Description

The DLSR70S3 is an uni-directional 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 voltage sensitive high-speed data lines. The DLSR70S3 has an ultra-low capacitance with a typical value at 1.0pF, and complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into a lead-free SOT-323 package. It is designed to protect LVDS, HDMI, USB2.0, USB3.0, and other high speed ports.

Features

- Protects one bi-directional or two uni-directional lines
- Ultra low leakage: nA level
- Operating voltage: 70V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 15A (8/20μs)
- RoHS Compliant

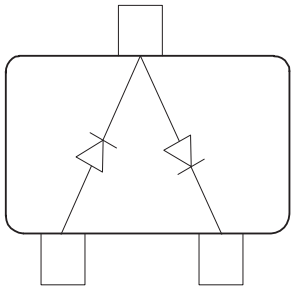
Mechanical Characteristics

- Package: SOT-323
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

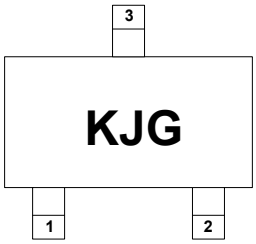
- USB2.0/USB3.0
- LVDS
- HDMI
- High Speed Differential Pairs

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



KJG = Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DLSR70S3	KJG	3000/Tape & Reel	7 inch

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

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

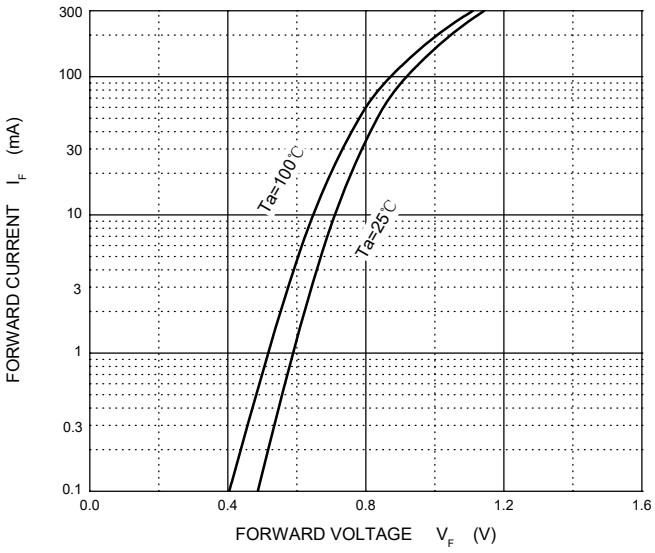
Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20μs)	I_{PP}	15	A
Rectifier Repetitive Peak Reverse Voltage	V_{RRM}	70	V
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +150	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

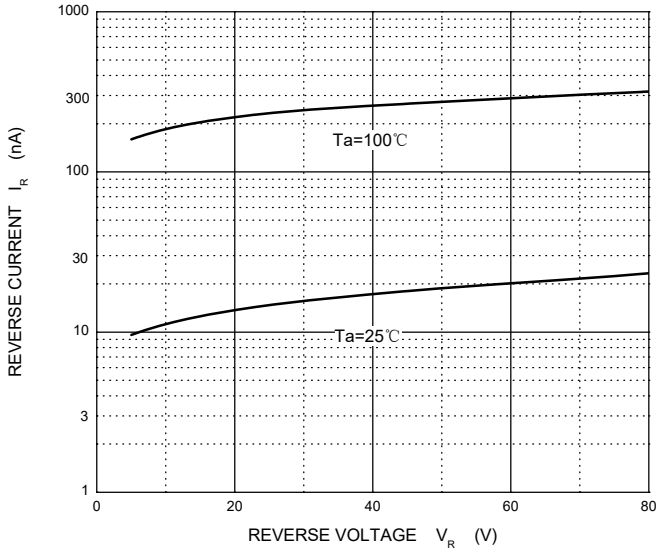
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			70	V	
Punch-Through Voltage	V_{BR}	80			V	I_T = 50μA
Reverse Leakage Current	I_R			0.1	μA	V_{RWM} = 70V
Clamping Voltage	V_C		1.0	2.0	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C		3.0	5.0	V	I_{PP} = 5A (8 x 20μs pulse)
Clamping Voltage	V_C		5.0	10.0	V	I_{PP} = 10A (8 x 20μs pulse)
Junction Capacitance	C_J		1.0	1.5	pF	VR=0, f=1MHz, between I/O pins and Ground
Junction Capacitance	C_J		0.5	0.75	pF	VR=0, f=1MHz, between I/O pins

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

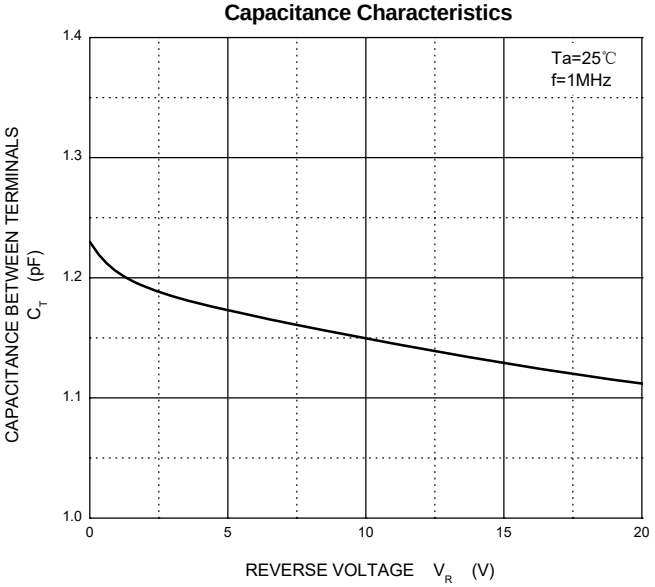
Forward Characteristics



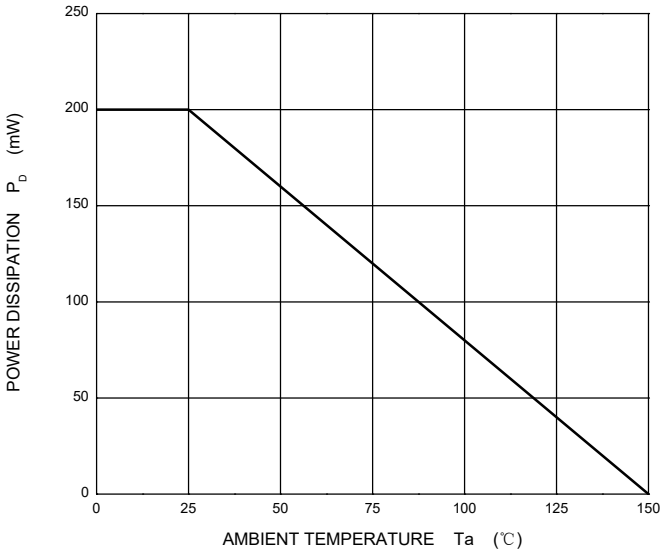
Reverse Characteristics



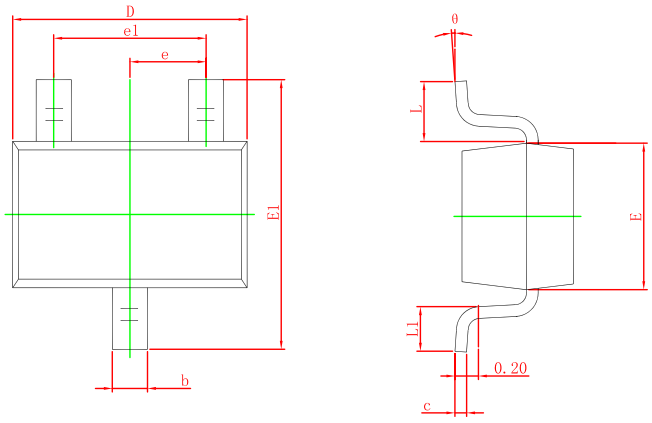
Capacitance Characteristics



Power Derating Curve

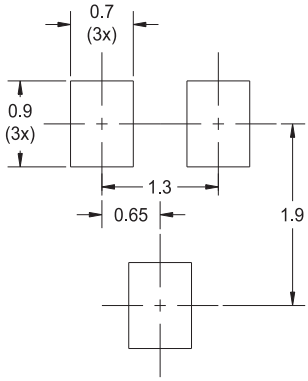


SOT-323 Package Outline Drawing



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Land Pattern



Contact Information

Changzhou D-first Electronics CO.,Ltd.
www.first-electronic.com
Email: xhf@first-electronic.cn
Phone: +86（0519）8817 1671