National Semiconductor™

Discrete POWER & Signal Technologies

FDH/FDLL 400 / 444

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**
FDLL400	BROWN	VIOLET
FDLL444	BROWN	GRAY

High Voltage General Purpose Diode

Sourced from Process 1J.

Absolute Maximum Ratings*   TA = 25°C unless otherwise noted

Symbol	Parameter		Value	Units
W_{IV}	Working Inverse Voltage	**FDH/FDLL 400**	150	V
		FDH/FDLL 444	100	V
I_O	Average Rectified Current		200	mA
I_F	DC Forward Current		500	mA
i_f	Recurrent Peak Forward Current		600	mA
$i_{f(surge)}$	Peak Forward Surge Current Pulse width = 1.0 second Pulse width = 1.0 microsecond		 1.0 4.0	 A A
T_{stg}	Storage Temperature Range		-65 to +200	°C
T_J	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
		FDH/FDLL 400 / 444	
P_D	Total Device Dissipation Derate above 25°C	500 3.33	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	°C/W

High Voltage General Purpose Diode
(continued)

Electrical Characteristics   TA = 25°C unless otherwise noted

Symbol	Parameter		Test Conditions	Min	Max	Units
B_V	Breakdown Voltage	**FDH/FDLL444**	$I_R = 100\ \mu A$	150		V
		FDH/FDLL400	$I_R = 100\ \mu A$	200		V
I_R	Reverse Current	**FDH/FDLL444**	$V_R = 100\ V$		50	nA
			$V_R = 100\ V,\ T_A = 150°C$		100	μA
		FDH/FDLL400	$V_R = 150\ V$		100	nA
			$V_R = 150\ V,\ T_A = 150°C$		100	μA
V_F	Forward Voltage	**FDH/FDLL444**	$I_F = 200\ mA$		1.1	V
			$I_F = 300\ mA$		1.2	V
		FDH/FDLL400	$I_F = 200\ mA$		1.0	V
			$I_F = 300\ mA$		1.1	V
C_O	Diode Capacitance	**FDH/FDLL444**	$V_R = 0,\ f = 1.0\ MHz$		2.5	pF
		FDH/FDLL400			2.0	pF
T_{RR}	Reverse Recovery Time					
		FDH/FDLL444	$I_F = I_R = 30\ mA,\ I_{rr} = 3.0\ mA,\ R_L = 100\ \Omega$		60	nS
		FDH/FDLL400	$I_F = I_R = 30\ mA,\ I_{rr} = 3.0\ mA,\ R_L = 100\ \Omega$		50	nS