



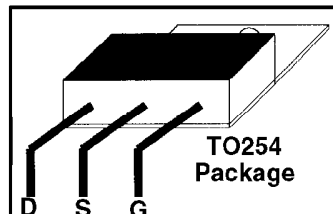
NES

NEW ENGLAND SEMICONDUCTOR

NES6060

POWER MOSFET - N CHANNEL

- Switching Power Supplies
- Repetitive Avalanche Rating
- Isolated Hermetic Package
- High Reliability



POWER
MOSFET
600 VOLTS
 $r_{DS(on)} .6 \Omega$

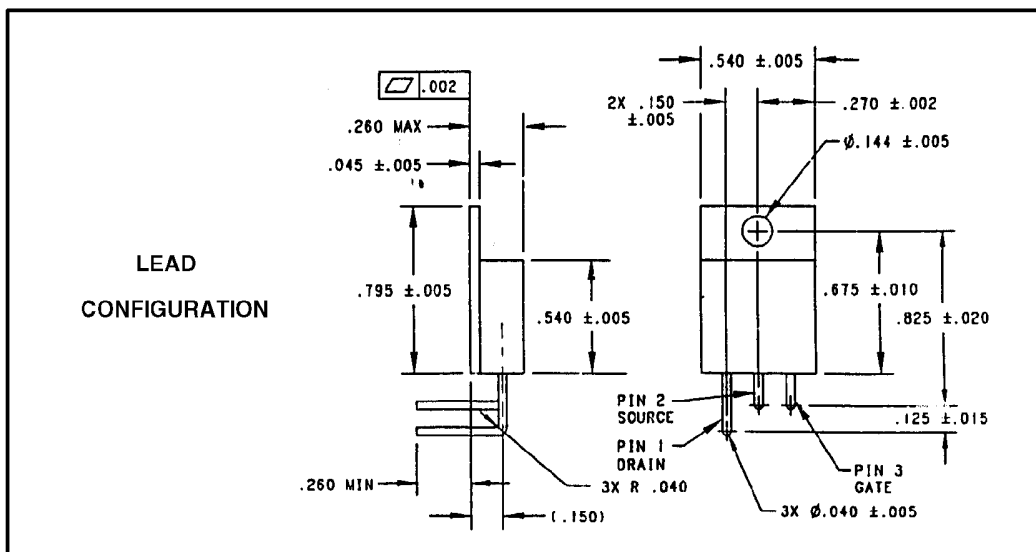
ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	NES6060	UNITS
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	± 30	V
Continuous Drain Current	$T_C = 25^\circ\text{C}$	I_D	10.5	A
Pulsed Drain Current (1)		I_{DM}	42 ¹	A
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	150	W
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Lead Temperature (1/16" from case for 10 secs.)		T_L	300	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	Symbol	Typ.	Max.	Units
Junction-to -Case	R_{thJC}	-		K/W
Junction-to-Ambient	R_{thJA}	-		K/W
Case-to-Sink	R_{thCS}		-	K/W

(1) Pulse width limited by maximum junction temperature.



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6 Lake Street Lawrence, MA. 01841

1-800-446-1158 / (978) 794-1666 / FAX (978) 689-0803

T4-4.8-860-903
REV:--



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NES6060

ELECTRICAL CHARACTERISTICS ($T_J = 25^{\circ}\text{C}$ unless otherwise noted)

PARAMETERS/TEST CONDITIONS		Symbol	Min	Typ.	Max.	Units
Drain-Source Breakdown Voltage $V_{GS} = 0, I_D = 250 \mu\text{A}$		$V_{(BR)DDS}$	600	-	-	V
Gate Threshold Voltage $V_{DS} = V_{GS}, I_D = 1000 \mu\text{A}$		$V_{GS(th)}$	2.0	-	4.0	V
Gate-Body Leakage $V_{DS} = 0, V_{GS} = \pm 30 \text{ V}$		I_{GSS}	-	-	100	nA
Zero Gate Voltage Drain Current $V_{DS} = V_{(BR)DDS}, V_{GS} = 0$		I_{DSS}	-	-	250	μA
Zero Gate Voltage Drain Current $V_{DS} = 0.8 \times V_{(BR)DDS}, V_{GS} = 0, T_J = 125^{\circ}\text{C}$		I_{DSS}	-	-	1000	μA
On-State Drain Current $V_{GS} = 10 \text{ V}$		$I_{D(on)}$	10.5	-	-	A
Drain-Source On-State Resistance (1) $V_{GS} = 10 \text{ V}, I_D = 5.2 \text{ A}$		$r_{DS(on)}$	-	-	.60	Ω
Drain-Source On-State Resistance (1) $V_{GS} = \text{ V}, I_D = \text{ A}$		$r_{DS(on)}$	-	-	-	Ω
Body Drain Diode (1) $I_S = 10.5 \text{ A}, V_{GS} = 0 \text{ V}$		V_{SD}	-	-	1.3	V_{PK}
Input Capacitance	$V_{GS} = 0$	C_{iss}	-	-	1800	pF
Output Capacitance	$V_{DS} = 25 \text{ V}$	C_{oss}	-	-	390	
Reverse Transfer Capacitance	$f = 1 \text{ MHz}$	C_{rss}	-	-	157	
Total Gate Charge	$V_{DS} = 0.5 \times V_{(BR)DDS},$ $V_{GS} = 10 \text{ V}, I_D = 10.5 \text{ A}$ (Gate charge is essentially independent of operating temperature)	Q_g	-	-	105	nC
Gate-Source Charge		Q_{gs}	-	-	12	
Gate-Drain Charge		Q_{gd}	-	-	53	
Turn-On Delay Time	$V_{DD} = 300 \text{ V},$ $I_D = 10.5 \text{ A},$ (Switching time is essentially independent of operating temperature)	$t_{d(on)}$	-	-	26	ns
Rise time		t_r	-	-	36	
Turn-Off Delay Time		$t_{d(off)}$	-	-	77	
Fall Time		t_f	-	-	34	

(1) Pulse test: Pulse width < 300 μsec . Duty Cycle $\leq 2\%$.

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