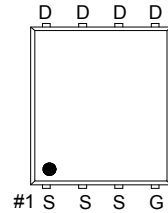
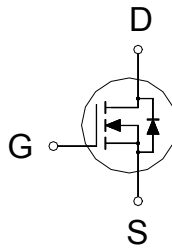




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	9.8mΩ	44A



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 ²	$T_C = 25\text{ °C}$	I_D	44	A
	$T_C = 100\text{ °C}$		28	
Pulsed Drain Current ¹		I_{DM}	110	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	12	
	$T_A = 70\text{ °C}$		10	
Power Dissipation	$T_C = 25\text{ °C}$	P_D	31	W
	$T_C = 100\text{ °C}$		12	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2.5	W
	$T_A = 70\text{ °C}$		1.6	
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	Steady-State	$R_{\theta JA}$		50	°C / W
Junction-to-Case	Steady-State	$R_{\theta JC}$		4	

¹Pulse width limited by maximum junction temperature.

²Package limitation current is 30A

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ °C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ °C}$			10	

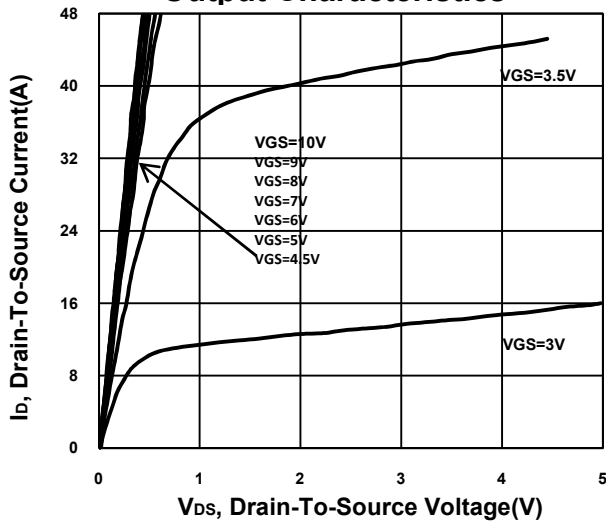
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$		11	14.5	m Ω
		$V_{GS} = 10V, I_D = 20A$		8.2	9.8	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$		50		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		1130		pF
Output Capacitance	C_{oss}			157		
Reverse Transfer Capacitance	C_{rss}			116		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		2.3		Ω
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V, I_D = 20A$	$V_{GS} = 10V$	22		nC
			$V_{GS} = 4.5V$	11		
Gate-Source Charge ²	Q_{gs}		3.6			
Gate-Drain Charge ²	Q_{gd}		5			
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V, I_D \cong 20A, V_{GS} = 20V, R_{GEN} = 6\Omega$		17		nS
Rise Time ²	t_r			10		
Turn-Off Delay Time ²	$t_{d(off)}$			33		
Fall Time ²	t_f			10		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I_S				44	A
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 20A, di_F/dt = 100A / \mu S$		15		nS
Reverse Recovery Charge	Q_{rr}			5		nC

¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

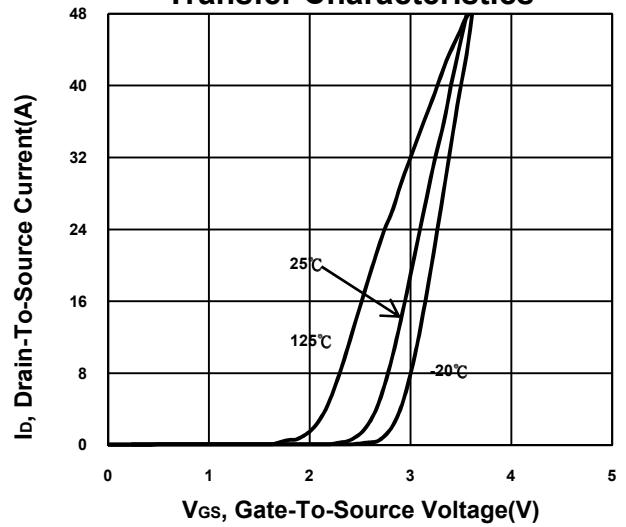
²Independent of operating temperature.

³Package limitation current is 30A

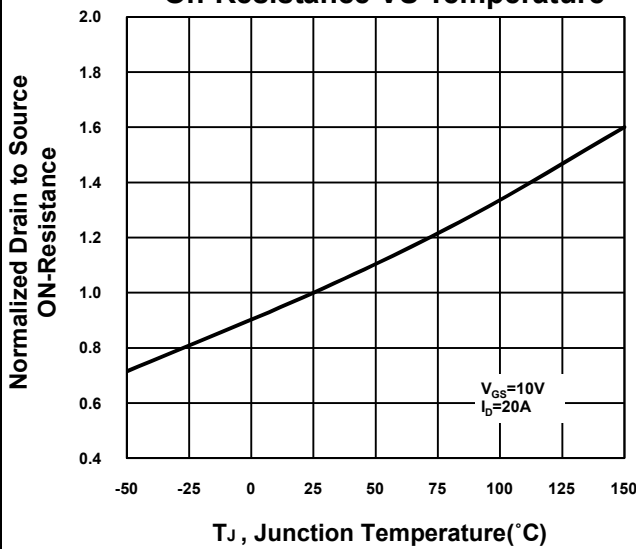
Output Characteristics



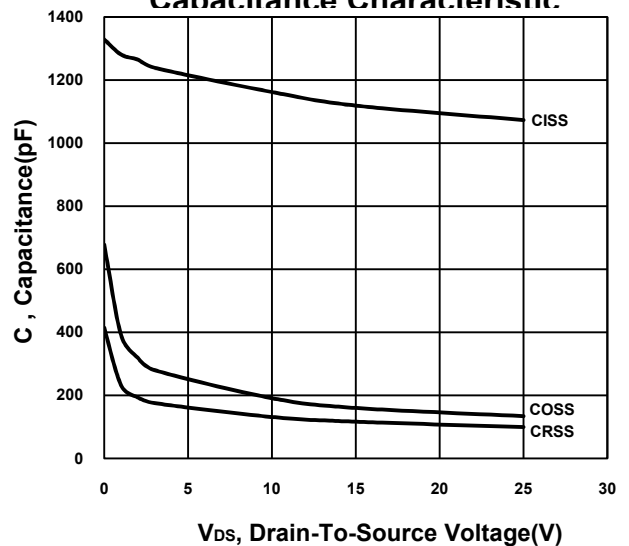
Transfer Characteristics



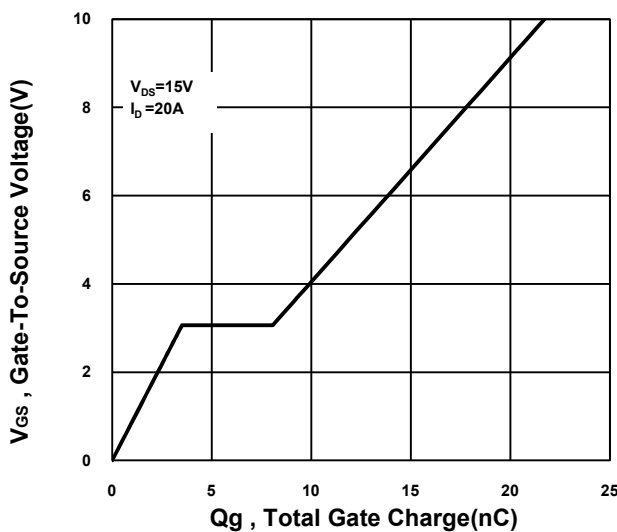
On-Resistance VS Temperature



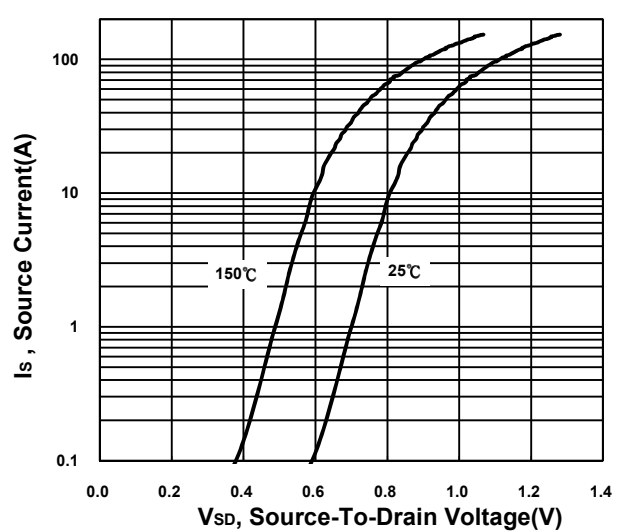
Capacitance Characteristic



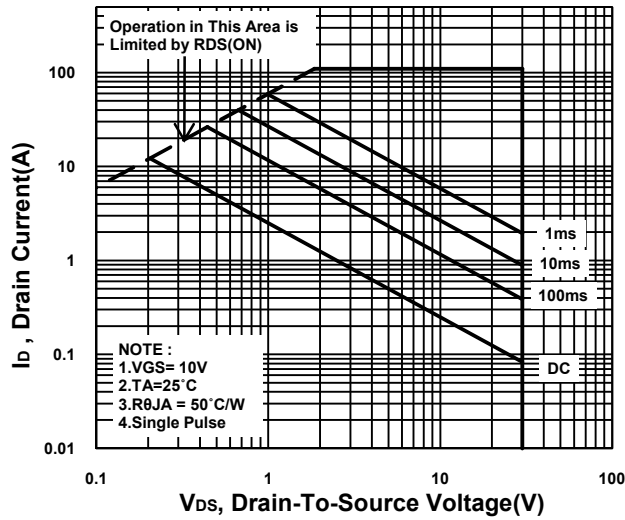
Gate charge Characteristics



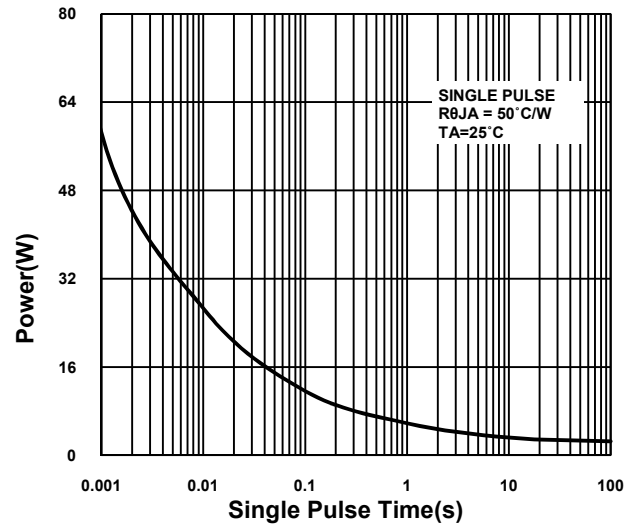
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

