RoHS
Available on commercial versions

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.

DO-35 Package

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	1N457A	V_{RM}	70	V
	1N458A		150	
	1N459A		200	
Working Peak Reverse Voltage	1N457A	V_{RWM}	60	V
	1N458A		125	
	1N459A		175	
Maximum Average dc Output Current @ T_A = +25 °C (1)		I_O	150	mA
Forward Current	1N457A	I_F	225	mA
	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.

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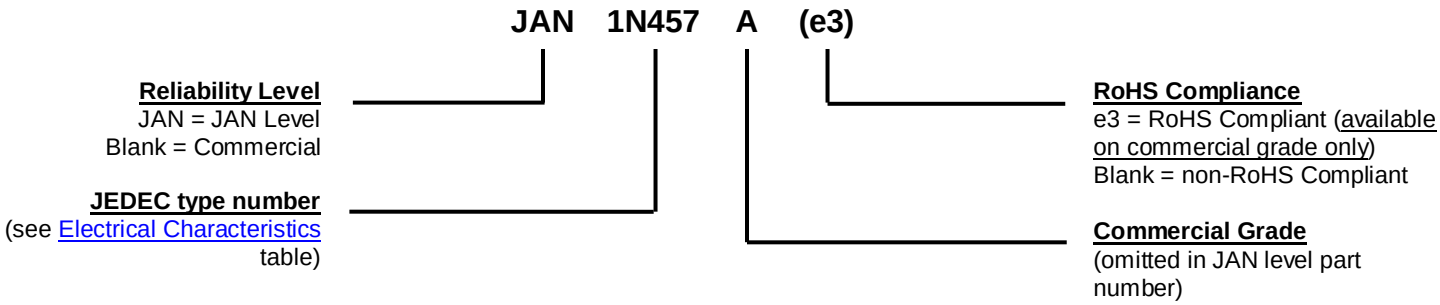
MECHANICAL and PACKAGING

- 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.

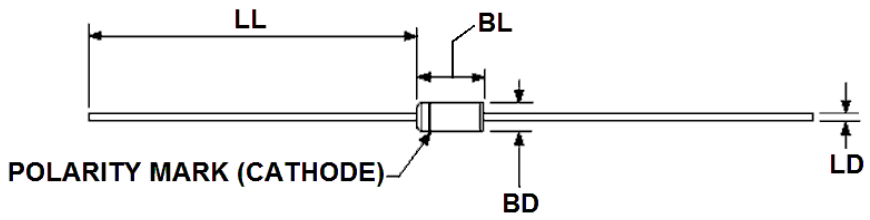
ELECTRICAL CHARACTERISTICS @ 25 °C unless stated otherwise.

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

1. I_F = 100 mA, t_p = 8.5 ms, max duty cycle 2 percent (pulsed).

PACKAGE DIMENSIONS



NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. 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