



Computer Switching Diode

Screening in
reference to
MIL-PRF-19500
available

DESCRIPTION

These popular 1N4149, 1N4151, 1N4154 and 1N4446 – 1N4449 series of JEDEC registered switching/signal diodes are available with internal metallurgical bonded construction. These small low capacitance diodes, with very fast switching speeds, are hermetically sealed and bonded into a double-plug DO-35 package. They may be used in a variety of fast switching applications including computers and peripheral equipment such as magnetic cores, thin-film memories, plated-wire memories, as well as decoding or encoding applications, etc. Microsemi also offers a variety of other switching/signal diodes.

Important: For the latest information, visit our website <http://www.microsemi.com>.

FEATURES

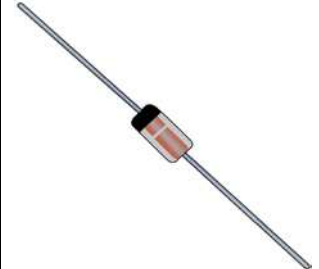
- Popular JEDEC registered 1N4149, 51, 54 and 1N4446 – 49 series.
- Hermetically sealed glass construction.
- Metallurgically bonded.
- Double plug construction.
- Very low capacitance.
- Very fast switching speeds with minimal reverse recovery times.
- Screening available in reference to MIL-PRF-19500.
(See [part nomenclature](#) for all available options.)
- RoHS compliant versions available.

APPLICATIONS / BENEFITS

- High frequency data lines.
- Small size for high density mounting using flexible thru-hole leads (see package illustration).
- RS-232 & RS-422 interface networks.
- Ethernet 10 Base T.
- Switching core drivers.
- LAN.
- Computers.

MAXIMUM RATINGS @ 25 °C

Parameters/Test Conditions	Symbol	Value	Unit
Junction	T_J	-65 to +150	°C
Storage Temperature	T_{STG}	-65 to +200	°C
Reverse Voltage, Maximum (Peak) Total Value 1N4154: 1N4149, 1N4151, 1N4446, 1N4447, 1N4448, 1N4449:	V_{RM}	35 75	V
Average Rectified Current	I_o	200	mA
Non-Repetitive Sinusoidal Surge Current (8.3 mS)	I_{FSM}	500	mA



**DO-35 (DO-204AH)
Package**

MSC – Lawrence

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MSC – Ireland

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Fax: +353 (0) 65 6822298

Website:

www.microsemi.com

MECHANICAL and PACKAGING

- CASE: Hermetically sealed glass package.
- TERMINALS: Tin/lead plated or RoHS compliant matte-tin over copper clad steel solderable per MIL-STD-750, method 2026.
- POLARITY: Cathode indicated by band.
- MARKING: Part number.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: 0.2 grams.
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE

MQ 1N4149 -1 (e3)

Reliability Level

MQ (reference JAN)
MX (reference JANTX)
MV (reference JANTXV)
MSP (reference JANS)
Blank = Commercial grade

JEDEC type number

(see [Electrical Characteristics](#) table)

RoHS Compliance

e3 = RoHS compliant
Blank = non-RoHS compliant

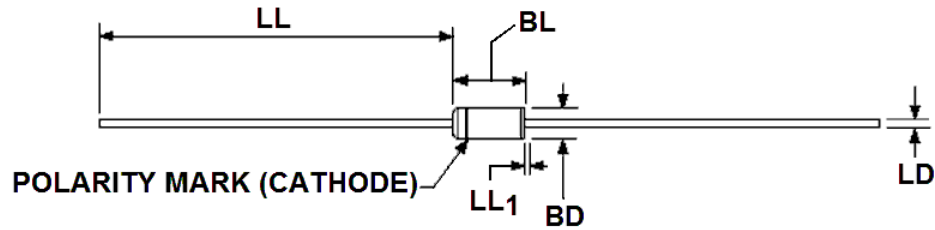
Metallurgically Bonded

SYMBOLS & DEFINITIONS

Symbol	Definition
I_R	Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage and temperature.
I_o	Average Rectified Forward Current: The output current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
t_{rr}	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.
V_F	Forward Voltage: The forward voltage the device will exhibit at a specified current (typically shown as maximum value).
V_R	Reverse Voltage: The reverse voltage dc value, no alternating component.
V_{RWM}	Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range excluding all transient voltages (ref JESD282-B). Also sometimes known as PIV.

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise noted

Type	Working Peak Reverse Voltage V_{RWM}	Forward Voltage V_F					Reverse Current $I_R @ V_R$		Reverse Current @ 150 °C $I_R @ V_R$		Junction Capacitance $C_J @ 0V$	Reverse Recovery Time t_{rr}
		@ 10 mA	@ 20 mA	@ 30 mA	@ 50 mA	@ 100 mA	V	nA	V	µA		
1N4149-1	75	1.0	-	-	-	-	20	25	20	50	4 pF	4 ns
1N4151-1	75	-	-	-	1.0	-	50	50	50	50	4 pF	2 ns
1N4154-1	35	-	-	1.0	-	-	25	100	25	100	4 pF	2 ns
1N4446-1	75	-	1.0	-	-	-	20	25	20	50	4 pF	4 ns
1N4447-1	75	-	1.0	-	-	-	20	25	20	50	4 pF	4 ns
1N4448-1	75	-	-	-	-	1.0	20	25	20	50	4 pF	4 ns
1N4449-1	75	-	-	1.0	-	-	20	25	20	50	2 pF	4 ns

PACKAGE DIMENSIONS


Ltr	Dimensions				Notes
	Inch		Millimeters		
	Min	Max	Min	Max	
BD	.055	.090	1.40	2.29	3
BL	.120	.200	3.05	5.08	3
LD	.018	.022	0.46	0.56	
LL	1.000	1.500	25.40	38.10	
LL ₁		.050		1.27	4

NOTES:

1. Dimensions are in inch.
2. Millimeters are given for general information only.
3. Package contour optional within BD and length BL. Heat slugs, if any, shall be included within this cylinder but shall not be subject to minimum limit of BD. The BL dimension shall include the entire body including slugs.
4. Within this zone lead, diameter may vary to allow for lead finishes and irregularities other than heat slugs.
5. In accordance with ASME Y14.5M, diameters are equivalent to ϕ x symbology.