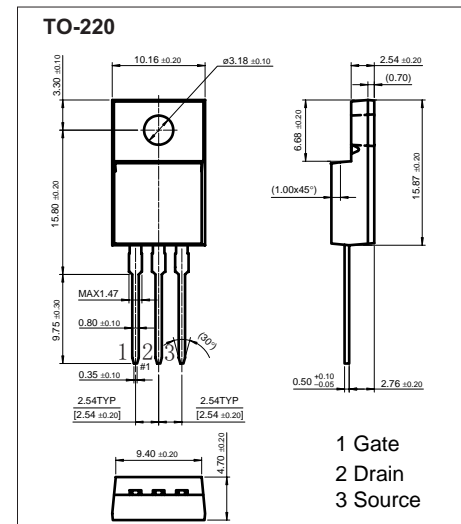
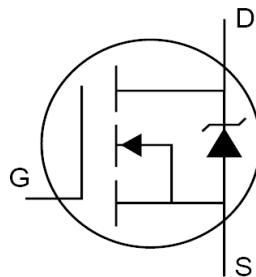


## N-Channel Power MOSFET 75N08

### Features

$V_{DS}=75V, R_{DS(on)}=0.009$  @  $V_{GS}=10V, I_D=30A$

$V_{DS}=75V, R_{DS(on)}=0.011$  @  $V_{GS}=4.5V, I_D=20A$




### Absolute Maximum Ratings $T_a = 25$

Parameter	Symbol	Rating	Unit
Drain- Source Voltage	$V_{DS}$	75	V
Continuous Drain Current	$I_D$	$\pm 75$	A
Continuous Drain Current	$I_D$	$\pm 66$	
Pulsed Drain Current*1	$I_{DM}$	$\pm 240$	
Power Dissipation $T_a = 25$	PD	250	W
Gate-to-Source Voltage	$V_{GS}$	$\pm 20$	V
Avalanche Current*1	IAR	$\pm 75$	A
Repetitive Avalanche Energy*1	EAR	280	mJ
Junction-to-Case	R <sub>JC</sub>	0.6	/W
Junction-to-Ambient	R <sub>JA</sub>	62.5	
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 175	

\*1 Duty Cycle 1 %

## 75N08

## Electrical Characteristics Ta = 25

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	VGS = 0V, ID = 250 $\mu$ A	75			V
Static Drain-to-Source On-Resistance	RDS(on)	VGS = 10V, ID = 30A			0.009	
Gate Threshold Voltage	VGS(th)	VDS = VGS, ID = 250 $\mu$ A	1		3	V
Forward Transconductance	gfs	VDS = 15V, ID = 30A	30			S
Drain-to-Source Leakage Current	IDSS	VDS = 60V, VGS = 0V			1	$\mu$ A
		VDS = 60V, VGS = 0V, TJ = 125			50	
Gate-to-Source Forward Leakage	IGSS	VGS = 20V			100	nA
Gate-to-Source Reverse Leakage		VGS = -20V			-100	
Total Gate Charge	Qg	VDS = 30 V, VGS = 10 V, ID = 75 A		121	150	nC
Gate-to-Source Charge	Qgs			20		
Gate-to-Drain Charge	Qgd			25		
Turn-On Delay Time	td(on)	VDD = 30V, RL=0.47 $\Omega$ , ID=75A, VGEN=10V RG=2.5		11	20	ns
Rise Time	tr			10	20	
Turn-Off Delay Time	td(off)			107	200	
Fall Time	tf			22	40	
Input Capacitance	Ciss	VGS= 0 V, VDS = 25 V, f = 1 MHz		5600		pF
Output Capacitance	Coss			820		
Reverse Transfer Capacitance	Crss			275		
Continuous Source Current ( Body Diode)	IS	MOSFET symbol showing the integral reverse p-n junction diode. 			75	A
Pulsed Source Current ( Body Diode) *1	ISM				240	
Diode Forward Voltage	VSD	TJ = 25 $^{\circ}$ C, IF = 75A, VGS = 0V*1			1.3	V
Reverse Recovery Time	trr	TJ = 25 $^{\circ}$ C, IF = 75A		80	120	ns
Reverse Recovery Charge	Qrr	di/dt = 100A/ $\mu$ s*1		0.32	0.54	$\mu$ C

\*1 Pulse width 300 $\mu$ s; duty cycle 2%.

\*2 Repetitive rating; pulse width limited by max

### ■ Marking

Marking	75N08
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# 75N08

■ Typical Characteristics

Figure 1. On-Region Characteristics

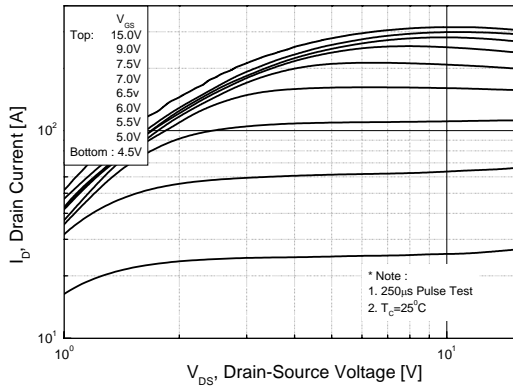


Figure 2. Transfer Characteristics

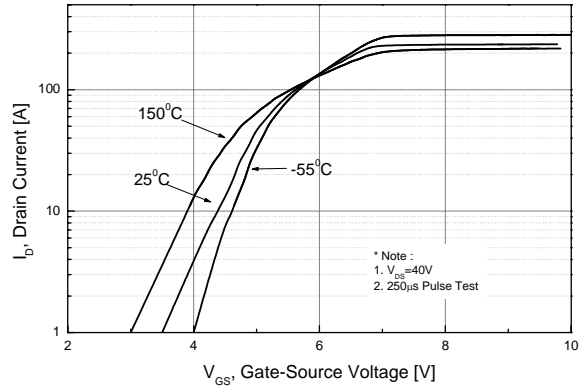


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

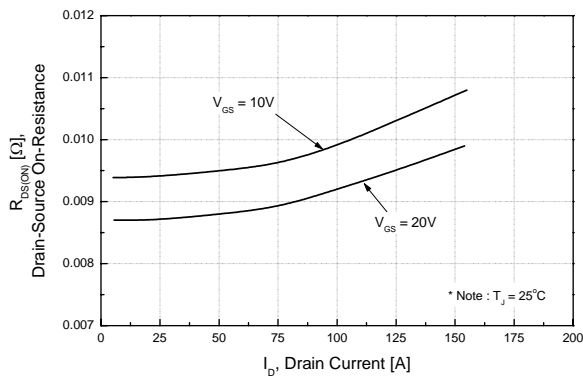


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

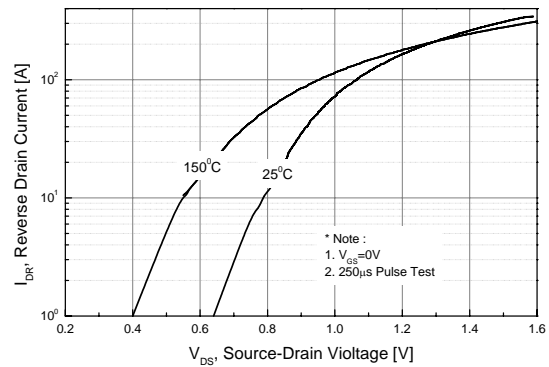


Figure 5. Capacitance Characteristics

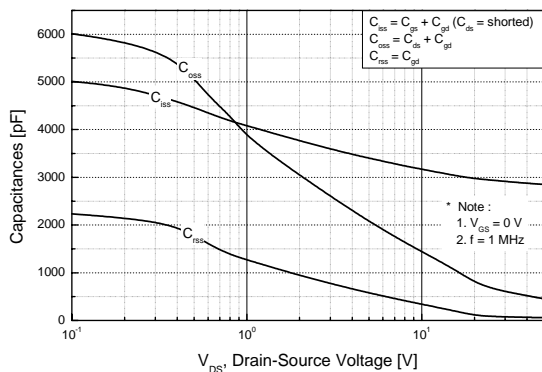
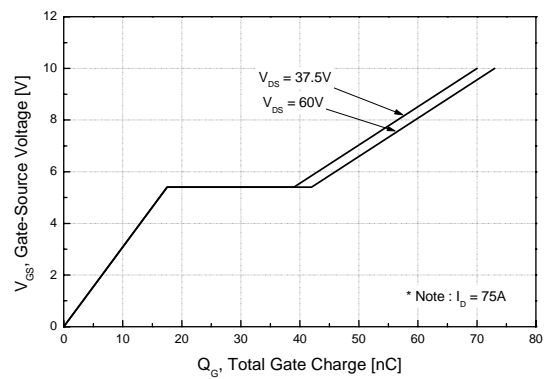


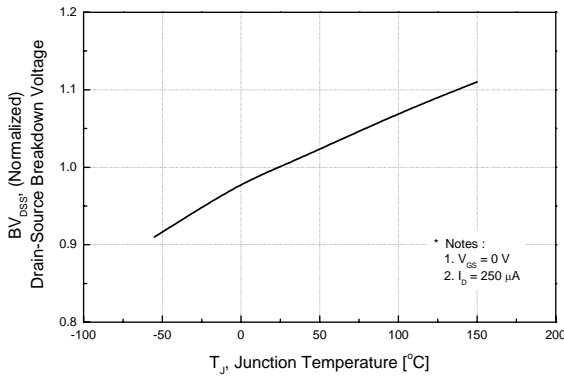
Figure 6. Gate Charge Characteristics



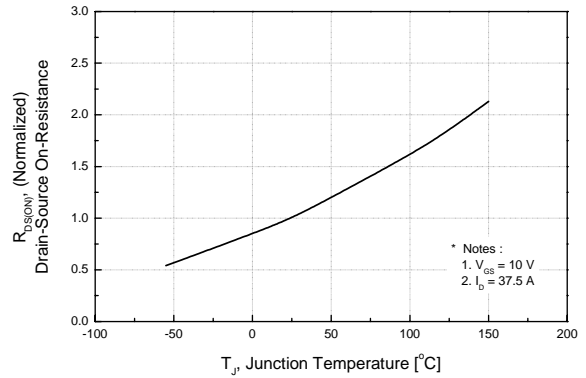
# 75N08

■ Typical Characteristics

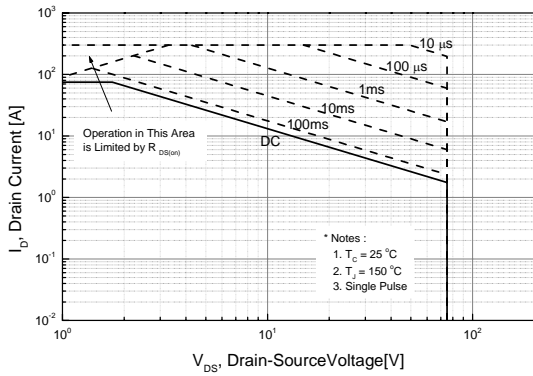
**Figure 7. Breakdown Voltage Variation vs. Temperature**



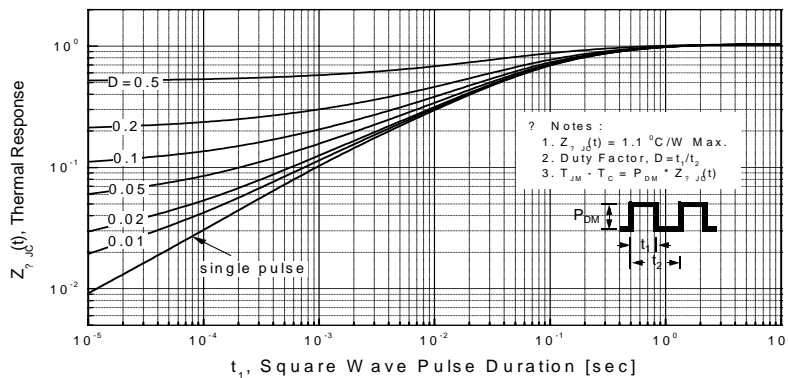
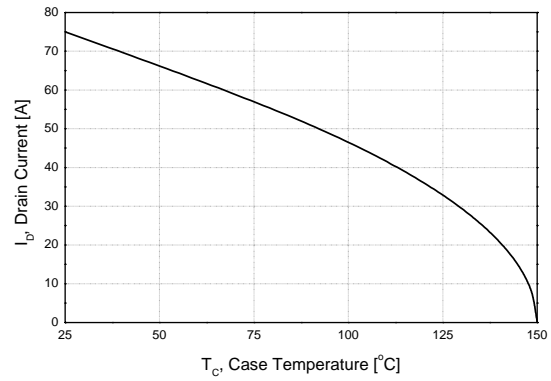
**Figure 8. On-Resistance Variation vs. Temperature**



**Figure 9. Maximum Safe Operating Area**



**Figure 10. Maximum Drain Current vs. Case Temperature**



**Figure 11. Transient Thermal Response Curve**