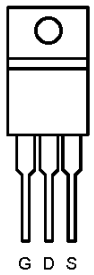
STH75N06-07L
N-Channel 60-V (D-S) 175℃ MOSFET

PRODUCT SUMMARY		
$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D(A)
60	0.0075@ V_{GS}=10V	75[a]
	0.0085@V_{GS}=4.5V	

TO-220AB

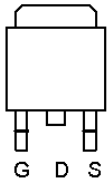


DRAIN connected to TAB

Top View

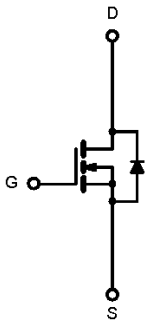
STH75N06-07L

TO-263



Top View

STH75N06-07L



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (Tc=25℃ UNLESS OTHERWISE NOTED)				
Parameter		**Symbol**	**Limit**	**Unit**
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current (TJ=175°C)	Tc=25°C	I_D	75[a]	A
	Tc=125°C		55	
Pulsed Drain Current		I_{DM}	240	
Avalanche Current		I_{AR}	60	
Repetitive Avalanche Energy [b]	L=0.1mH	E_{AR}	280	mJ
Power Dissipation	Tc=25°C (TO-220AB and TO-263)	P_D	250[c]	W
	T_A=25°C (TO-263)[d]		3.7	
Operating Junction and Storage Temperature Range		T_J,Tstg	-55 to 175	°C

THERMAL RESISTANCE RATINGS				
Parameter		**Symbol**	**Limit**	**Unit**
Junction-to-Ambient	PCB Mount (TO-263)[d]	R_{thJA}	40	°C/W
	Free Air (TO-220AB)		62.5	
Junction-to-Case		R_{thJC}	0.6	

Notes

a. Package limited.
b. Duty cycle ≤1%.
c. See SOA curve for voltage derating.
d. When mounted on 1” square PCB (FR-4 material).

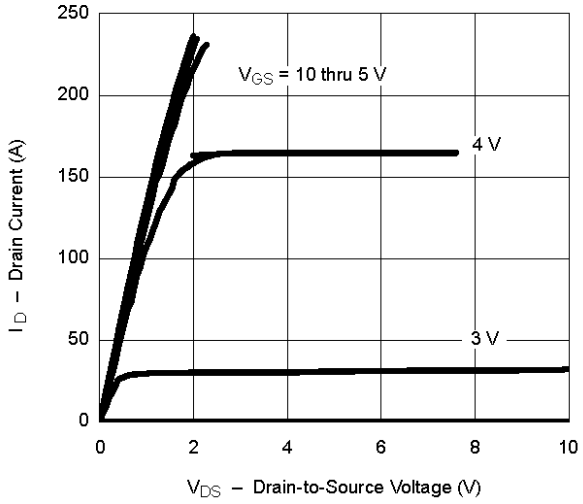
SPECIFICATIONS (TJ=25℃ UNLESS OTHERWISE NOTED)						
Parameter	**Symbol**	**Test Condition**	**Min**	**Typ**	**Max**	**Unit**
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0		3.0	
Gate-Body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
		V_{DS}=60V. V_{GS}=0V, T_J=125°C			50	
		V_{DS}=60V, V_{GS}=0V, T_J=175°C			250	
On-State Drain Current [a]	$I_{D(on)}$	V_{DS}=5V, V_{GS}=10V	120			A
Drain-Source On-State Resistance[a]	$r_{DS(on)}$	V_{GS}=10V, I_D=30A		0.0061	0.0075	Ω
		V_{GS}=4.5V, I_D=20A		0.0071	0.0085	
		V_{GS}=10V, I_D=30A, T_J=125°C			0.012	
		V_{GS}=10V, I_D=30A, T_J=175°C			0.015	
Forward Transconductance a	g_{fs}	V_{DS}=15V, I_D=30A	30			S
Dynamic [b]						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25, f=1MHz		6300		pF
Output Capacitance	C_{oss}			920		
Reverse Transfer Capacitance	C_{rss}			350		
Total Gate Charge[C]	Q_g	V_{DS}=30V, V_{GS}=10V, I_D=75A		75	120	nC
Gate-Source Charge[C]	Q_{gs}			18		
Gate-Drain Charge [C]	Q_{gd}			27		
Turn-On Delay Time [C]	$t_{d(on)}$	V_{DD}=30V, R_L=0.47 Ω		14	40	ns
Rise Time [C]	tr	I_D ≈ 75A, V_{GEN}=10V, R_G=2.5 Ω		15	40	
Turn-Off Delay Time [C]	$t_{d(off)}$			150	300	
Fall Time [C]	tf			50	100	
Source-Drain Diode Ratings and Characteristics (T_C=25℃)[b]						
Continuous Current	I_S				75	A
Pulsed Current	I_{SM}				240	
Forward Voltage	V_{SD}	I_F=75A, V_{GS}=0V		1.0	1.3	V
Reverse Recovery Time	trr	I_F=75A, di/dt = 100A/μs		67	120	ns
Peak Reverse Recovery Current	$I_{RM(REC)}$			6	8	A
Reverse Recovery Charge	Qrr			0.2	0.48	μC

Notes

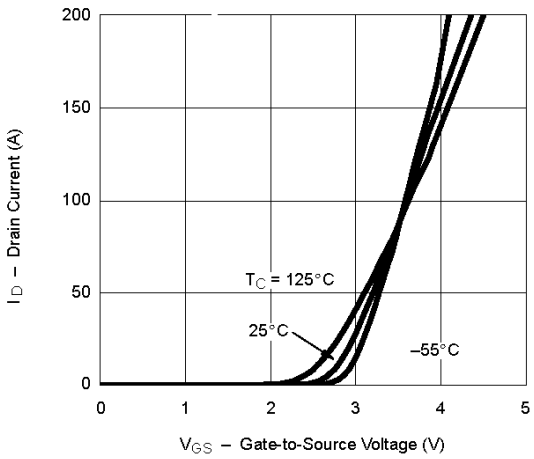
a. Pulse test: pulse width ≤ 300 μsec, duty cycle ≤2%.
b. Guaranteed by design, not subject to production testing.
c. Independent of operating temperature.

TYPICAL CHARACTERISTICS (25℃ UNLESS NOTED)

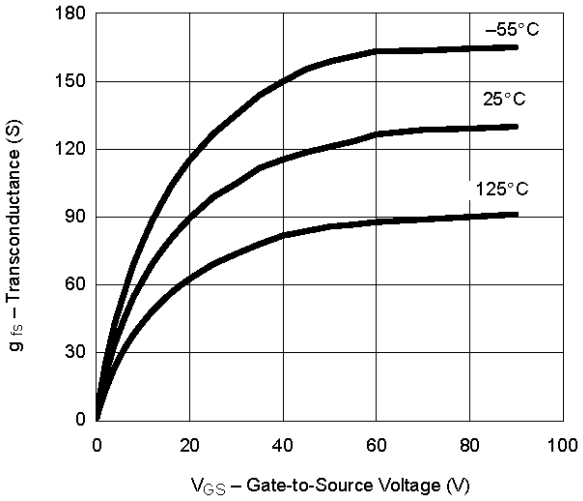
Output Characteristics



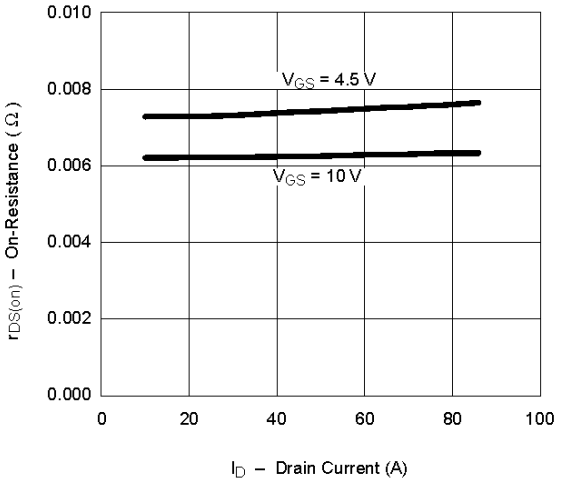
Transfer Characteristics



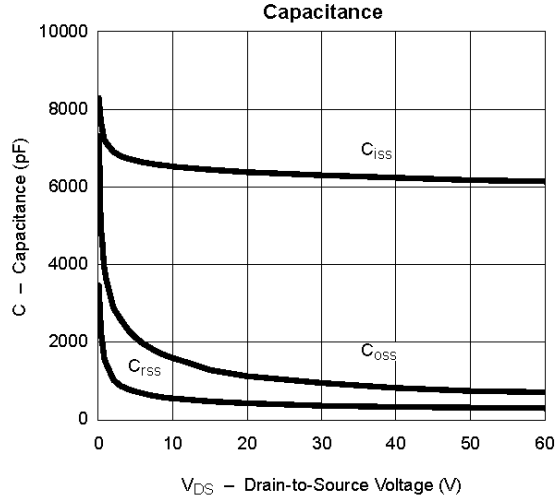
Transconductance



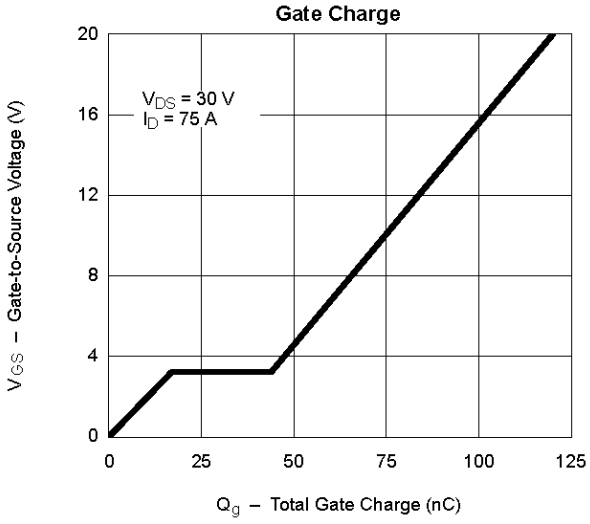
On-Resistance vs. Drain Current



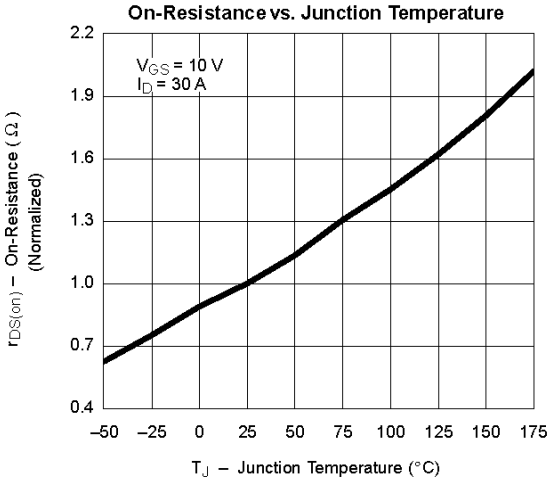
Capacitance

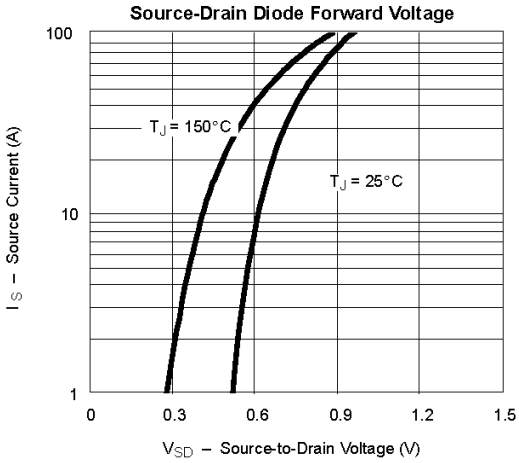


Gate Charge



TYPICAL CHARACTERISTICS (25℃ UNLESS NOTED)





THERMAL RATINGS

