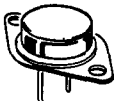
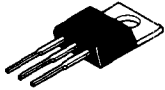


# MOSPOWER Selector Guide (Continued)

## N-Channel MOSPOWER (Continued)

Device	Breakdown Voltage (Volts)	r <sub>DS(on)</sub> (Ohms)	I <sub>D</sub> Continuous (Amps)	Power Dissipation (Watts)	Part Number	
 TO-3	100	0.055	40.0	150	IRF150	
	100	0.08	33.0	150	IRF152	
	100	0.085	27.0	125	IRF140	
	100	0.11	24.0	125	IRF142	
	100	0.18	14.0	100	VN1000A	
	100	0.18	14.0	75	IRF130	
	100	0.25	12.0	100	VN1001A	
	100	0.25	12.0	75	IRF132	
	100	0.3	8.0	40	IRF120	
	100	0.4	7.0	40	IRF122	
	90	4.0	1.9	25	2N6658	
	90	4.5	1.8	25	VN99AA	
	90	5.0	1.7	25	VN90AA	
	80	0.18	14.0	100	VN0800A	
	80	0.25	12.0	100	VN0801A	
	60	0.055	40.0	150	IRF151	
	60	0.08	33.0	150	IRF153	
	60	0.085	27.0	125	IRF141	
	60	0.11	24.0	125	IRF143	
	60	0.12	18.0	100	VN0600A	
	60	0.15	16.0	100	VN0601A	
	60	0.18	14.0	75	IRF131	
	60	0.25	12.0	75	IRF133	
	60	0.3	8.0	40	IRF121	
	60	0.4	10.0	80	VN64GA	
	60	0.4	7.0	40	IRF123	
	60	3.0	2.0	25	2N6657	
	60	3.5	2.0	25	VN67AA	
	40	0.12	18.0	100	VN0400A	
	40	0.15	16.0	100	VN0401A	
	35	1.8	2.0	25	2N6656	
	35	2.5	2.0	25	VN35AA	
	 TO-220AB	500	0.85	8.0	125	IRF840
		500	1.10	7.0	125	IRF842
		500	1.5	4.5	75	VN5001D
500		1.5	4.5	75	IRF830	
500		2.0	4.0	75	VN5002D	
500		2.0	4.0	75	IRF832	
500		3.0	2.5	40	IRF820	
500		4.0	2.0	40	IRF822	
450		0.85	8.0	125	IRF841	
450		1.10	7.0	125	IRF843	
450		1.5	4.5	75	VN4501D	
450		1.5	4.5	75	IRF831	
450		2.0	4.0	75	VN4502D	
450		2.0	4.0	75	IRF833	
450		3.0	2.5	40	IRF821	
450		4.0	2.0	40	IRF823	
400		0.55	10.0	125	IRF740	
400		0.80	8.0	125	IRF742	
400		1.0	6.0	75	VN4000D	
400		1.0	5.5	75	IRF730	
400		1.5	5.0	75	VN4001D	
400		1.5	4.5	75	IRF732	
400		1.8	3.0	40	IRF720	
400		2.5	2.5	40	IRF722	
350		0.55	10.0	125	IRF741	
350		0.80	8.0	125	IRF743	
350		1.0	6.0	75	VN3500D	
350		1.0	5.5	75	IRF731	
350		1.5	5.0	75	VN3501D	
350		1.5	4.5	75	IRF733	
350	1.8	3.0	40	IRF721		
350	2.5	2.5	40	IRF723		
240	6.0	1.4	20	VN2406D		

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# 60V N-Channel Enhancement Mode MOSPOWER

This power FET is designed especially for low power high frequency inverters, interface to CMOS and TTL logic, and line drivers.

## FEATURES

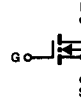
- High Input Impedance
- Extremely Fast Switching
- Rugged — Dissipation Limited SOA
- Internal Drain-Source Diode
- Low  $r_{DS(on)}$

## Product Summary

Part Number	$V_{DSS}$ (Volts)	$R_{DS(ON)}$ (Ohms)	Package
VN64GA	60	0.4	TO-3

## BENEFITS

- Reduced Component Count
- Simpler Designs
  - Directly Interfaces CMOS
- Improved Circuit Performance
- Increased Reliability

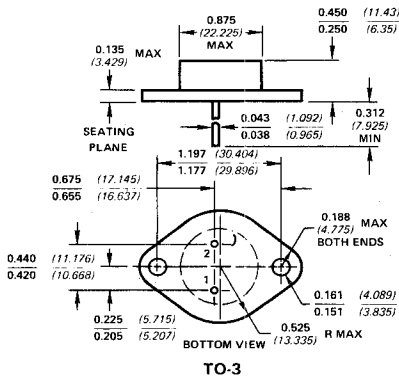


## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

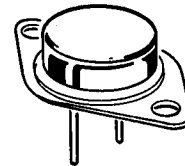
Drain-Source Voltage	60V	Linear Derating Factor	0.64W/ $^\circ\text{C}$
Drain-Gate Voltage	60V	Operating and Storage Temperature	-55 $^\circ\text{C}$ to +150 $^\circ\text{C}$
Gate Current (Peak)	$\pm 3\text{A}$	Lead Temperature (1/16" from Case for 10 secs)	+300 $^\circ\text{C}$
Gate-Source Voltage	$\pm 40\text{V}$		
Drain Current			
Continuous <sup>1</sup>	$\pm 10\text{A}$		
Pulsed <sup>2</sup>	$\pm 15\text{A}$		
Maximum Dissipation at 25 $^\circ\text{C}$ Case	80W		

Notes:  
 1. Limited by package dissipation.  
 2. Pulse test—80 $\mu\text{s}$  to 300 $\mu\text{s}$ , 1% duty cycle.

## PACKAGE DIMENSIONS



**PIN 1 — Gate**  
**PIN 2 — Source**  
**CASE — Drain**



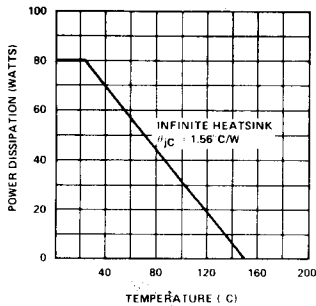
## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Min	Max	Unit	Test Conditions
<b>Static</b>				
$BV_{DSS}$ Drain-Source Breakdown	60		V	$V_{GS} = 0, I_D = 500 \mu\text{A}$
$V_{GS(th)}$ Gate Threshold Voltage	1	4	V	$V_{DS} = V_{GS}, I_D = 10 \text{ mA}$
$I_{GSS}$ Gate-Body Leakage		0.1	$\mu\text{A}$	$V_{GS} = 12\text{V}, V_{DS} = 0$
$I_{DSS}$ Zero Gate Voltage Drain Current		500	$\mu\text{A}$	$V_{DS} = 60\text{V}, V_{GS} = 0$
$V_{DS(on)}$ Drain-Source Saturation Voltage <sup>1</sup>		4.0	V	$V_{GS} = 12\text{V}, I_D = 10\text{A}$
$r_{DS(on)}$ Static-Drain-Source ON-State Resistance <sup>1</sup>		0.4	$\Omega$	$V_{GS} = 12\text{V}, I_D = 10\text{A}$
$I_{D(on)}$ ON-State Drain Current <sup>1</sup>	12.5		A	$V_{DS} = 25\text{V}, V_{GS} = 12\text{V}$
<b>Dynamic</b>				
$g_{fs}$ Forward Transconductance <sup>1</sup>	1.5		S	$V_{DS} = 20\text{V}, I_D = 5\text{A}$
$C_{iss}$ Input Capacitance		800	pF	$V_{DS} = 25\text{V}, V_{GS} = 0, f = 1 \text{ MHz}$
$C_{rfs}$ Reverse Transfer Capacitance		50		
$C_{oss}$ Common Source Output Capacitance		400		
$t_{ON}$ Turn-ON Time		60	ns	$V_{DD} = 50\text{V}, I_D \approx 5\text{A}, R_L = 10\Omega, R_{\theta} = 20\Omega$
$t_{OFF}$ Turn-OFF Time		80		
<b>Drain-Source Diode Characteristics</b>				
		<b>Typ</b>		
$V_{SD}$ Forward ON Voltage <sup>1</sup>		-0.95	V	$I_S = -4\text{A}, V_{GS} = 0$
$t_{rr}$ Reverse Recovery Time		110	ns	$V_{GS} = 0, I_F = I_R = 4.0\text{A}$

Note:

1. Pulse test: 80–300  $\mu\text{s}$ , 1% duty cycle.

**POWER DISSIPATION  
CASE TEMPERATURE**



**DC SAFE OPERATING REGION  
 $T_C = 25^\circ\text{C}$**

