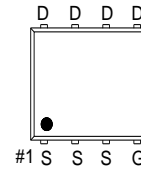
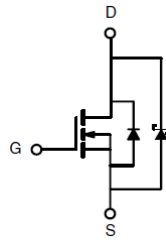


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	12mΩ	30A



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}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current ³	$T_C = 25\text{ °C}$	I_D	30	A
	$T_C = 100\text{ °C}$		19	
	$T_A = 25\text{ °C}$		11	
	$T_A = 70\text{ °C}$		9.3	
Pulsed Drain Current ¹		I_{DM}	80	
Avalanche Current		I_{AS}	21	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	22	mJ
Power Dissipation ⁴	$T_C = 25\text{ °C}$	P_D	20	W
	$T_C = 100\text{ °C}$		8.3	
	$T_A = 25\text{ °C}$		3.1	
	$T_A = 70\text{ °C}$		2	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$		40	°C / W
	Steady-State	$R_{\theta JA}$		69	
Junction-to-Case	Steady-State	$R_{\theta JC}$		6	

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 $T_A = 25\text{ °C}$.

³Package limitation current is 16A

⁴The Power dissipation is based on $R_{\theta JA} t \leq 10\text{s}$ value.

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

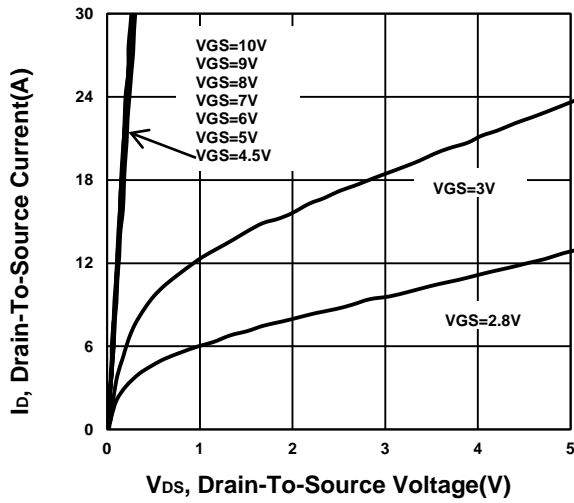
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 1mA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.3	1.75	2.3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			0.1	mA
		V _{DS} = 20V, V _{GS} = 0V, T _J = 55 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 7.6A		9.9	15	mΩ
		V _{GS} = 10V, I _D = 7.6A		7.8	12	
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 7.6A		52		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		1030		pF
Output Capacitance	C _{oss}			177		
Reverse Transfer Capacitance	C _{rss}			123		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1.9		Ω
Total Gate Charge ²	Q _{g(VGS=10V)}	V _{DS} = 15V, I _D = 7.6A		23		nC
	Q _{g(VGS=4.5V)}			12		
Gate-Source Charge ²	Q _{gs}			3		
Gate-Drain Charge ²	Q _{gd}			5.7		
Turn-On Delay Time ²	t _{d(on)}		V _{DD} = 15V I _D ≅ 7.6A, V _{GEN} = 10V, R _G = 6Ω		18	
Rise Time ²	t _r			12		
Turn-Off Delay Time ²	t _{d(off)}			36		
Fall Time ²	t _f			15		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I _S				16	A
Forward Voltage ¹	V _{SD}	I _F = 1A, V _{GS} = 0V			0.6	V
Reverse Recovery Time	t _{rr}	I _F = 7.6A, di _F /dt = 100A / μS		14		nS
Reverse Recovery Charge	Q _{rr}			3.8		nC

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

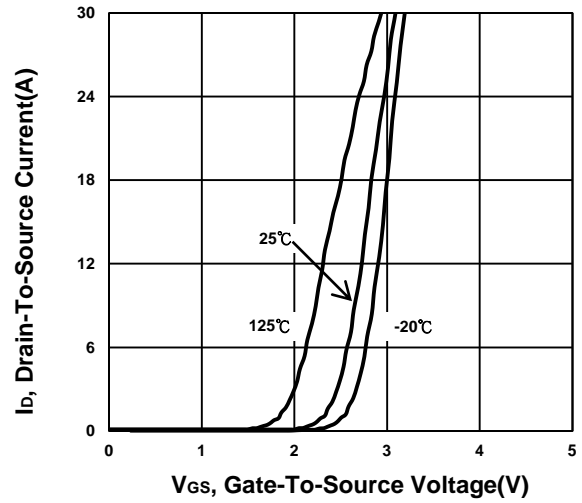
²Independent of operating temperature.

³Package limitation current is 16A

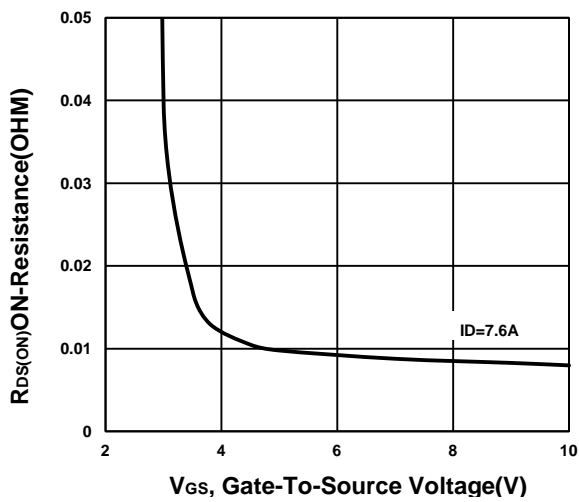
Output Characteristics



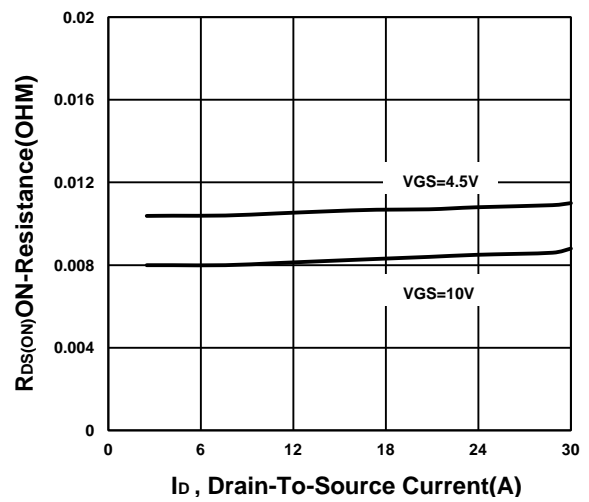
Transfer Characteristics



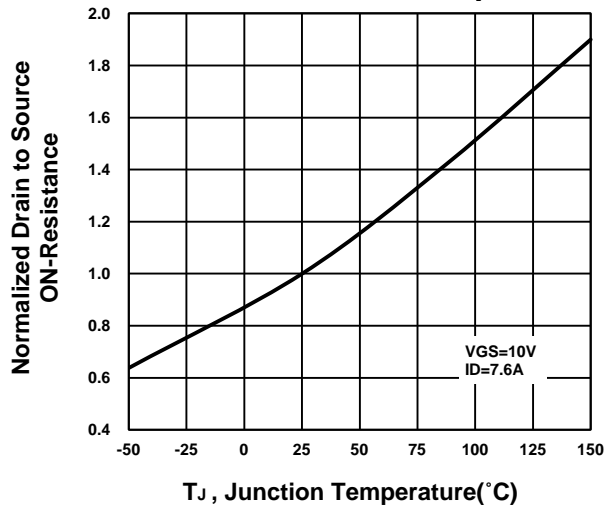
On-Resistance VS Gate-To-Source



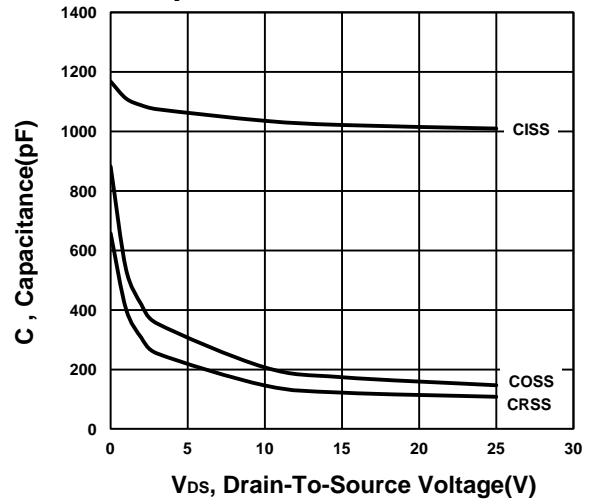
On-Resistance VS Drain Current



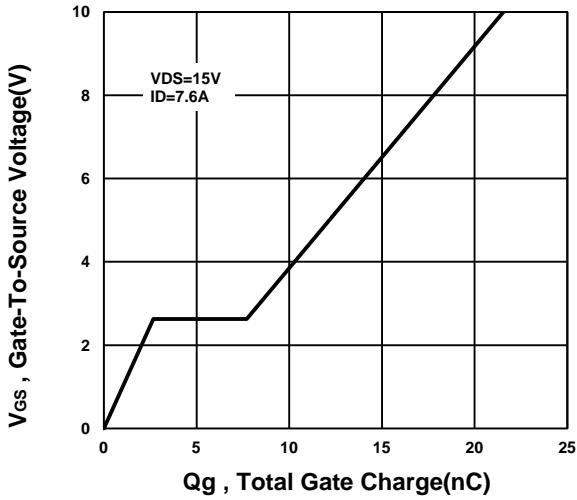
On-Resistance VS Temperature



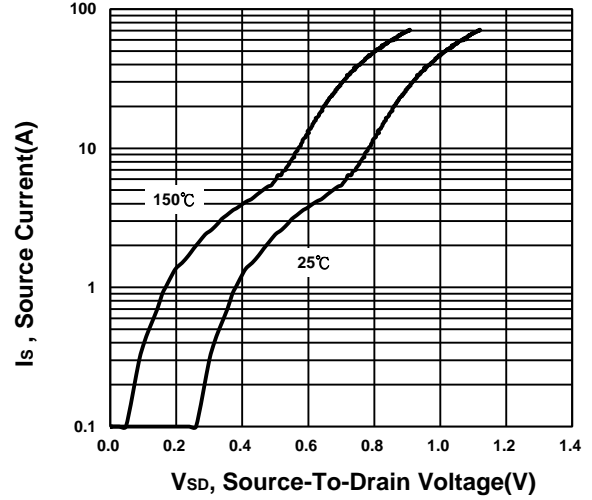
Capacitance Characteristic



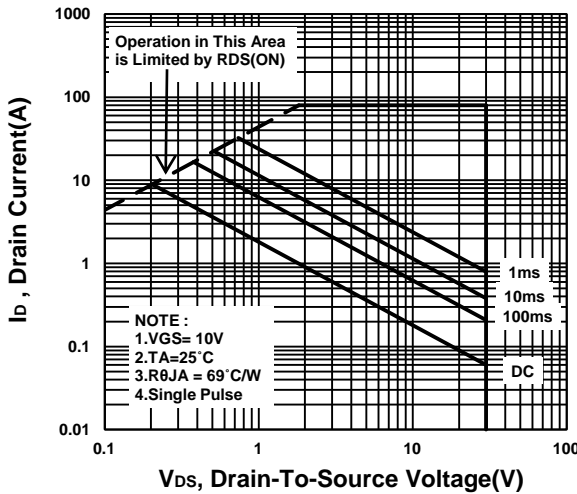
Gate charge Characteristics



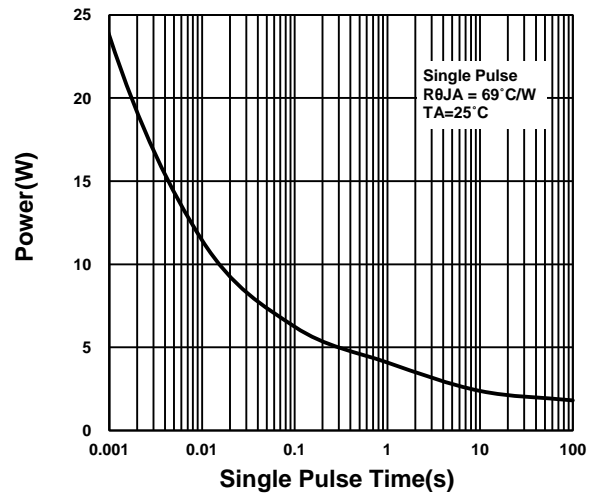
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

