

Features

150W peak pulse power(8/20 μ s)
Ultra low leakage: nA level
Operating voltage: 7V or 12V
Low clamping voltage
Complies with following standards:
– IEC 61000-4-2 (ESD) immunity test
Air discharge: ± 30 kV
Contact discharge: ± 30 kV
– IEC61000-4-4 (EFT) 40A (5/50ns)
– IEC61000-4-5 (Lightning) 7A (8/20 μ s)
RoHS Compliant

Mechanical Data

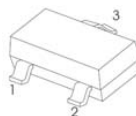
Package: SOT-23
Lead Finish: Matte Tin
Case Material: "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
Moisture Sensitivity: Level 3 per J-STD-020
Terminal Connections: See Diagram Below

Applications

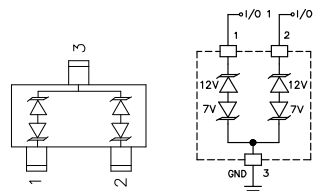
Wireless System
Networks
Portable Instrumentation
RS485 Ports

712

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR



Schematic & PIN Configuration

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 μ s)	Ppk	150	W
Peak Pulse Current(8/20 μ s)	IPP	7	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

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

		Pin 1 to 3 and 2 to 3(12V TVS)			Pin 3to 1 and 3 to 2(7V TVS)				
Parameter	Symbol	Min	Typ	Max	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			12			7	V	
Breakdown Voltage	VBR	13.3			7.5			V	IT = 1mA
Reverse Leakage Current	IR		0.01	0.5		0.01	0.5	μA	VR = VRWM
Clamping Voltage	VC			19			11	V	IPP = 1A (8 x 20μs pulse)
Clamping Voltage	VC			25			15	V	IPP = 7A (8 x 20μs pulse)
Junction Capacitance	CJ			75			75	pF	VR=0, f=1MHz
Junction Capacitance	CJ		45			45		pF	VR=VRWM, f=1MHz

RATING AND CHARACTERISTIC CURVES

Fig1. 8/20 μ s Pulse Waveform

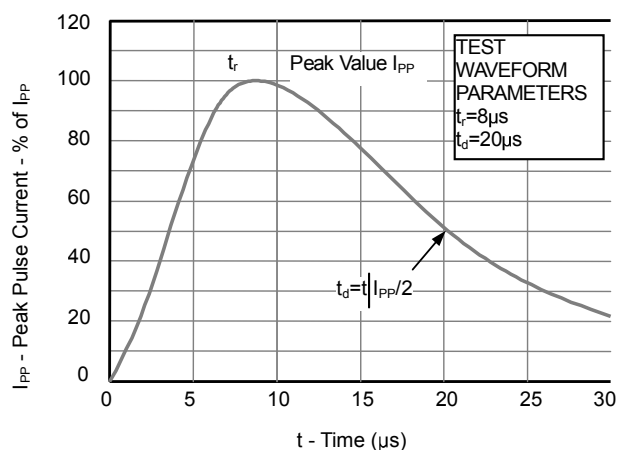


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

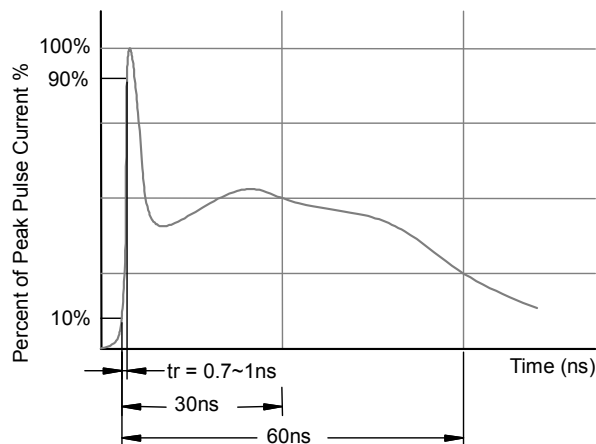
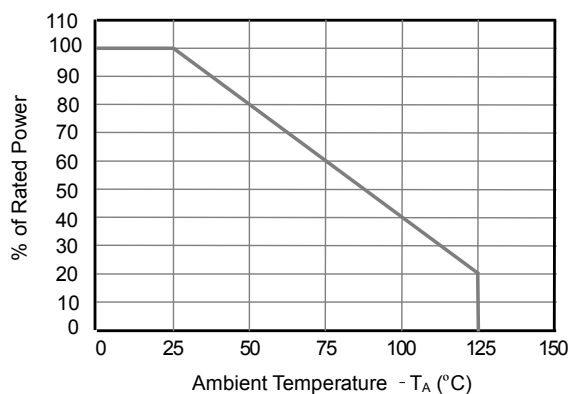
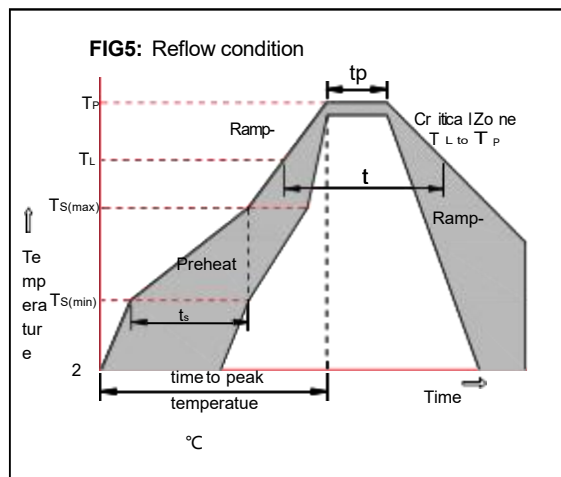


Fig3. Power Derating Curve



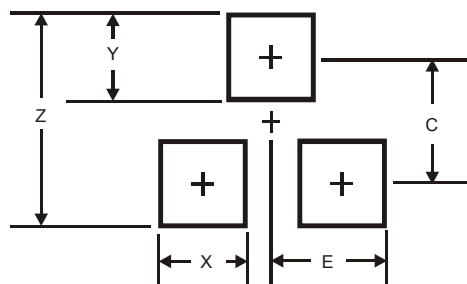
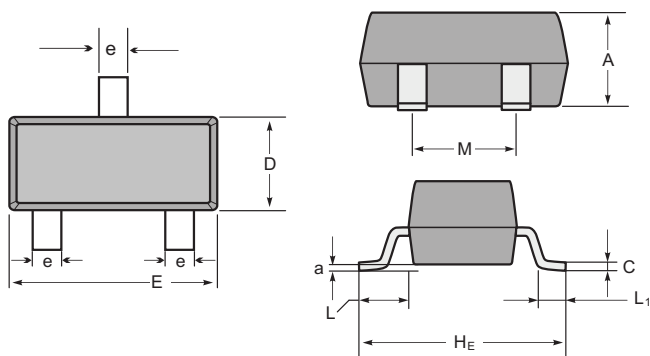
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23



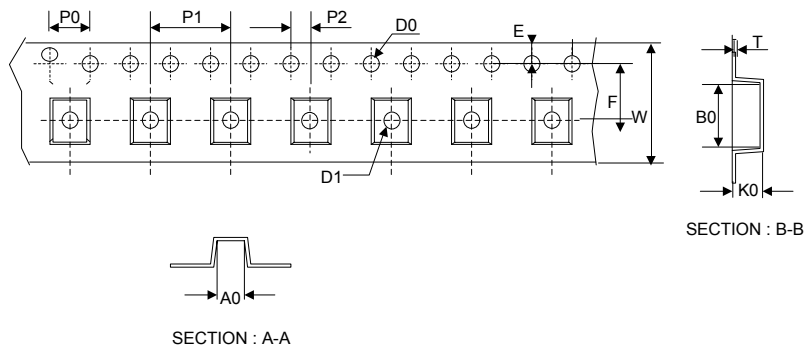
SOT-23 mechanical data

UNIT	A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7		0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)
	min	35	3	47	110	87	12	67		6

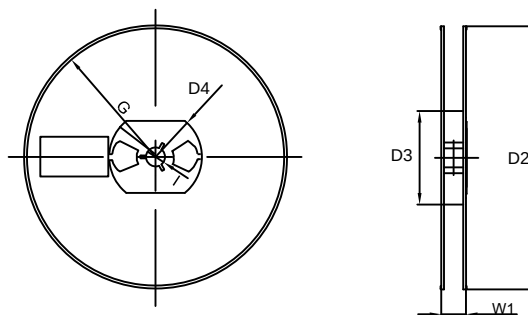
Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape



7" Reel



Symbol	Dimension (mm)
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	1.55±0.10
D1	1.05±0.10
E	1.55±0.10
F	3.60±0.10
W	8.00±0.10
A0	3.80±0.20
B0	3.25±0.20
K0	1.45±0.10
T	0.25±0.05
D2	178.0±3.0
D3	55Min.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0

Quantity: 3000PCS