



Switching Diode

Qualified per MIL-PRF-19500/193

Qualified Level:
JAN

DESCRIPTION

These popular 1N457 – 1N459 series of JEDEC registered switching/signal diodes are metallurgically bonded. 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. Microsemi also offers a variety of other switching/signal diodes.

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

FEATURES

- JEDEC registered 1N457A thru 1N459A series.
- Tightened V_F of 1 V max at 100 mA.
- Metallurgically bonded.
- Hermetically sealed.
- Double plug construction.
- JAN qualification per MIL-PRF-19500/193 available.
- RoHS compliant versions available (commercial grade only).

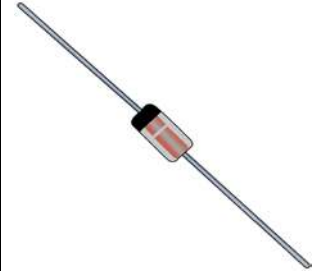
APPLICATIONS / BENEFITS

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

MAXIMUM RATINGS @ 25 °C unless stated otherwise.

Parameters/Test Conditions	Symbol	Value	Unit
Junction Temperature	T_J	-65 to +150	°C
Storage Temperature	T_{STG}	-65 to +175	°C
Maximum Reverse Voltage	V_{RM}	1N457A	70
		1N458A	150
		1N459A	200
Working Peak Reverse Voltage	V_{RWM}	1N457A	60
		1N458A	125
		1N459A	175
Maximum Average dc Output Current @ $T_A = +25\text{ °C}^{(1)}$	I_O	150	mA
Forward Current	I_F	1N457A	225
		1N458A	165
		1N459A	120
Steady-State Power Dissipation	P_D	500	mW

Notes: 1. Derate I_O linearly to 0.0 mA at +150 °C.



DO-35 Package

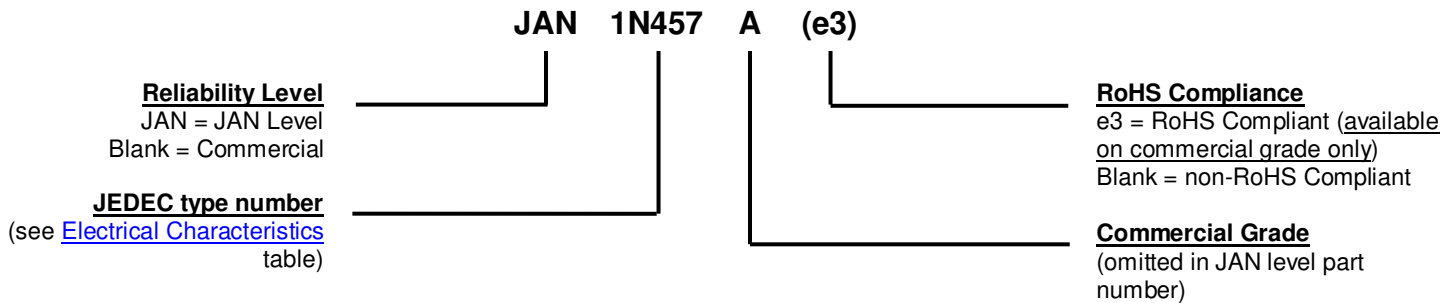
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MECHANICAL and PACKAGING

- CASE: Hermetically sealed glass package.
- TERMINALS: Tin/Lead or RoHS compliant matte/tin (commercial grade only) plated copper clad steel.
- MARKING: Blue body coat with black digits.
- POLARITY: Cathode end is banded.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: 0.2 grams.
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE

SYMBOLS & DEFINITIONS

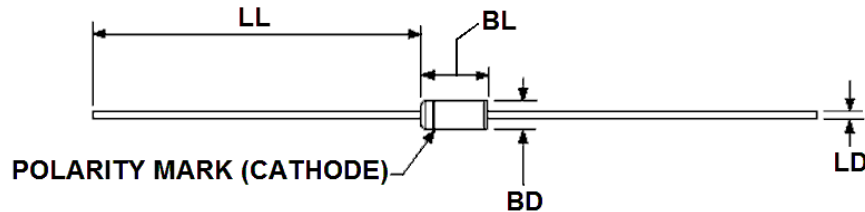
Symbol	Definition
I_F	Forward Current.
I_O	Average Rectified Output Current: The Output Current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
I_R	Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage and temperature.
V_F	Maximum Forward Voltage: The maximum forward voltage the device will exhibit at a specified current.
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.
V_{WM}	Working Peak Voltage: The maximum peak voltage that can be applied over the operating temperature range. This is also referred to as Standoff Voltage.

ELECTRICAL CHARACTERISTICS @ 25 °C unless stated otherwise.

Part Number	Forward Voltage	Reverse Current			Low Temp Operating Forward Voltage
	$V_{F1} @ I_F$ (Note 1)	$I_{R1} @ V_{RWM}$	$I_{R2} @ V_{RM}$	$I_{R3} @ V_{RWM}$	$V_{F2} @ I_F = 100 \text{ mA}$ pulsed
	V	$T_A = +25 \text{ °C}$ nA	$T_A = +25 \text{ °C}$ μA	$T_A = +150 \text{ °C}$ μA	$T_A = -55 \text{ °C}$ V
1N457	1.0	25	1	5	1.2
1N458	1.0	25	1	5	1.2
1N459	1.0	25	1	5	1.2

NOTES:

- $I_F = 100 \text{ mA}$, $t_p = 8.5 \text{ ms}$, max duty cycle 2 percent (pulsed).

PACKAGE DIMENSIONS

NOTES:

- Dimensions are in inches.
- Millimeters are given for general information only.
- In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	.056	.075	1.42	1.90
BL	.140	.180	3.56	4.57
LD	.018	.022	0.46	0.56
LL	1.000	1.500	25.40	38.10