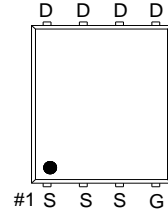
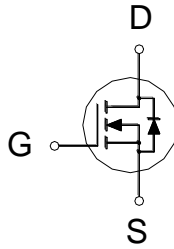




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	9.1mΩ	60A



G. GATE
D. DRAIN
S. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	60	A
	$T_C = 100\text{ °C}$		42	
Pulsed Drain Current ¹		I_{DM}	80	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	11.8	
	$T_A = 70\text{ °C}$		9.8	
Avalanche Current		I_{AS}	27	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	36	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	71	W
	$T_C = 100\text{ °C}$		35	
Power Dissipation ³	$T_A = 25\text{ °C}$	P_D	2.7	W
	$T_A = 70\text{ °C}$		1.9	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$		55	°C / W
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		75	
Junction-to-Case	Steady-State	$R_{\theta JC}$		2.1	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ °C}$.

³The Power dissipation is based on $R_{\theta JA} t \leq 10\text{s}$ value.

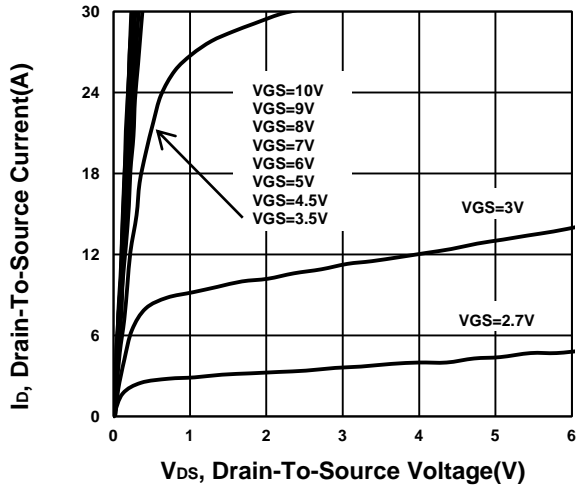
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
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	1.8	3		
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 = 55 °C			10		
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 20A		7	9.1	mΩ	
		V _{GS} = 4.5V, I _D = 20A		11.5	14.5		
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 20A		41		S	
DYNAMIC							
Input Capacitance	C _{ISS}	V _{GS} = 0V, V _{DS} = 30V, f = 1MHz		1095		pF	
Output Capacitance	C _{OSS}			553			
Reverse Transfer Capacitance	C _{RSS}			25			
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		0.9		Ω	
Total Gate Charge ²	Q _g	V _{GS} = 10V	V _{DS} = 30V, V _{GS} = 10V, I _D = 20A	18		nC	
		V _{GS} = 4.5V		9.5			
Gate-Source Charge ²	Q _{gs}	3					
Gate-Drain Charge ²	Q _{gd}	4.5					
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 30V, I _D ≅ 20A, V _{GS} = 10V, R _{GEN} = 6Ω		9.5			nS
Rise Time ²	t _r			5.3			
Turn-Off Delay Time ²	t _{d(off)}		24				
Fall Time ²	t _f		28				
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)							
Continuous Current	I _S				59	A	
Forward Voltage ¹	V _{SD}	I _F = 20A, V _{GS} = 0V			1.2	V	
Reverse Recovery Time	t _{rr}	I _F = 20A, di _F /dt = 100A / μS		31		nS	
Reverse Recovery Charge	Q _{rr}			20		nC	

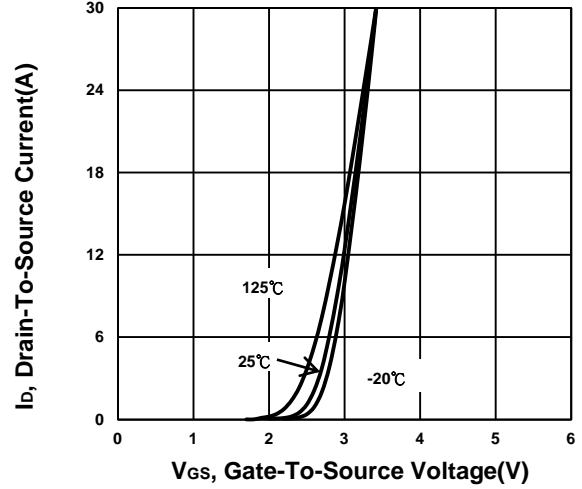
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

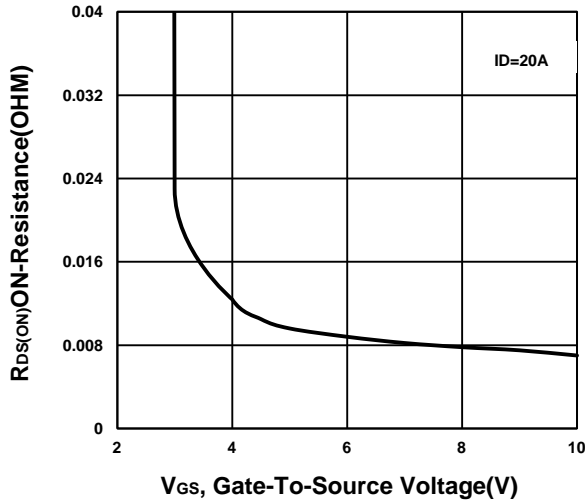
Output Characteristics



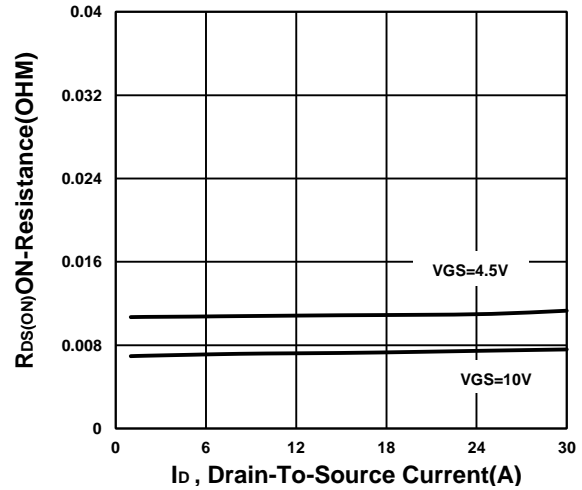
Transfer Characteristics



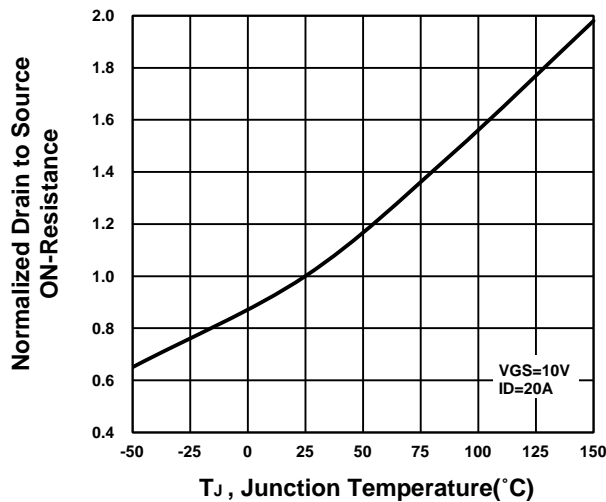
On-Resistance VS Gate-To-Source Voltage



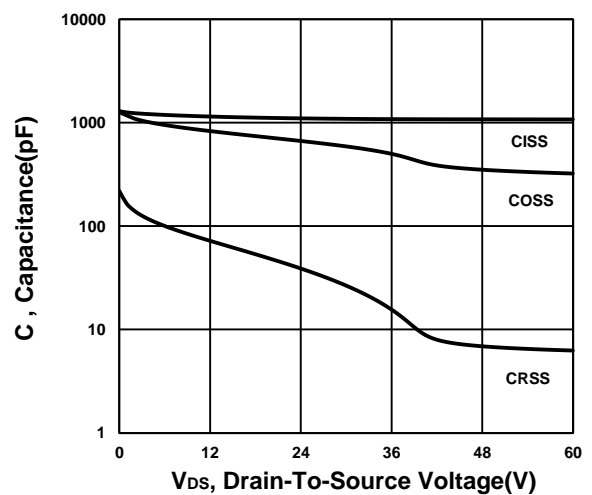
On-Resistance VS Drain Current



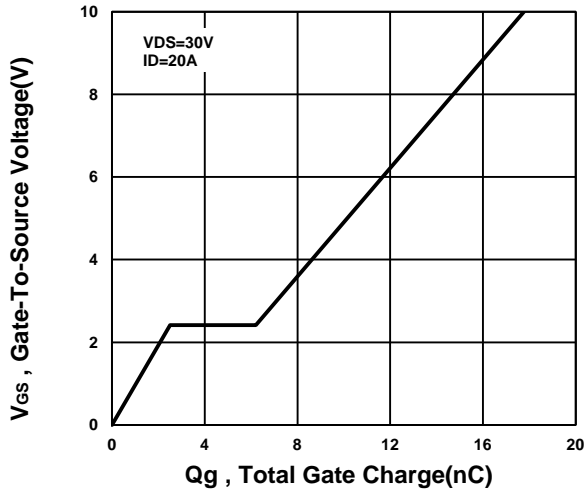
On-Resistance VS Temperature



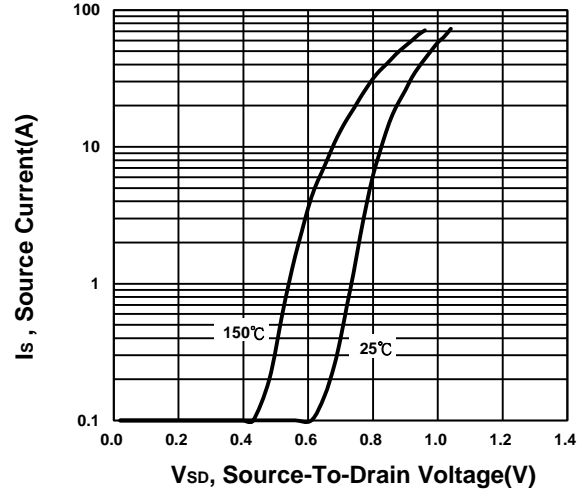
Capacitance Characteristic



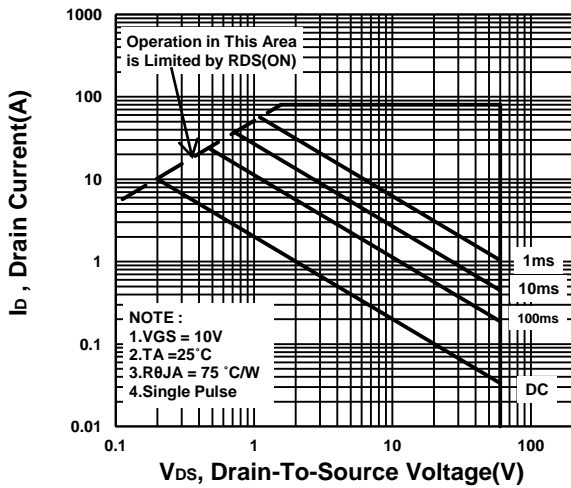
Gate charge Characteristics



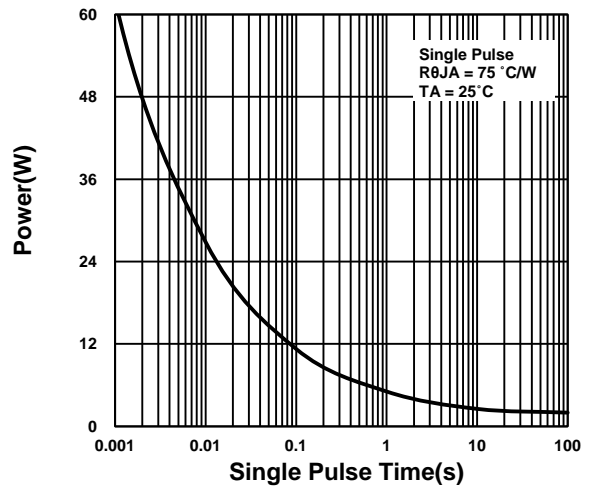
Source-Drain Diode Forward Voltage



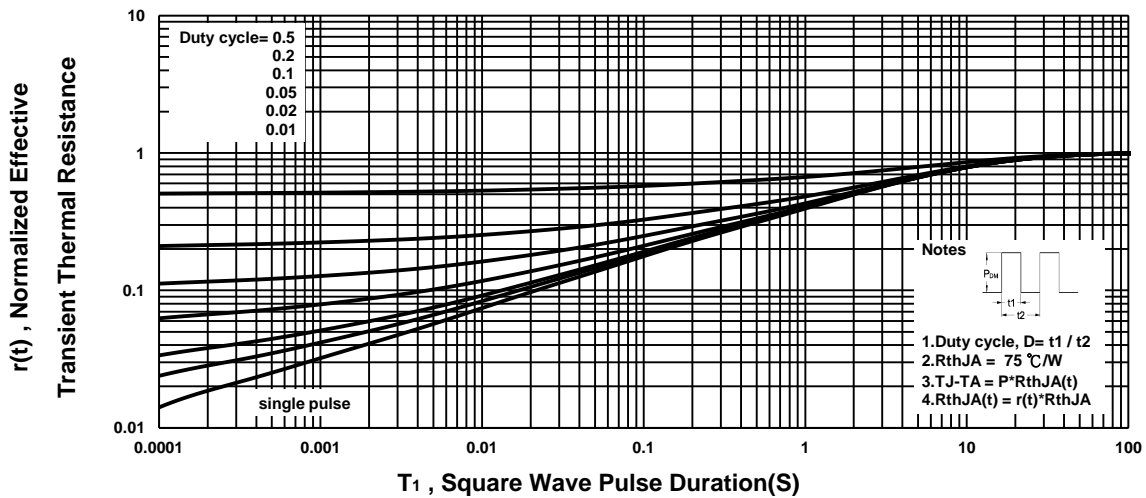
Safe Operating Area



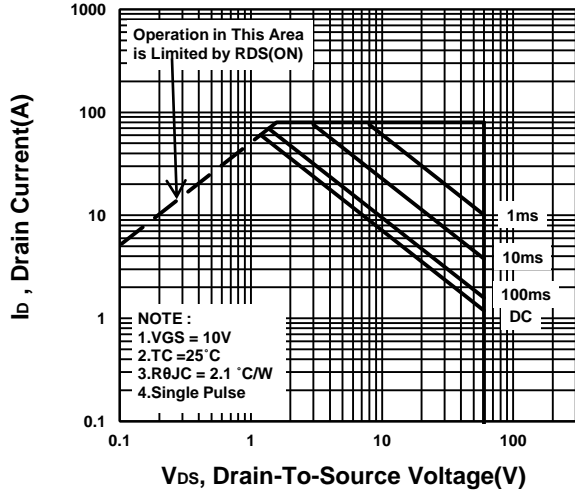
Single Pulse Maximum Power Dissipation



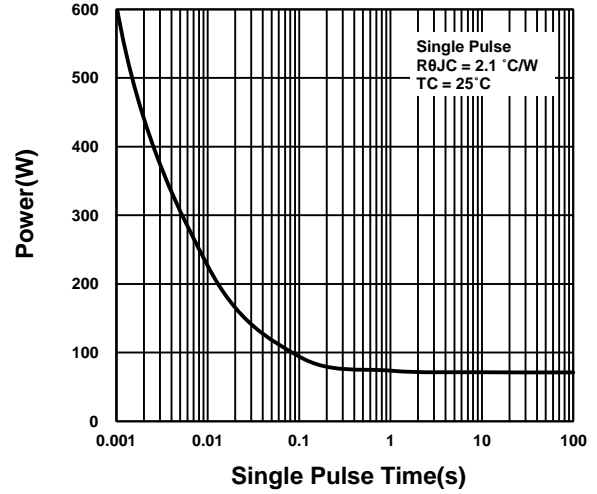
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

