

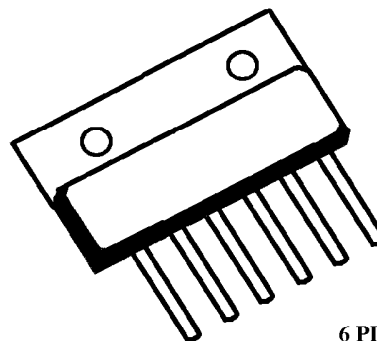


NES

NEW ENGLAND SEMICONDUCTOR

NFD410

ENHANCEMENT MODE HIGH VOLTAGE POWER MOSFET N-CHANNEL

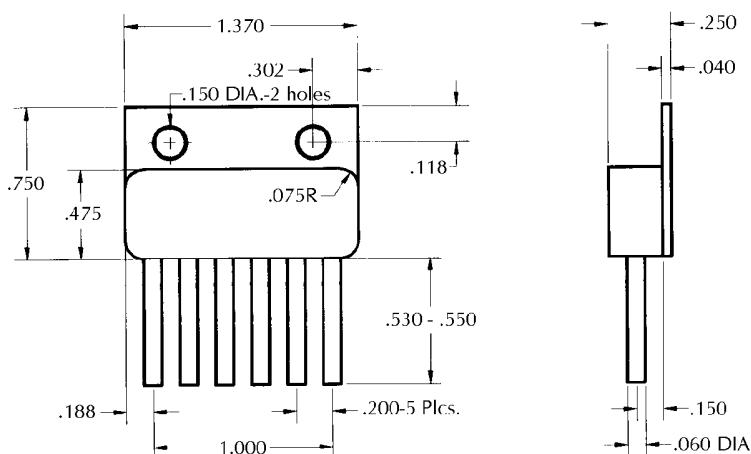


6 PIN SIP
DUAL

ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS / TEST CONDITIONS	SYMBOL	VALUE	UNITS
Drain-Source Voltage	V_{DS}	400	V
Gate-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current	I_D	20	A
Pulsed Drain Current	I_{DM}	90	A
Power Dissipation	P_D	125	W
$T_A = 25^\circ\text{C}$			
Operating Junction & Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance	R_{thJC}	1.0	$^\circ\text{C/W}$

MECHANICAL OUTLINE



NEW ENGLAND SEMICONDUCTOR

6 Lake Street Lawrence, MA 01841
1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

T4-4.8-860-938 REV: --

**NES****NEW ENGLAND SEMICONDUCTOR****NFD410****ELECTRICAL CHARACTERISTICS ($T_J = 25^{\circ}\text{C}$ unless otherwise noted)**

PARAMETERS / TEST CONDITIONS		SYMBOL	MIN.	TYP.	MAX.	UNITS
Drain-Source Breakdown Voltage $V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$		$V_{(BR)DSS}$	400			V
Gate Threshold Voltage $V_{DS} = V_{GS}, I_D = 1.0\text{ mA}$		$V_{GS(th)}$	2.0		4.0	V
Diode Forward Voltage (1) $V_{GS} = 0, I_S = I_D(\text{cont.})$		V_{SD}			1.3	V
Gate Source Leakage Current $V_{GS} = \pm 30\text{ V}, V_{DS} = 0\text{ V}$		I_{GSS}			± 100	nA
Zero Gate Voltage Drain Current $V_{DS} = V_{DSS}, V_{GS} = 0\text{ V}, T_A = 25^{\circ}\text{C}$		I_{DSS}			250	μA
Zero Gate Voltage Drain Current $V_{DS} = 0.8 V_{DSS}, V_{GS} = 0\text{ V}, T_A = 125^{\circ}\text{C}$		I_{DSS}			1000	μA
Static Drain-Source On Resistance (1) $V_{GS} = 10\text{ V}, I_D = 0.5, I_D(\text{cont.})$		$R_{DS(on)}$			0.2	Ω
On-State Drain Current (1) $V_{DS} \geq I_{D(on)} \times R_{DS(on)} \text{ max.}, V_{GS} = 10\text{ V}$		$I_{D(on)}$	2.0			A
Input Capacitance	$V_{GS} = 0\text{ V}$	C_{iss}			2950	pF
Output Capacitance	$V_{DS} = 25\text{ V}$	C_{oss}			750	
Reverse Transfer Capacitance	$f = 1.0\text{ MHz}$	C_{rss}			310	
Total Gate Charge	$V_{DD} = 0.5 V_{DSS}, V_{GS} = 10\text{ V}$ $I_D = I_D(\text{cont.})$	Q_g			130	nC
Turn-On Delay Time	$V_{DD} = 0.5 V_{DSS},$	$t_{d(on)}$			30	ns
Rise Time	$I_D = I_D(\text{cont.}),$	t_r			60	
Turn-Off Delay Time	$V_{GS} = 15\text{ V},$	$t_{d(off)}$			95	
Fall Time	$R_G = 1.8\text{ }\Omega$	t_f			85	

(1) Pulse Test: Pulse width < 380 μs , Duty cycle < 2%.**NEW ENGLAND SEMICONDUCTOR**6 Lake Street Lawrence, MA 01841
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