



## 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).

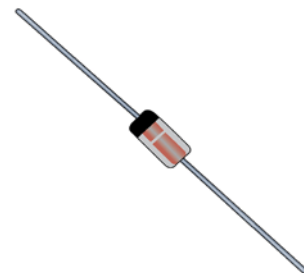
### APPLICATIONS / BENEFITS

- 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 1N458A 1N459A	V
		70	
		150	
Working Peak Reverse Voltage	$V_{RWM}$	1N457A 1N458A 1N459A	V
		60	
		125	
Maximum Average dc Output Current @ $T_A = +25\text{ °C}$ <sup>(1)</sup>	$I_O$	150	mA
Forward Current	$I_F$	1N457A 1N458A 1N459A	mA
		225	
		165	
Steady-State Power Dissipation	$P_D$	500	mW

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



### DO-35 Package

**MSC – Lawrence**  
6 Lake Street,  
Lawrence, MA 01841  
1-800-446-1158  
(978) 620-2600  
Fax: (978) 689-0803

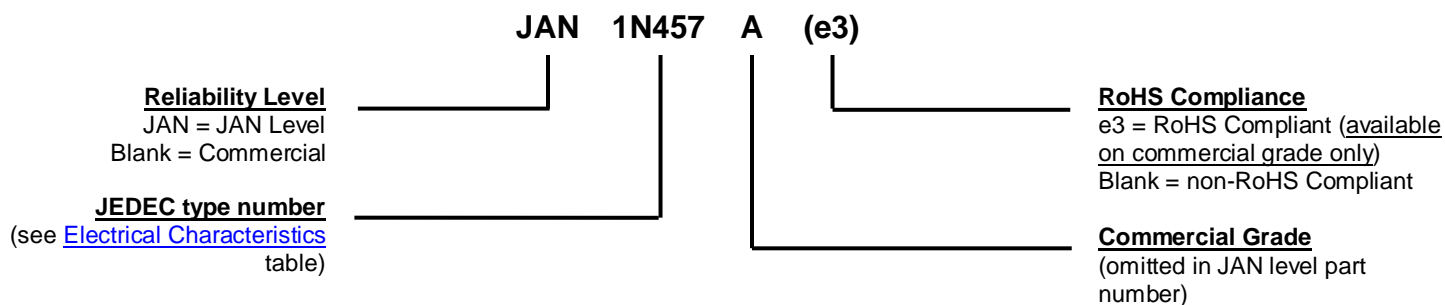
**MSC – Ireland**  
Gort Road Business Park,  
Ennis, Co. Clare, Ireland  
Tel: +353 (0) 65 6840044  
Fax: +353 (0) 65 6822298

**Website:**  
[www.microsemi.com](http://www.microsemi.com)

### 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

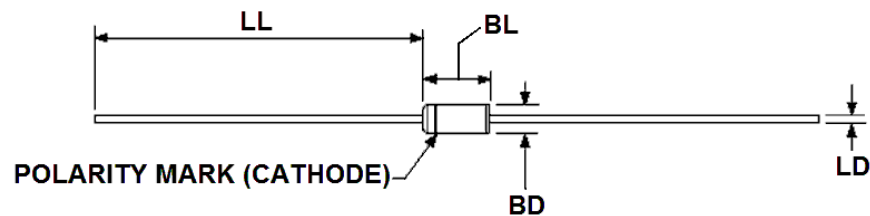
Symbol	Definition
$I_F$	Forward Current.
$I_O$	Average Rectified Output Current: The Output Current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
$I_R$	Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage 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	$T_A = +25^\circ\text{C}$ nA	$T_A = +25^\circ\text{C}$ $\mu\text{A}$	$T_A = +150^\circ\text{C}$ $\mu\text{A}$	$T_A = -55^\circ\text{C}$ 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:**

1.  $I_F = 100 \text{ mA}$ ,  $t_p = 8.5 \text{ ms}$ , 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  $\Phi x$  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