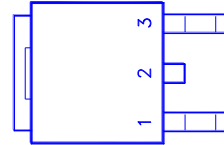
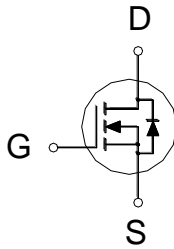




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	9mΩ	48A



- 1. GATE
- 2. DRAIN
- 3. SOURCE

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

100% RG Test , 100% UIL Test

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	48	A
	$T_C = 100\text{ °C}$		30.5	
Pulsed Drain Current ¹		I_{DM}	120	
Avalanche Current		I_{AS}	20	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	20.8	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	37.9	W
	$T_C = 100\text{ °C}$		15	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3.3	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Package limitation current is 20A

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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.8	2.3	V
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
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125\text{ °C}$			10	
Drain-Source On-State Resistance ₁	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$		10	12	mΩ
		$V_{GS} = 10V, I_D = 20A$		7	9	

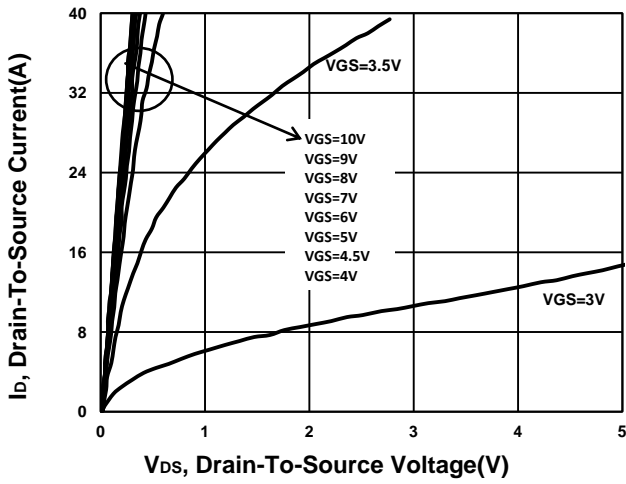
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$		45		S		
DYNAMIC								
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		765		pF		
Output Capacitance	C_{oss}			143				
Reverse Transfer Capacitance	C_{rss}			91				
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		3		Ω		
Total Gate Charge ²	Q_g	$V_{GS}=10V$	$V_{DS} = 15V, I_D = 20A$		16.5	nC		
		$V_{GS}=4.5V$			8.9			
Gate-Source Charge ²	Q_{gs}				2.2			
Gate-Drain Charge ²	Q_{gd}				5			
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V$ $I_D \cong 20A, V_{GS} = 10V, R_{GEN} = 6\Omega$			26			nS
Rise Time ²	t_r				22			
Turn-Off Delay Time ²	$t_{d(off)}$			42				
Fall Time ²	t_f			25				
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)								
Continuous Current ³	I_S				48	A		
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$			1.2	V		
Reverse Recovery Time	t_{rr}	$I_F = 20A, di_F/dt = 100A / \mu S$			21	nS		
Reverse Recovery Charge	Q_{rr}				9	nC		

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

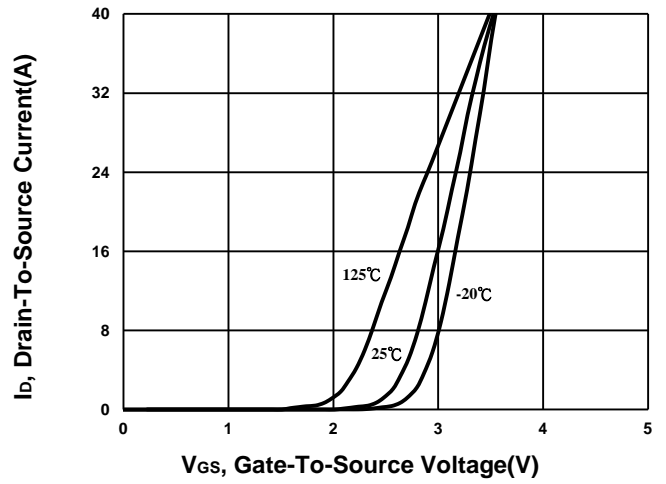
²Independent of operating temperature.

³Package limitation current is 20A

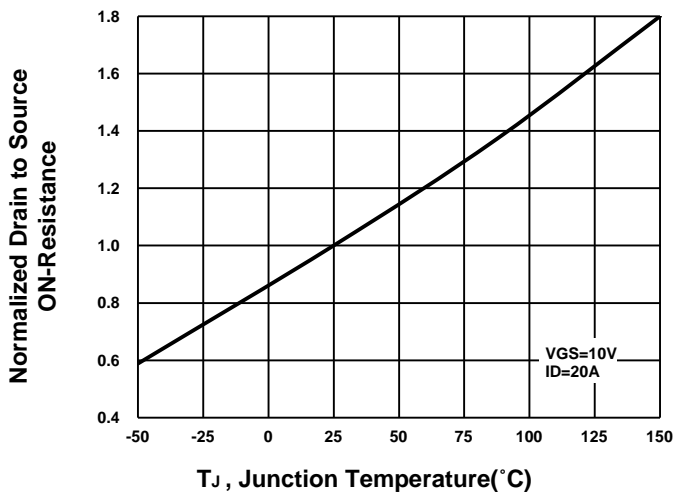
Output Characteristics



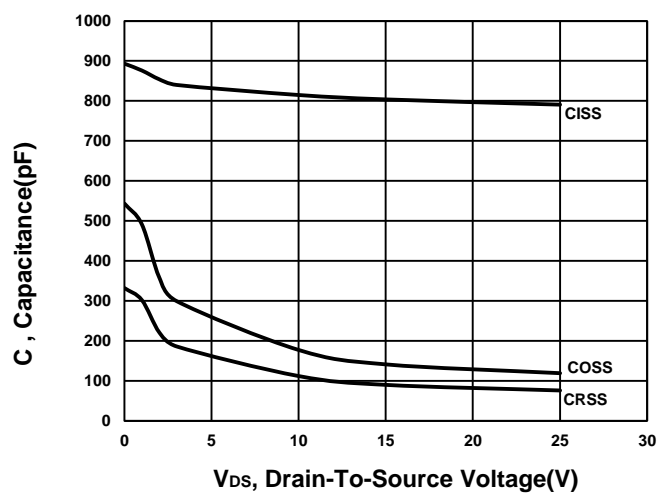
Transfer Characteristics



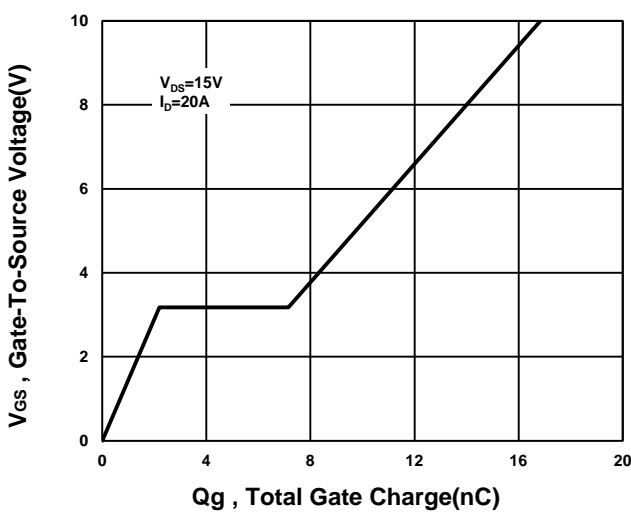
On-Resistance VS Temperature



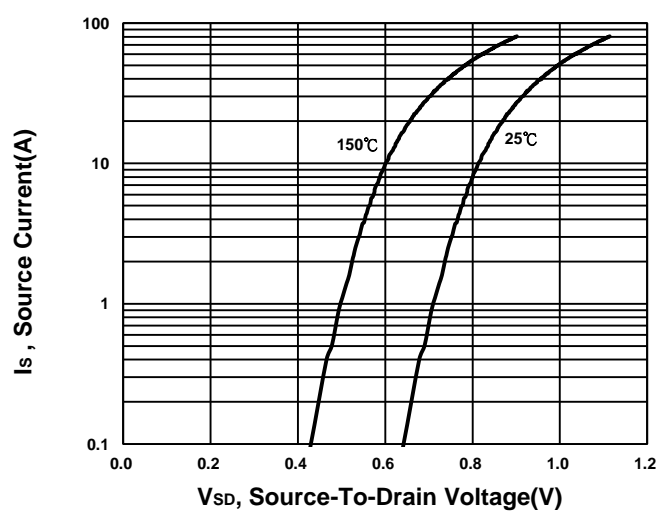
Capacitance Characteristic



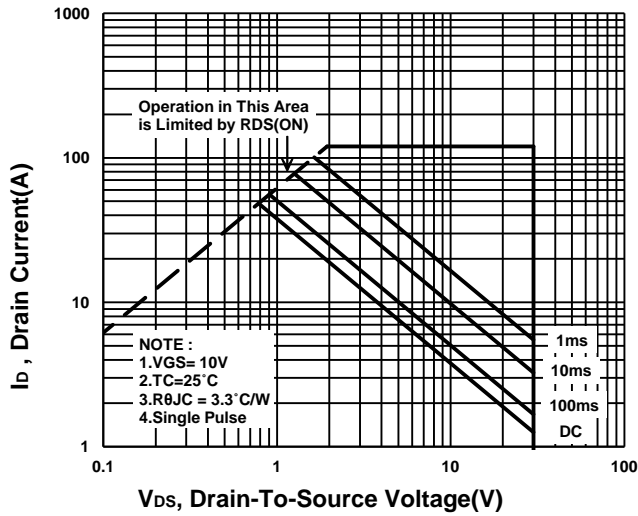
Gate charge Characteristics



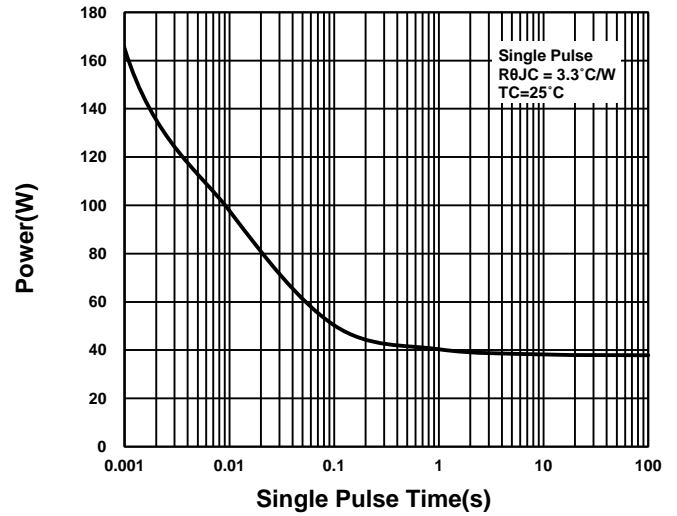
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

