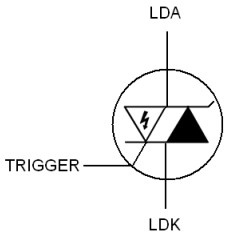
LASORB™
ESD Absorber for Laser Diodes

TSOP6/4G-20V Semiconductor Device

FEATURES

- Compact TSOP-6 SMT package
- Customized using passive external components
- Protects against both positive- and negative-ESD, in accordance with ESD standards such as:
  - ANSI/ESD STM5.1
  - MIL-STD 833-c
  - IEC 61340-2-1
  - IEC 61000-4-2
- Protects against reverse bias (reverse polarity)
- Lead (Pb)-free component in accordance with RoHS 2002/95/EC and WEEE 2002/96/EC



Electrical Symbol


Package photograph

APPLICATIONS

- Protecting laser diodes from direct and indirect ESD
- Protecting laser diodes from surges during power-up and power-down
- May be used to protect other optoelectronic devices such as Photodiodes and LEDs

GENERAL DESCRIPTION

The TSOP6/4G-20V is our fourth-generation LASORB Semiconductor Device. It serves as the heart of all of our encapsulated LASORB components, and it is also sold separately for direct integration into OEM devices. When used along with one or two external bias resistors and a single capacitor, its response can be customized to protect virtually any laser diode or series string of laser diodes. The TSOP6/4G-20V Semiconductor Device provides protection against reverse bias as well as fast-changing forward bias conditions.

ORDERING INFORMATION

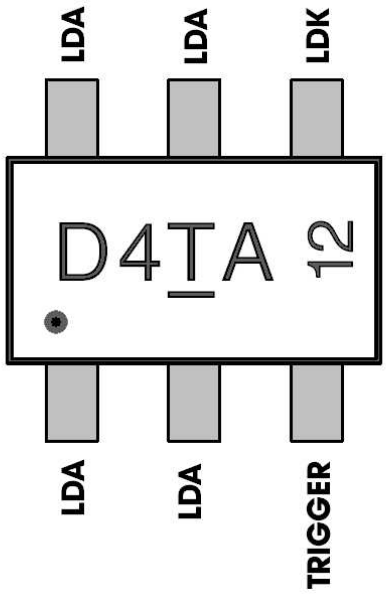
The part number provided below is for the standard LASORB TSOP6 Semiconductor Device, operable up to 20V. For other operating voltage levels, contact Pangolin.

Device part number	Comment
TSOP6/4G-20V	For applications up to 20 volts

ELECTRICAL CHARACTERISTICS @ T_J = 25° C

Parameter	Min.	Typ.	Max.	Units	Conditions
Maximum LDA to LDK Voltage			20	V	leakage current = 30mA
ESD Event Pulsed Current			50	A	Absolute Maximum
20 microsecond Pulsed Current			30	A	Absolute Maximum
Continuous Power Dissipation			2	W	25° C
Junction and Storage Temperature Range	-55		+150	°C	Absolute Maximum
LDA to LDK impedance when active			0.033	Ω	
LDA to LDK leakage current when inactive			10	uA	LDA to LDK = 15V
Continuous Reverse Bias Current			2.9	A	Absolute Maximum
Reverse Bias Recovery Time		22	29	nS	I = 8A

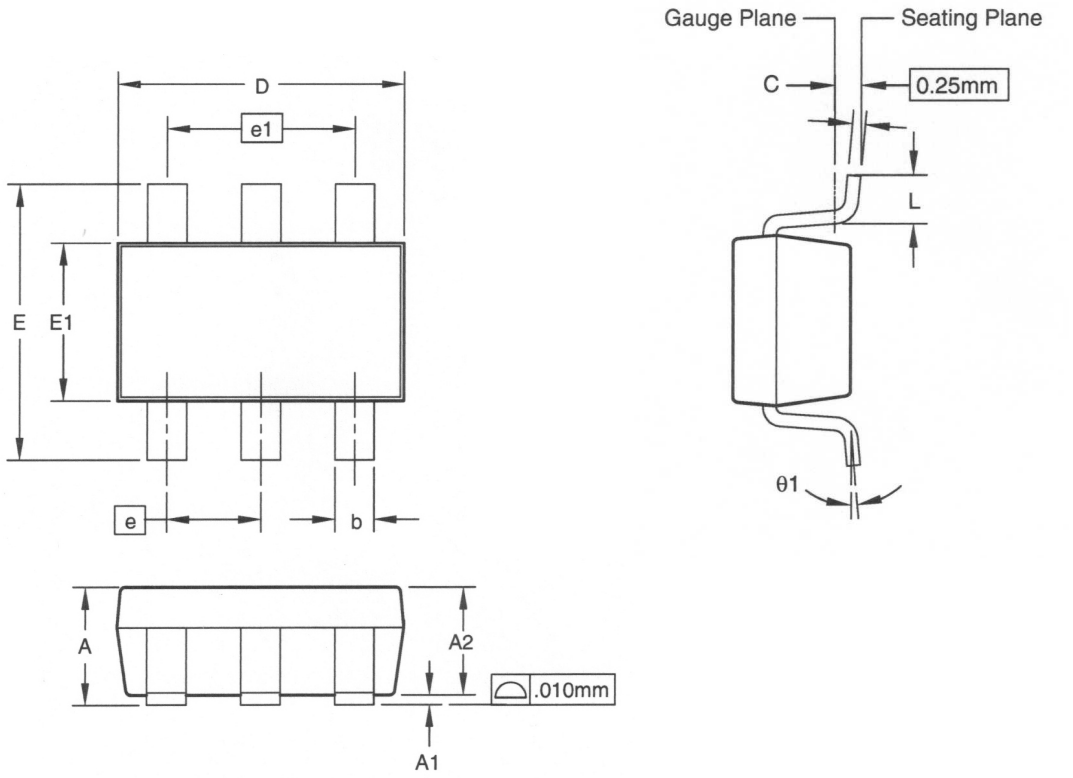
TSOP-6 PIN FUNCTIONS AND MARKING DESCRIPTION



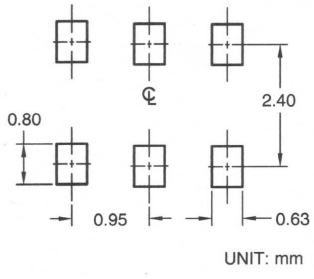
Marking notes:

D4 = Fourth-generation LASORB device
TA12 = Manufacture Lot Number

TSOP-6 Package Dimensions



RECOMMENDED LAND PATTERN



Dimensions in Milimiters and Inches

Millimeters	Min.	Nom.	Max.	Inches	Min.	Nom.	Max.
A	0.90	--	1.25	**A**	0.035	--	0.049
A1	0.00	--	0.15	**A1**	0.00	--	0.006
A2	0.70	1.10	1.20	**A2**	0.028	0.043	0.047
b	0.30	0.40	0.50	**b**	0.012	0.016	0.020
C	0.08	0.13	0.20	**C**	0.003	0.005	0.008
D	2.70	2.90	3.10	**D**	0.106	0.114	0.122
E	2.50	2.80	3.10	**E**	0.098	0.110	0.122
E1	1.50	1.60	1.70	**E1**	0.059	0.063	0.067
e	0.95 BSC			**e**	0.037 BSC		
e1	1.90 BSC			**e1**	0.075 BSC		
L	0.30	--	0.60	**L**	0.012	--	0.024
Θ1	0°	--	8°	**Θ1**	0°	--	8°

Notes:
1. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 0.1 mm [0.004 inches].
2. Dimension L is measured in gauge plane.
3. Tolerance =/- 0.1mm [0.004 inches] unless otherwise specified.
4. Followed from JEDEC MO-178C & MO-193C.

Controlling dimension is in millimeters, converted inch dimensions are not necessarily exact.

MORE INFORMATION

More information about LASORB, including additional application hints and tips can be found on the LASORB web site at www.lasorb.com.

PATENT AND TRADEMARK INFORMATION

Australia Patent Number: 2009268619
German Patent (Utility Model) Number: 20 2009 013 825.9
United States Patent Number: 8,902,557
International Patent Application Number: PCT/US2009/049999
Other International Patents Pending

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