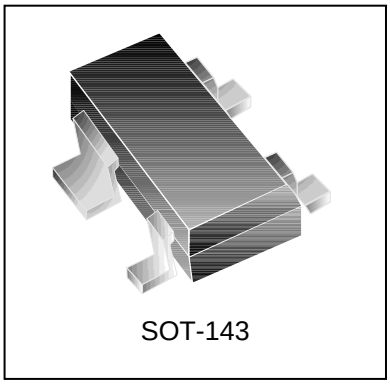
WS70RH

Transient Voltage Suppressor

Features

- Protects two I/O lines
- operating voltage: 70V
- Low capacitance(5pF typical) for high-speed interfaces
- Solid-state technology



SOT-143

IEC COMPATIBILITY (EN61000-4)

- **IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact)**
- **IEC 61000-4-4 (EFT) 40A (5/50ns)**
- **IEC 61000-4-5 (Lightning) 25A (8/20μs)**

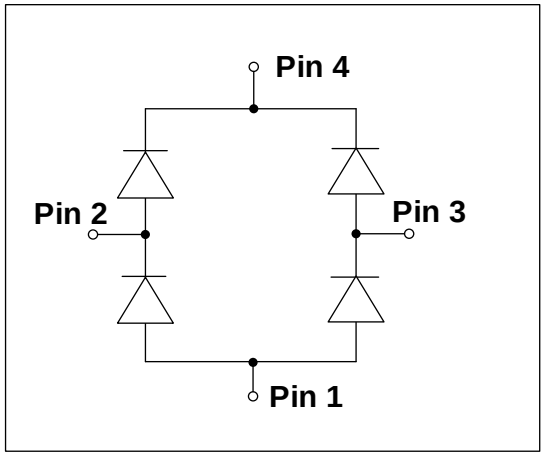
Mechanical Characteristics

- JEDEC SOT-143 package
- Marking : Making Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

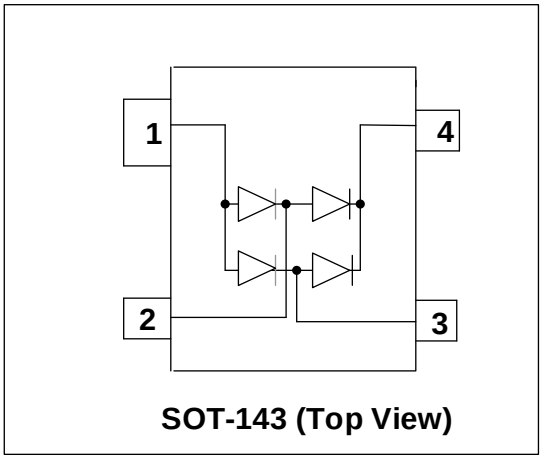
Applications

- 10/100 Ethernet
- FireWire & USB
- Sensitive Analog Inputs
- Portable Electronics
- LAN/WAN equipment
- Video Line Protection
- Microcontroller Input Protection

Circuit Diagram



Schematic & PIN Configuration

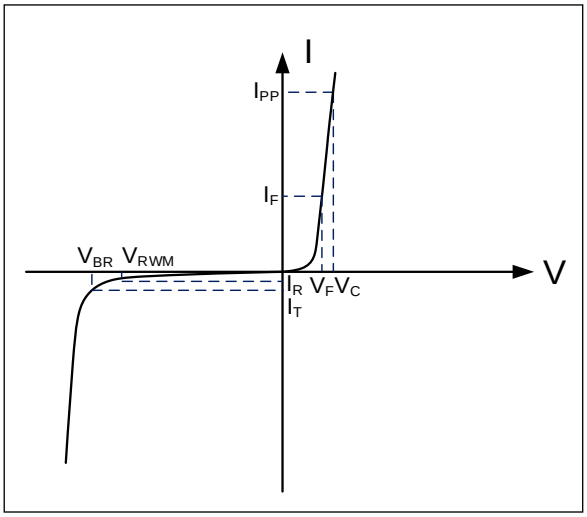


SOT-143 (Top View)

Absolute Maximum Rating			
Rating	**Symbol**	**Value**	**Units**
Peak Pulse Power（t_p =8/20μs）	P_{PP}	350	Watts
Peak Pulse Current（tp=8/20μs）	I_{PP}	25	A
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Parameters (T=25℃)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics

WS70RH						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				70	V
Punch-Through Voltage	V_{BR}	I_T=1mA	80			V
Reverse Leakage Current	I_R	V_{RWM}=70V, T=25°C			2	μA
Forward Clamping Voltage	V_C	I_{PP}=1A, tp=8/20μs		1.5	3	V
Forward Clamping Voltage	V_C	I_{PP}=10A, tp=8/20μs		4	6	V
Forward Clamping Voltage	V_C	I_{PP}=18A, tp=8/20μs		6.5	8	V
Forward Clamping Voltage	V_C	I_{PP}=25A, tp=8/20μs		10.5	14	V
Junction Capacitance	C_j	Between I/O pins and Ground V_R=0V, f=1MHz		5	10	pF
		Between I/O pins V_R=0V, f=1MHz		3	6	pF

Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

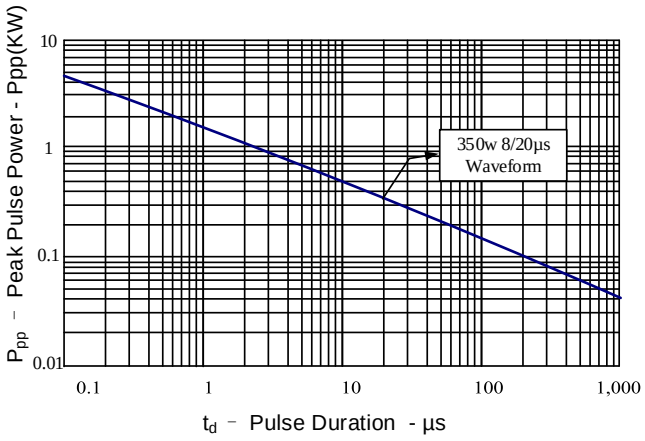


Figure 2: Power Derating Curve

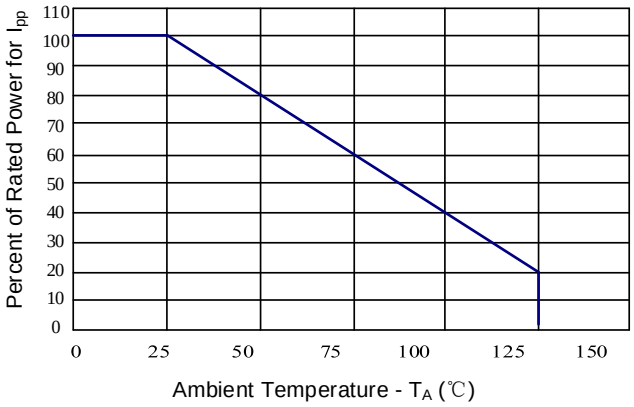


Figure 3: 8/20μs Pulse Waveform

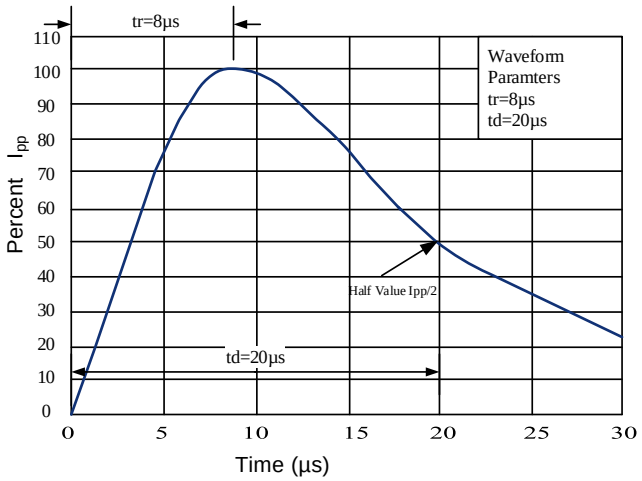
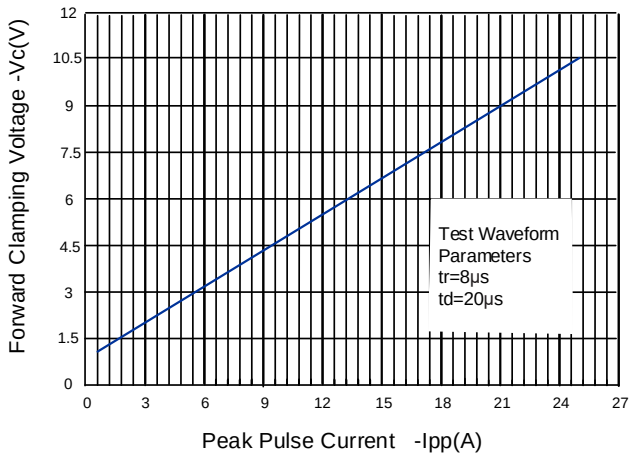
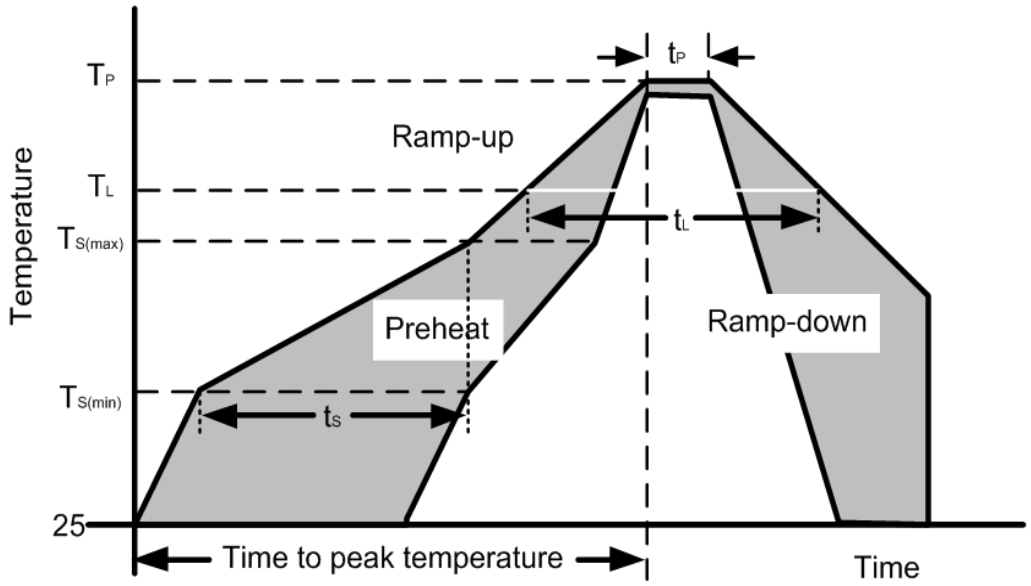


Figure 4:Forward Clamping Voltage vs. Peak Pulse Current



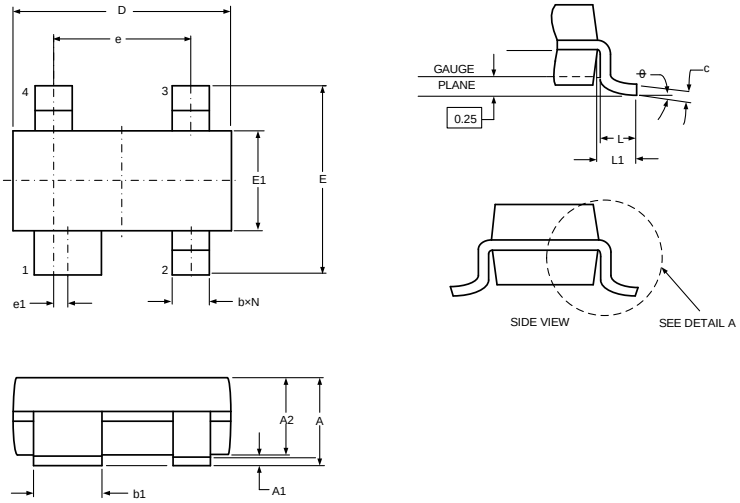
Soldering Parameters

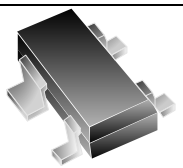
Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (ts)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L——Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Outline Drawing – SOT-143

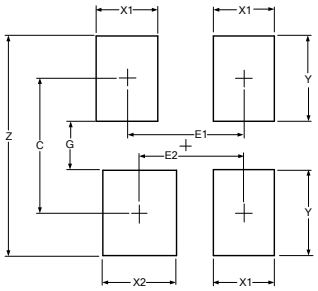
PACKAGE OUTLINE





SOT-143

DIMENSIONS				
SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
e	1.800	2.000	0.071	0.079
e1	0.200TYP		0.008TYP	
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
L1	0.550REF		0.022REF	
L	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	.087	2.20
E1	.076	1.92
E2	.068	1.72
G	.031	0.80
X1	.039	1.00
X2	.047	1.20
Y	.055	1.40
Z	.141	3.60

Notes:
Controlling Dimension: Millimeter.

Marking Codes

Part Number	Marking Code
WS70RH	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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