



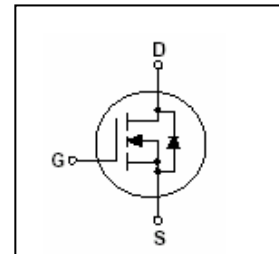
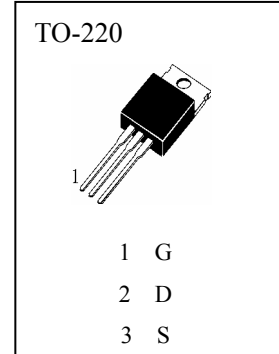
HFP75N08

APPLICATIONS

Low Voltage high-Speed Switching.

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

T_{stg}	Storage Temperature.....	-55~175
T_j	Operating Junction Temperature	150
P_D	Allowable Power Dissipation($T_c=25^\circ\text{C}$).....	173W
V_{DSS}	Drain-Source Voltage	80V
V_{GSS}	Gate-Source Voltage	$\pm 20\text{V}$
I_D	Drain Current($T_c=25^\circ\text{C}$).....	75A



ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	80			V	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$
I_{DSS}	Zero Gate Voltage Drain Current			10	μA	$V_{DS} = 80\text{V}, V_{GS}=0$
I_{GSS}	Gate -Source Leakage Current			± 100	nA	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$
$V_{GS(th)}$	Gate Threshold Voltage	2.0		4.0	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
$R_{DS(on)}$	Static Drain-Source On-Resistance		0.011	0.014	Ω	$V_{GS}=10\text{V}, I_D = 37.5\text{A}$
C_{iss}	Input Capacitance		2600	3380	pF	} $V_{DS} = 25\text{V}, V_{GS}=0, f=1\text{MHz}$
C_{oss}	Output Capacitance		940	1220	pF	
C_{rss}	Reverse Transfer Capacitance		210	275	pF	
$t_{d(on)}$	Turn - On Delay Time		30	70	nS	} $V_{DD} = 40\text{V}, I_D = 75\text{A}$ $R_G = 25^\circ$
t_r	Rise Time		225	460	nS	
$t_{d(off)}$	Turn - Off Delay Time		165	340	nS	
t_f	Fall Time		155	320	nS	} $V_{DS} = 48\text{V}$ $V_{GS}=10\text{V}$ $I_D=50\text{A}^*$
Q_g	Total Gate Charge		80	105	nC	
Q_{gs}	Gate-Source Charge		15		nC	
Q_{gd}	Gate-Drain Charge		32		nC	
I_S	Continuous Source Current			75	A	
V_{SD}	Diode Forward Voltage			1.5	V	$I_S = 75\text{A}, V_{GS}=0$
$R_{th(j-c)}$	Thermal Resistance , Junction-to-Case			0.87	/W	

*Pulse Test : Pulse Width 300 μs , Duty Cycle 2%

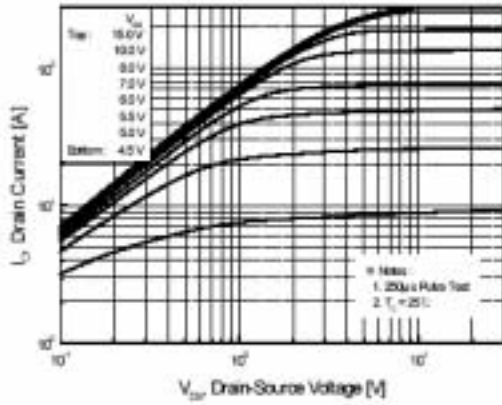


Figure 1. On-Region Characteristics

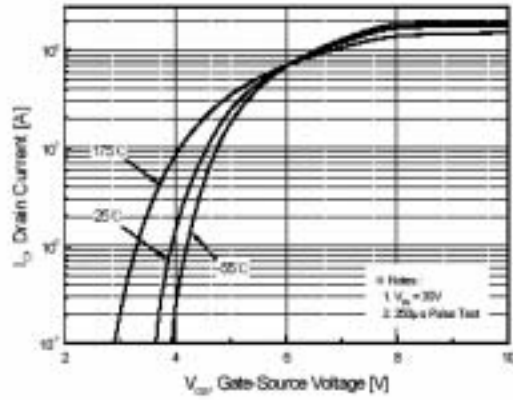


Figure 2. Transfer Characteristics

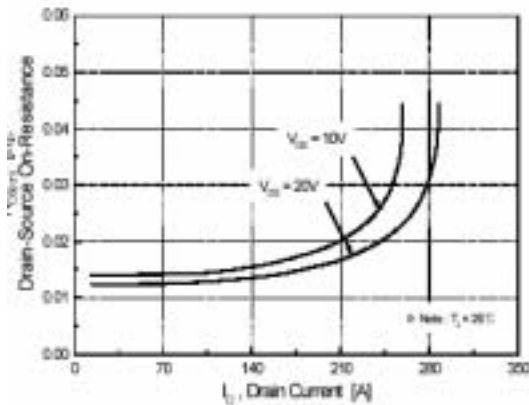


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

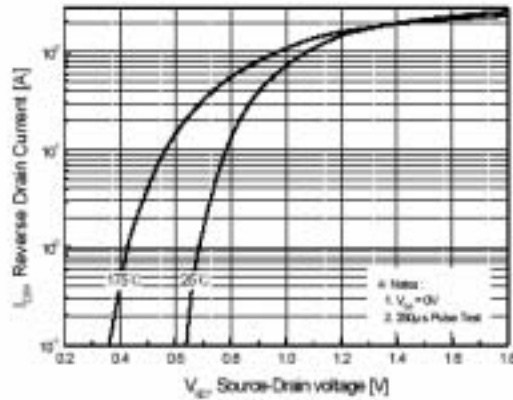


Figure 4. Body Diode Forward Voltage Variation vs. Source Current

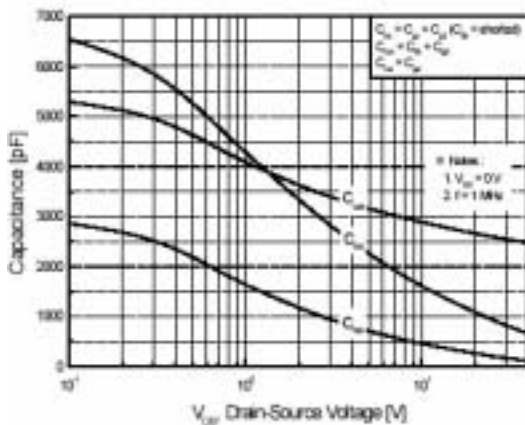


Figure 5. Capacitance Characteristics

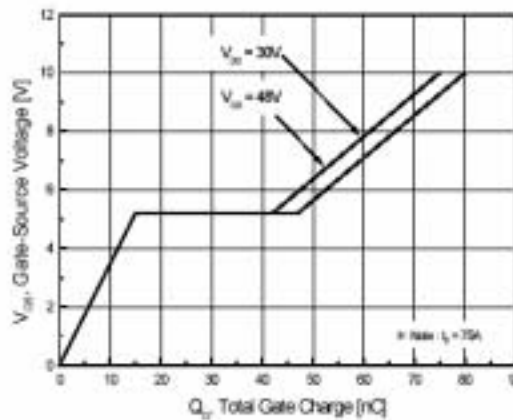


Figure 6. Gate Charge Characteristics

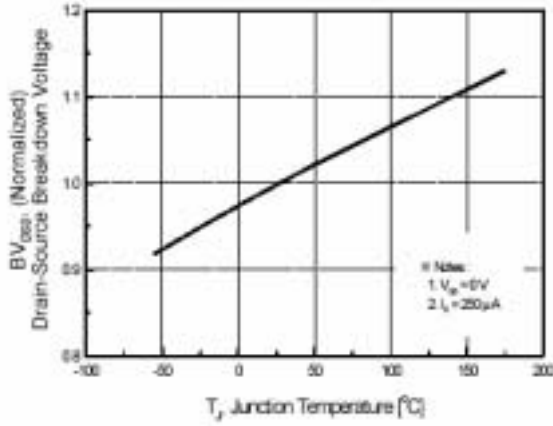


Figure 7. Breakdown Voltage Variation vs. Temperature

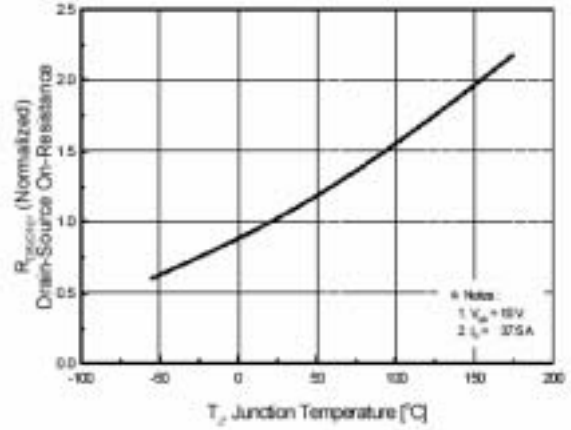


Figure 8. On-Resistance Variation vs. Temperature

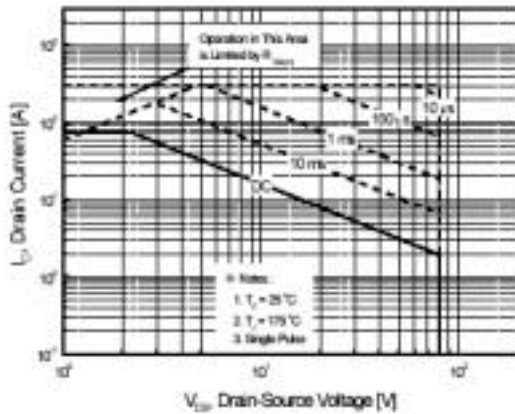


Figure 9. Maximum Safe Operating Area

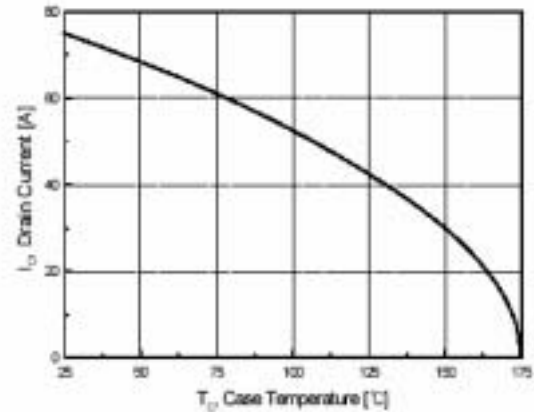


Figure 10. Maximum Drain Current vs. Case Temperature

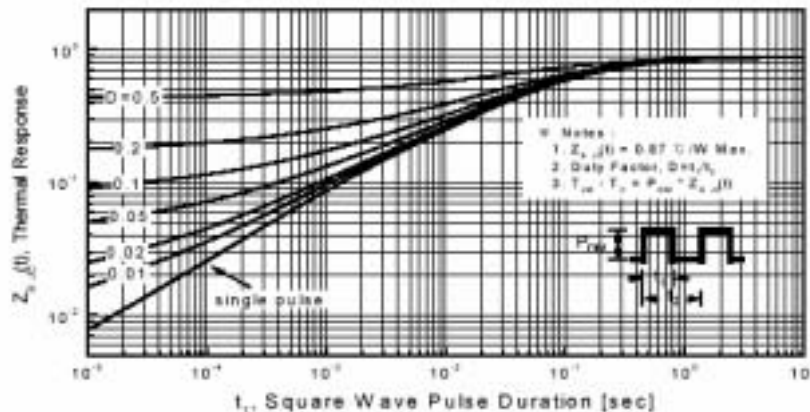
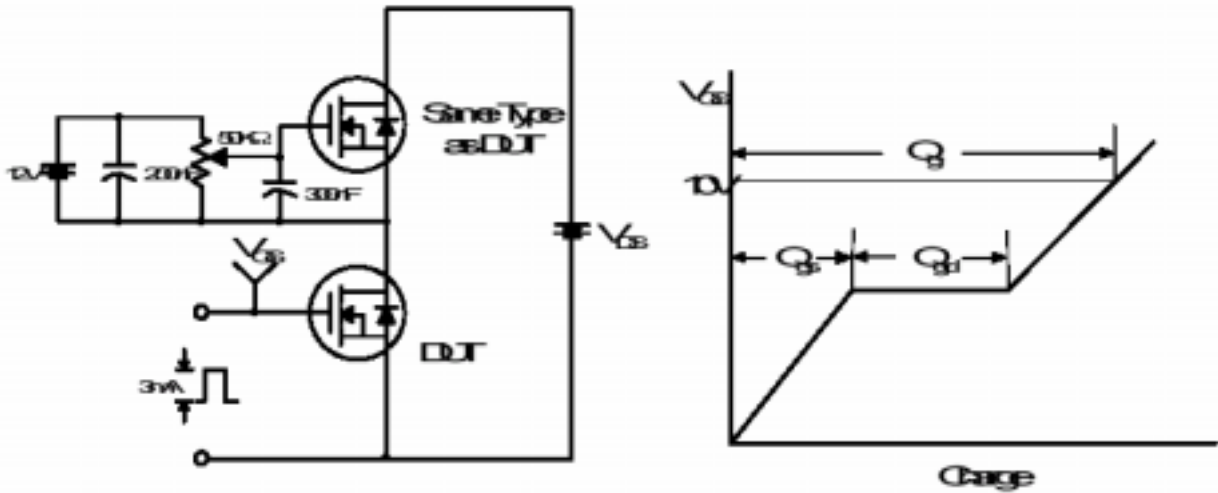


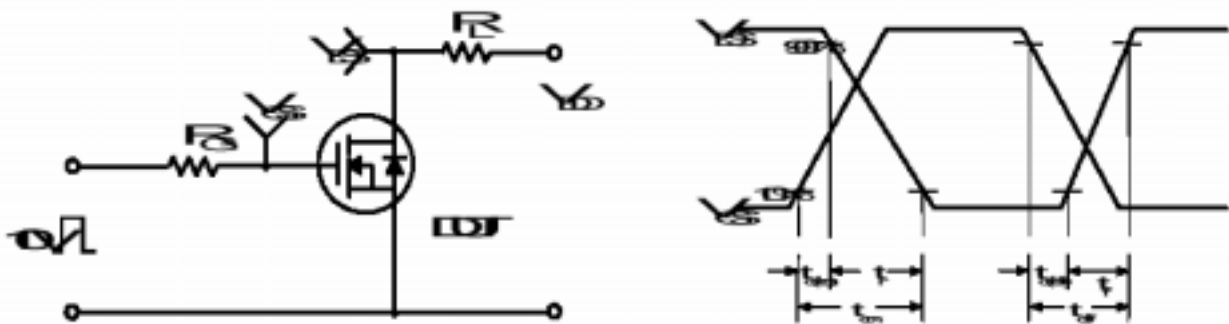
Figure 11. Transient Thermal Response Curve



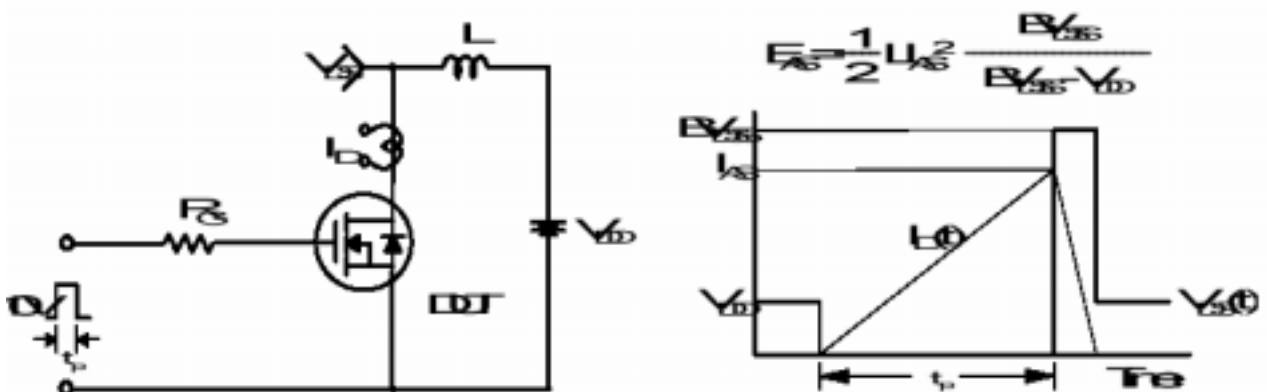
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms





Peak Diode Recovery dv/dt Test Circuit & Waveforms

