Description

The DLSR70 is a low capacitance TVS diode array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting sensitive semi-conductor components from damage. The DLSR70 complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into a lead-free SOT-143 package. It is designed to protect components which are connected to high speed interfaces and transmission lines from voltage surges.

Features

- 500W peak pulse power(8/20μs)
- Operating voltage：70V
- Low capacitance for high-speed data line
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 25A (8/20μs)
- RoHS Compliant

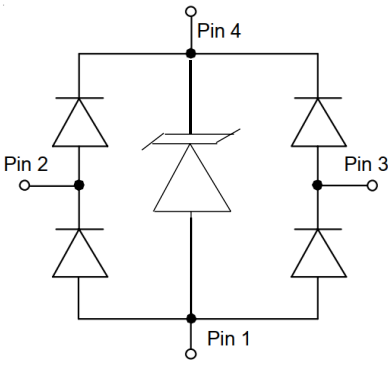
Mechanical Characteristics

- Package: SOT-143
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

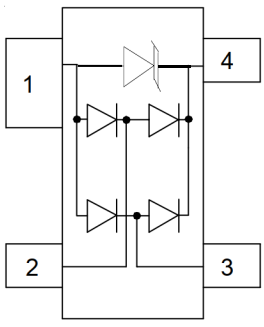
Applications

- ADSL Lines
- Video Line Protection
- I2C Bus Protection
- LAN/WAN equipment
- Portable Electronics
- ISDN S/T Interface

Dimensions and Pin Configuration

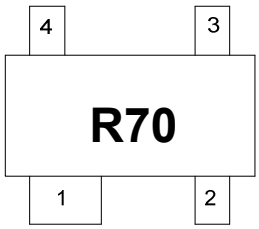


Circuit Diagram



Pin Schematic

Marking Information



R70= Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DLSR70	R70	3000/Tape & Reel	7 inch

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

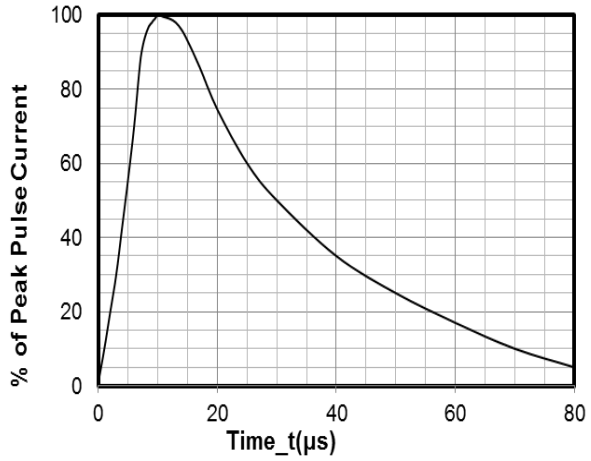
Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20μs)	I_{PP}	25	A
Rectifier Repetitive Peak Reverse Voltage	V_{RRM}	70	V
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

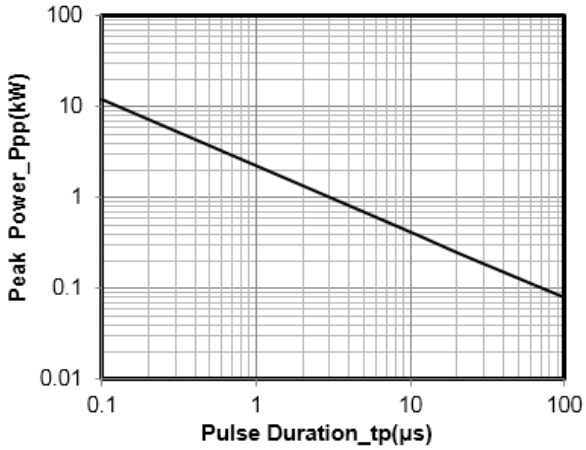
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			70	V	Any I/O Pin to GND
Breakdown Voltage	V_{BR}	85			V	I_T = 50μA, any I/O Pin to GND
Reverse Leakage Current	I_R			5	μA	V_{RWM} = 70V, any I/O Pin to GND
Forward Clamping Voltage	V_C			1.5	V	I_{PP} = 1A (8 x 20μs pulse), GND to any I/O Pin
Forward Clamping Voltage	V_C			5	V	I_{PP} = 10A (8 x 20μs pulse), GND to any I/O Pin
Forward Clamping Voltage	V_C			10	V	I_{PP} = 25A (8 x 20μs pulse), GND to any I/O Pin
Junction Capacitance	C_J		5	10	pF	VR = 0V, f = 1MHz, any I/O Pin to GND
Junction Capacitance	C_J		3		pF	VR = 0V, f = 1MHz, between I/O pins

Note: I/O Pins are Pin 2,Pin 3

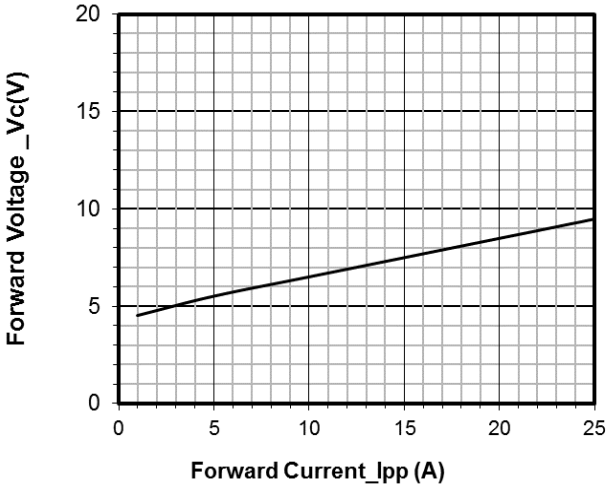
Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)



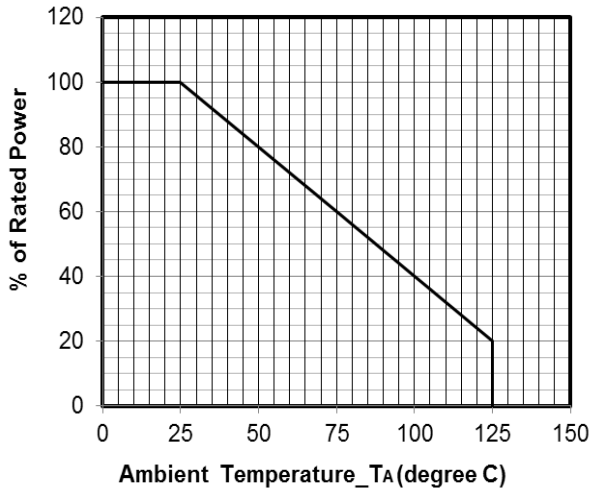
8 X 20μs Pulse Waveform



Peak Pulse Power vs. Pulse Time

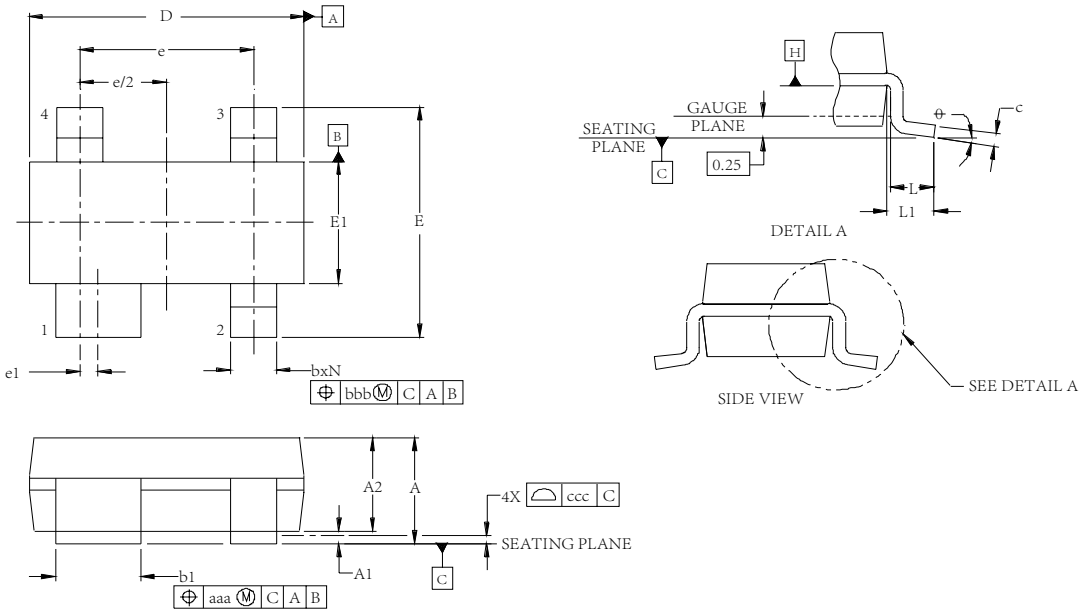


Clamping Voltage vs. Peak Pulse Current



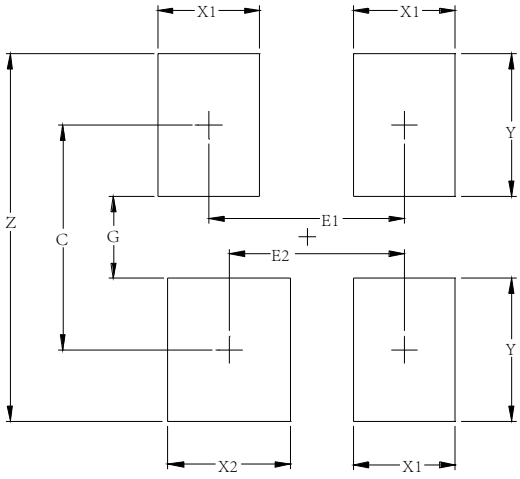
Power Derating Curve

SOT-143 Package Outline Drawing



DIMENSIONS						
DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.031	-	.048	0.80	-	1.22
A1	.000	-	.006	0.013	-	0.15
A2	.029	.035	.042	0.75	0.90	1.07
b	.011	-	.020	0.30	-	0.51
b1	.029	-	.037	0.76	-	0.94
c	.003	-	.008	0.08	-	0.20
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			1.92 BSC		
e1	.008			0.20 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	(.021)			(0.54)		
N	4			4		
θ	0°	-	8°	0°	-	8°
aaa	.006			0.15		
bbb	.008			0.20		
ccc	.004			0.10		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.20	0.087
E1	1.92	0.076
E2	1.72	0.068
G	0.80	0.031
X1	1.00	0.039
X2	1.20	0.047
Y	1.40	0.055
Z	3.60	0.141

Contact Information

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