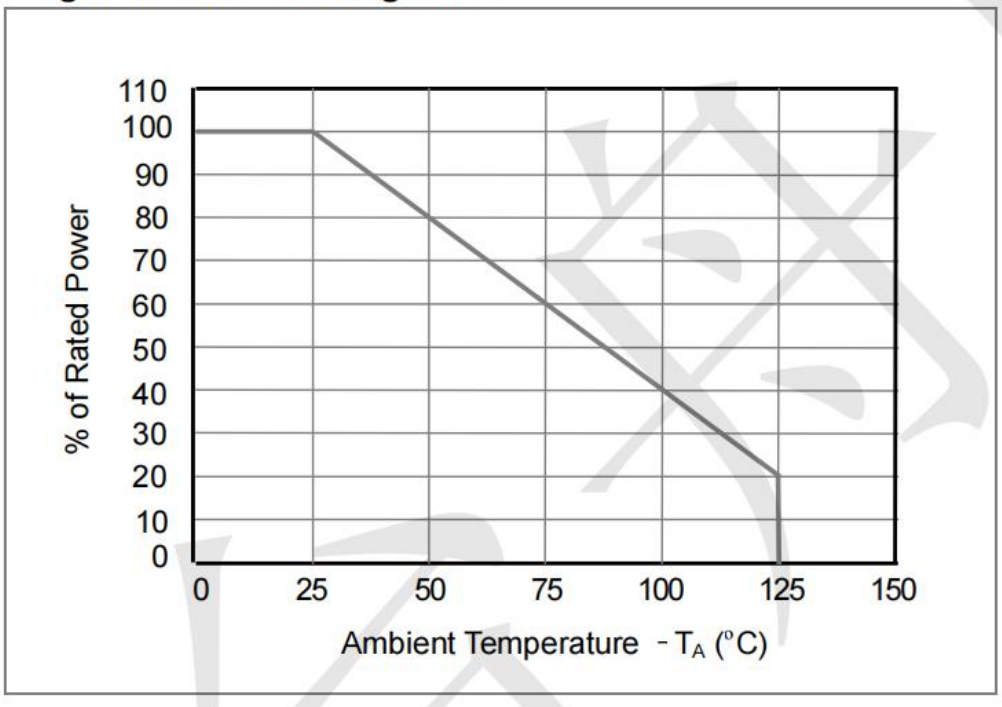
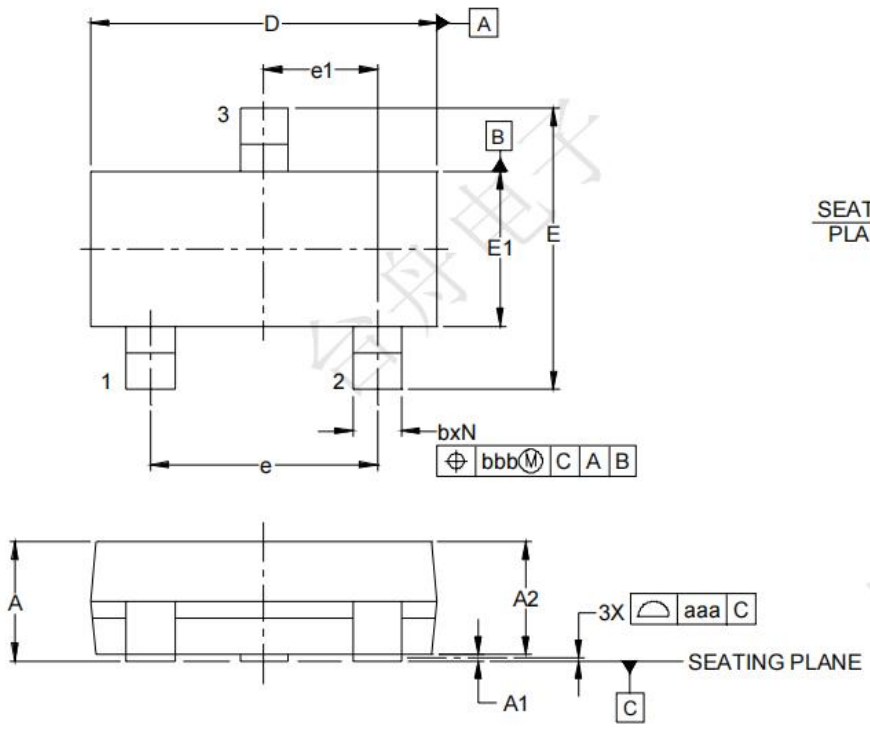
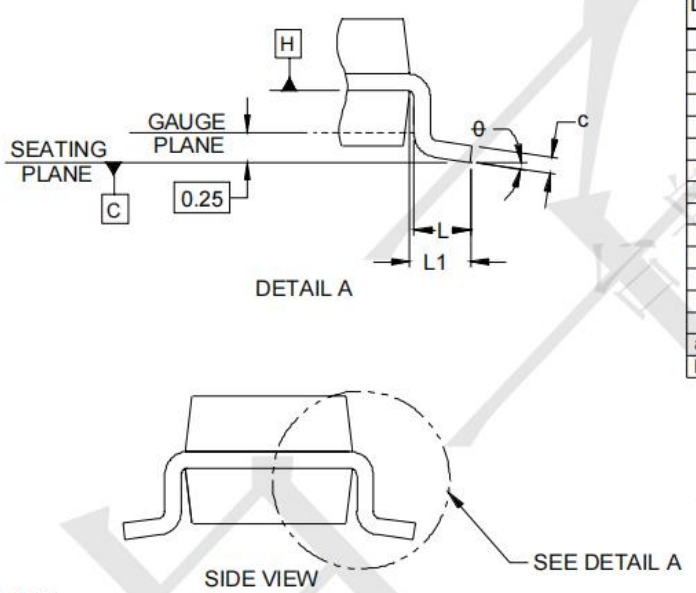


Fig3. Power Derating Curve



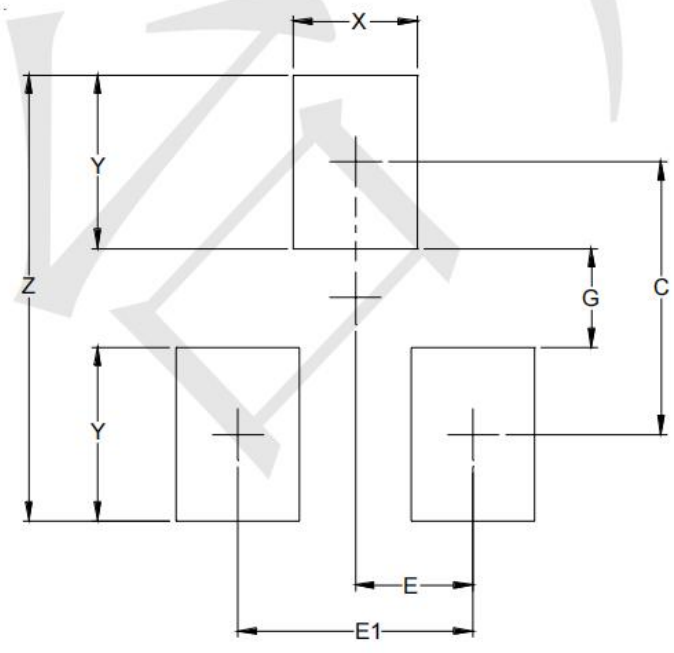
Outline Drawing - SOT23





DIMENSIONS						
DIM	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



DIMENSIONS		
DIM	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

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ESD5B5.0ST1G-P TPADM809SAKSZ TPAPX809S-31SA TPB1A30-123 DMP6350S TPDMG6602SVT TPESD0504S6-A TPSPX3819M5-L-3-3 BV15C IRFR2405TRPBF-TP DDTA143ZCA FDC6301N-TP FDMS7670AS-TP TPB05A40-323 TPFMMT493 TPGC12C-1 TPS3809L30DBVR-TP TPZVN3320FTA TPS7B6950DBVR-TP BSN20W SI3932DV SN7002W TPZXMP3A13FTA QM3003J-TP TPWSB5557Z LTH7 TPADM809LAKSZ TPD1213A-02SM TPESD0402G08V TPESD5311N