



**Discrete POWER & Signal  
Technologies**

## 1N/FDLL 456/A - 1N/FDLL 459/A



**DO-35**



**LL-34**

THE PLACEMENT OF THE EXPANSION GAP  
HAS NO RELATIONSHIP TO THE LOCATION  
OF THE CATHODE TERMINAL

### COLOR BAND MARKING

DEVICE	1ST BAND	2ND BAND
FDLL456	BROWN	WHITE
FDLL456A	BROWN	WHITE
FDLL457	RED	BLACK
FDLL457A	RED	BLACK
FDLL458	RED	BROWN
FDLL458A	RED	BROWN
FDLL459	RED	RED
FDLL459A	RED	RED

## High Conductance Low Leakage Diode

Sourced from Process 1M.

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units	
W <sub>IV</sub>	Working Inverse Voltage	456/A	25	V
		457/A	60	V
		458/A	125	V
		459/A	175	V
I <sub>O</sub>	Average Rectified Current	200	mA	
I <sub>F</sub>	DC Forward Current	500	mA	
i <sub>f</sub>	Recurrent Peak Forward Current	600	mA	
I <sub>f(surge)</sub>	Peak Forward Surge Current			
	Pulse width = 1.0 second	1.0	A	
	Pulse width = 1.0 microsecond	4.0	A	
T <sub>stg</sub>	Storage Temperature Range	-65 to +200	°C	
T <sub>J</sub>	Operating Junction Temperature	175	°C	

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### NOTES:

- 1) These ratings are based on a maximum junction temperature of 200 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		1N / FDLL 456/A - 459/A	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	500	mW
		3.33	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	300	°C/W

# High Conductance Low Leakage Diode

(continued)

## Electrical Characteristics

T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
B <sub>V</sub>	Breakdown Voltage	<b>456/A</b> I <sub>R</sub> = 100 μA	30		V
		<b>457/A</b> I <sub>R</sub> = 100 μA	70		V
		<b>458/A</b> I <sub>R</sub> = 100 μA	150		V
		<b>459/A</b> I <sub>R</sub> = 100 μA	200		V
I <sub>R</sub>	Reverse Current	<b>456/A</b> V <sub>R</sub> = 25 V		25	nA
		V <sub>R</sub> = 25 V, T <sub>A</sub> = 150°C		5.0	μA
		<b>457/A</b> V <sub>R</sub> = 60 V		25	nA
		V <sub>R</sub> = 60 V, T <sub>A</sub> = 150°C		5.0	μA
		<b>458/A</b> V <sub>R</sub> = 125 V		25	nA
		V <sub>R</sub> = 125 V, T <sub>A</sub> = 150°C		5.0	μA
V <sub>F</sub>	Forward Voltage	<b>456</b> I <sub>F</sub> = 40 mA		1.0	V
		<b>457</b> I <sub>F</sub> = 10 mA		1.0	V
		<b>458</b> I <sub>F</sub> = 7.0 mA		1.0	V
		<b>459</b> I <sub>F</sub> = 3.0 mA		1.0	V
		<b>456/A-459/A</b> I <sub>F</sub> = 100 mA		1.0	V
C <sub>O</sub>	Diode Capacitance	V <sub>R</sub> = 0, f = 1.0 MHz		6.0	pF

1N/FD/L 456/A / 457/A / 458/A / 459/A