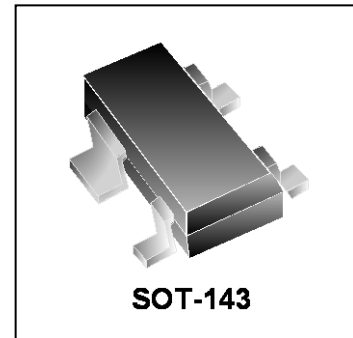


ESD Protection Diode Array

Features

- 100Watts Peak Power per Line ($t_p = 8/20\mu s$)
- Protects two I/O lines
- Low operating voltage: 5V
- Ultra Low capacitance($<1.0pF$) for high-speed interfaces
- Solid-state technology
- AEC-Q101 qualified (Automotive grade with suffix "Q:")
- Exsemi technology



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 6.5A (8/20 μs)

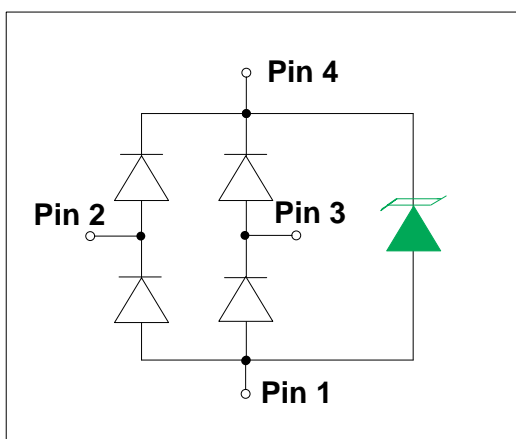
Mechanical Characteristics

- JEDEC SOT-143 package
- Molding compound flammability rating: UL 94V-0
- Marking : Making Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

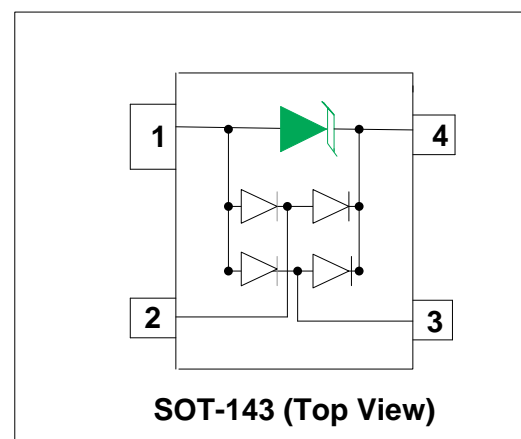
Applications

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

Circuit Diagram



Schematic & PIN Configuration

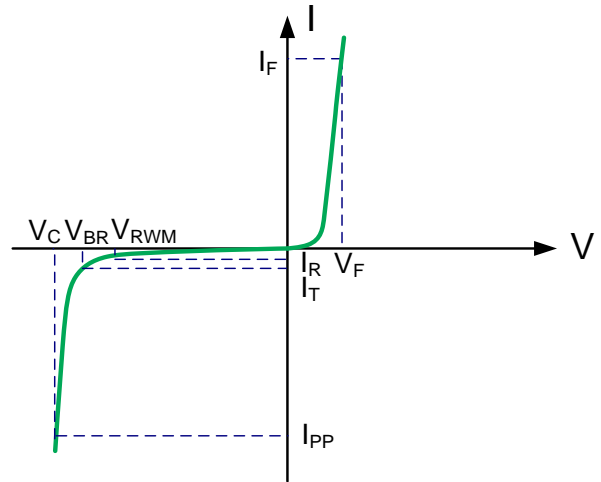


Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	100	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I_{PP}	6.5	A
Lead Soldering Temperature	T_L	260(10sec)	$^{\circ}C$
Operating Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T



Electrical Characteristics

EPSR05						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T=1mA$	6.0			V
Reverse Leakage Current	I_R	$V_{RWM}=5V, T=25^{\circ}C$			1.0	μA
Clamping Voltage	V_C	$I_{PP}=1A, t_p=8/20\mu s$		10		V
Clamping Voltage	V_C	$I_{PP}=6.5A, t_p=8/20\mu s$		16	17.6	V
Junction Capacitance	C_j	Between I/O pins and Ground $V_R=0V, f=1MHz$		0.8	1.0	pF
		Between I/O pins $V_R=0V, f=1MHz$		0.4	0.6	pF

Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

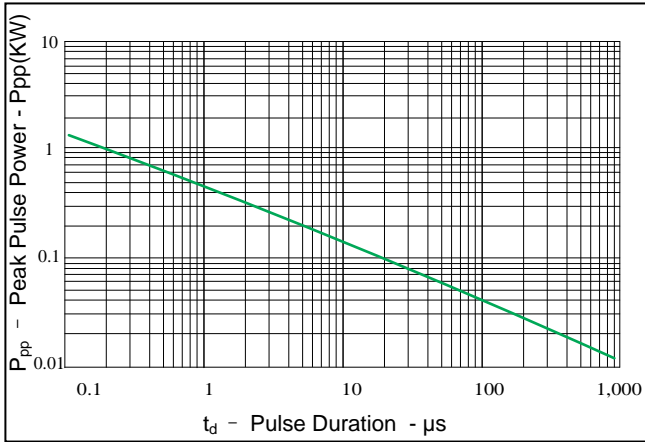


Figure 2: Power Derating Curve

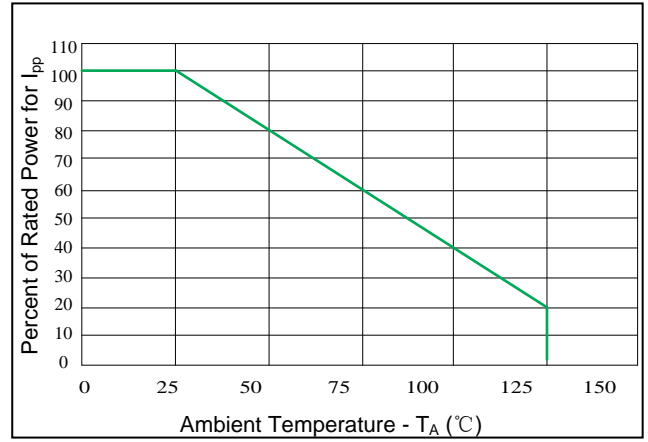


Figure 3: Pulse Waveform

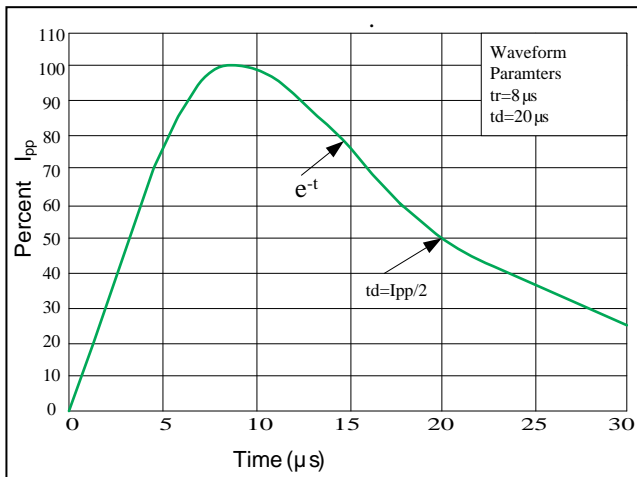


Figure 4: Clamping Voltage vs. Peak Pulse Current

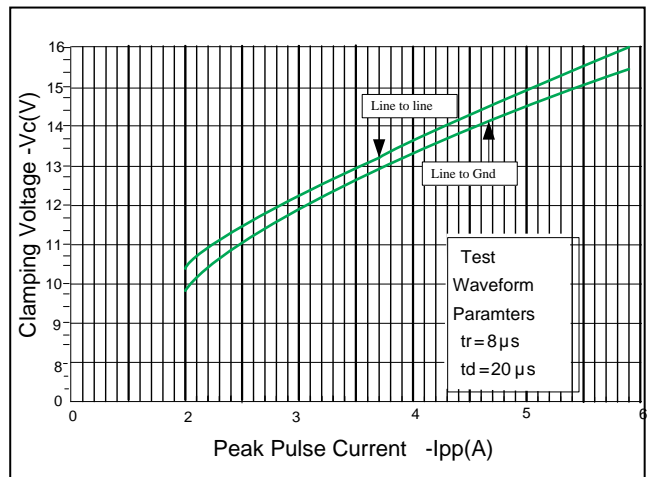


Figure 5: Forward Voltage vs. Forward Current

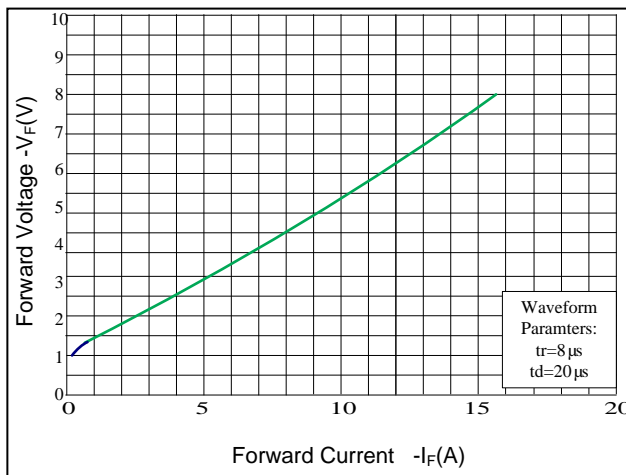
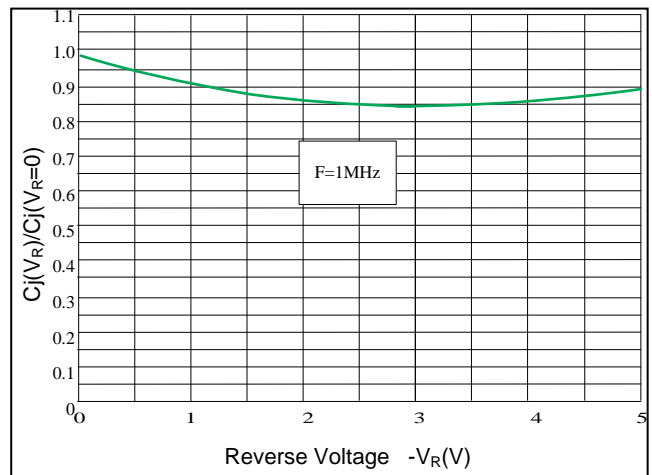
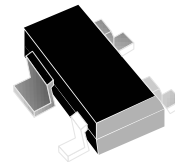
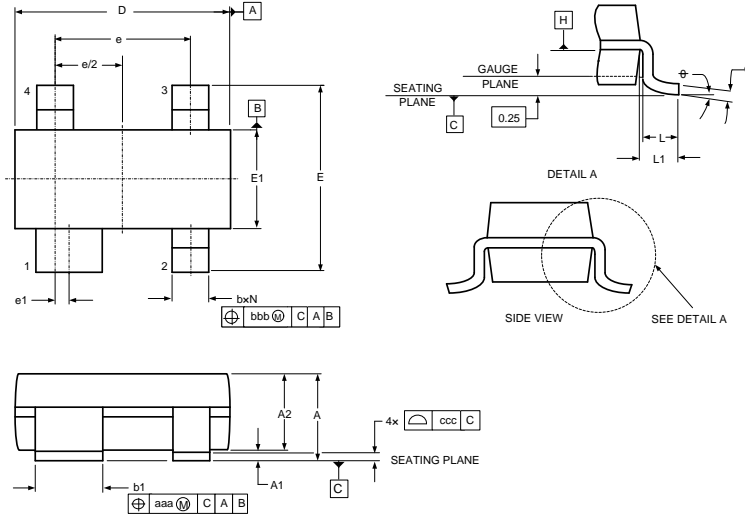


Figure 6: Capacitance vs. Reverse Voltage



PACKAGE OUTLINE

Outline Drawing – SOT-143



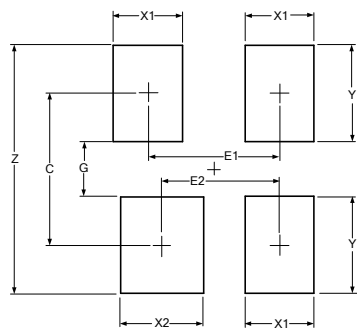
SOT-143

DIMENSIONS

SYMBOL	MILLIMETER		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°

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. DATUMS AND TO BE DETERMINED AT DATUM PLANE
3. DIMENSIONS "E1" AND "D" DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
4. REFERENCE JEDEC STD TO-253,VARIATION D.



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

1. This land pattern is for reference purposes only consult your manufacturing group to ensure your company's manufacturing guidelines are met.
2. Reference IPC-SM-782A.

Package Information

Qty: 3k/Reel