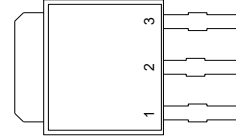
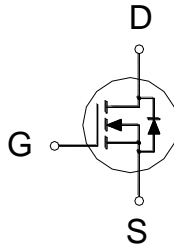




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
40V	5.5mΩ	82A



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

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current ²	$T_C = 25\text{ °C}$	I_D	82	A
	$T_C = 100\text{ °C}$		52	
Pulsed Drain Current ¹		I_{DM}	200	
Avalanche Current		I_{AS}	49	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	120	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	83	W
	$T_C = 100\text{ °C}$		33	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1.5	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Package limitation current is 55A.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.75	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 32V, V_{GS} = 0V$			1	μA
		$V_{DS} = 30V, V_{GS} = 0V, T_J = 125\text{ °C}$			10	

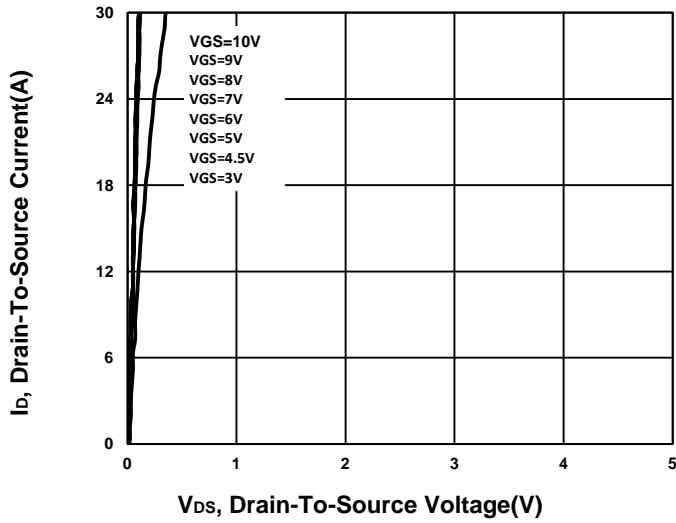
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$	4.4	6	mΩ	
		$V_{GS} = 10V, I_D = 20A$	4.1	5.5		
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$	80		S	
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 20V, f = 1MHz$	3800		pF	
Output Capacitance	C_{oss}		406			
Reverse Transfer Capacitance	C_{rss}		313			
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	1		Ω	
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 20V, I_D = 20A$	77		nC	
	$Q_{g(VGS=4.5V)}$		40			
Gate-Source Charge ²	Q_{gs}		11			
Gate-Drain Charge ²	Q_{gd}		18			
Turn-On Delay Time ²	$t_{d(on)}$		25			nS
Rise Time ²	t_r		18			
Turn-Off Delay Time ²	$t_{d(off)}$	66				
Fall Time ²	t_f	18				
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I_S			63	A	
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$		1.3	V	
Reverse Recovery Time	t_{rr}	$I_F = 20A, dI_F/dt = 100A / \mu S$	19.3		nS	
Reverse Recovery Charge	Q_{rr}		7.8		nC	

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

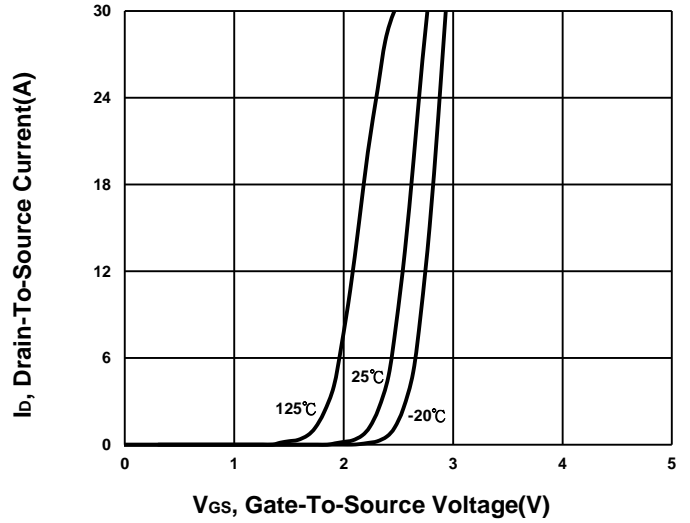
²Independent of operating temperature.

³Package limitation current is 55A.

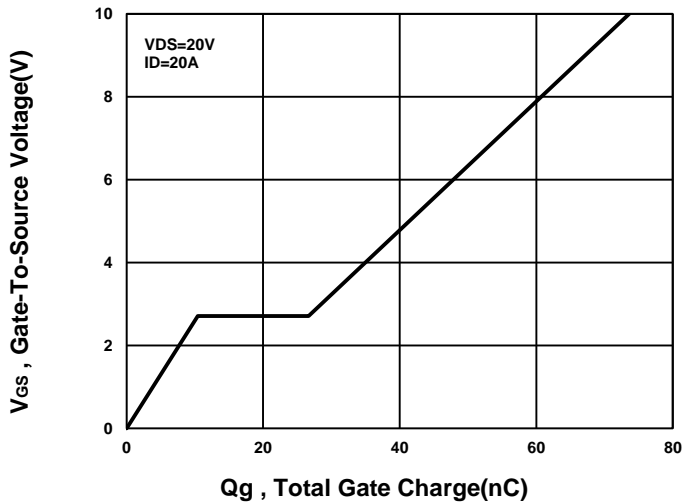
Output Characteristics



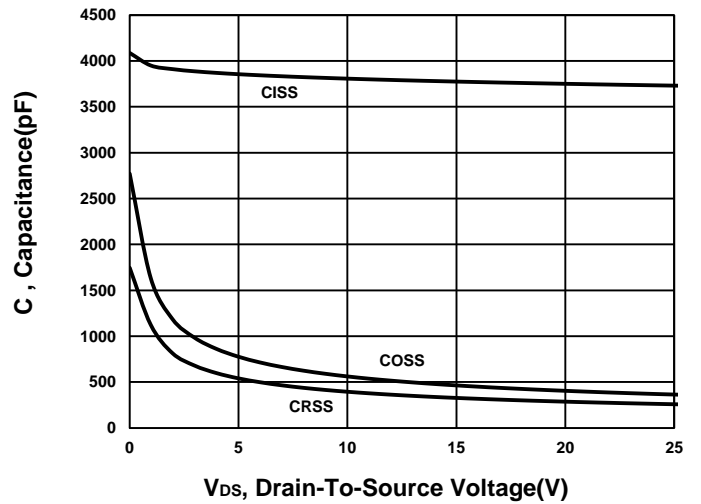
Transfer Characteristics



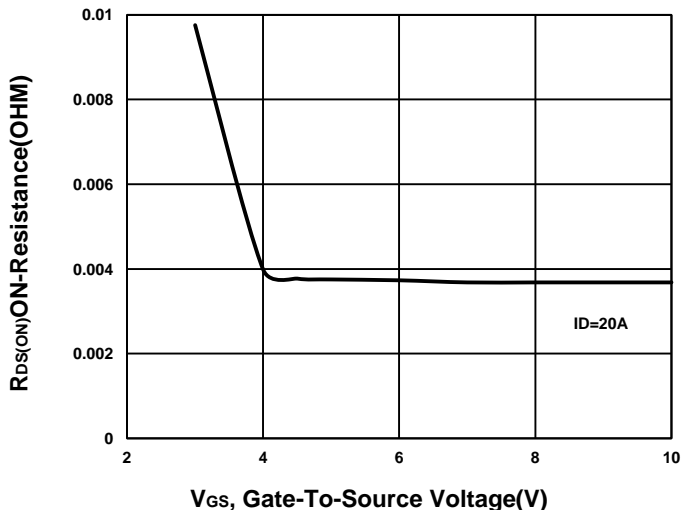
Gate charge Characteristics



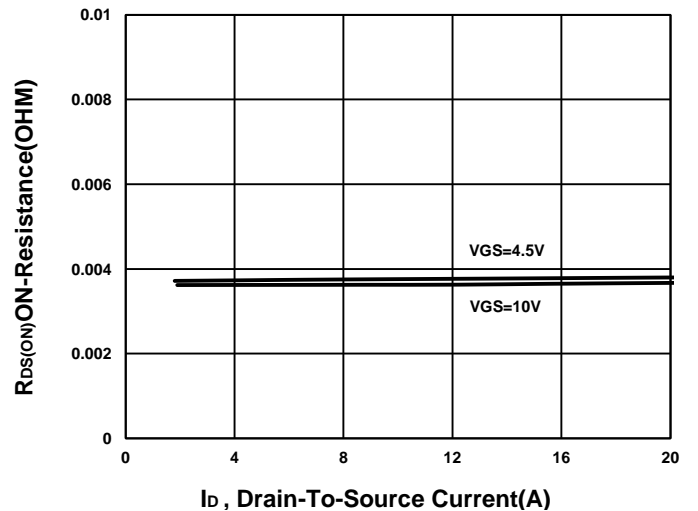
Capacitance Characteristic



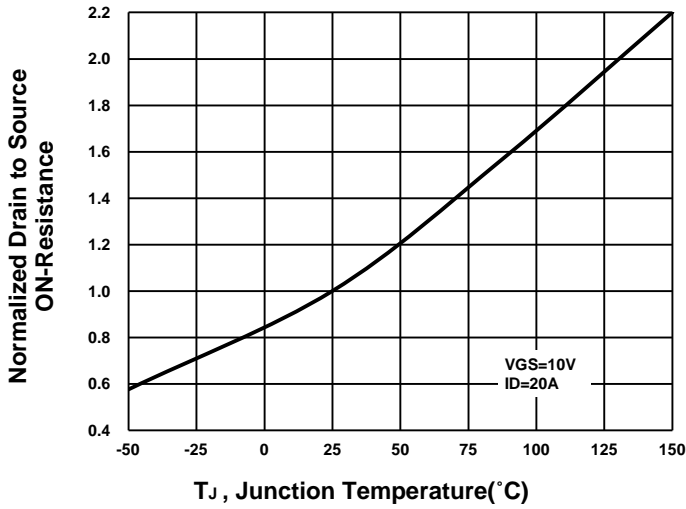
On-Resistance VS Gate-To-Source



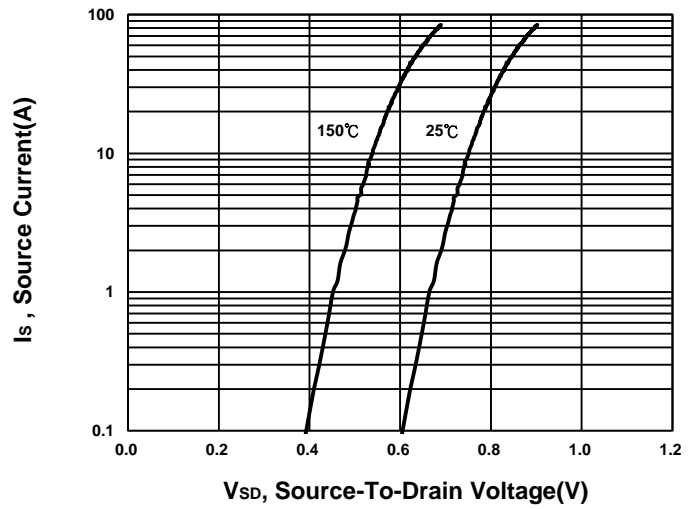
On-Resistance VS Drain Current



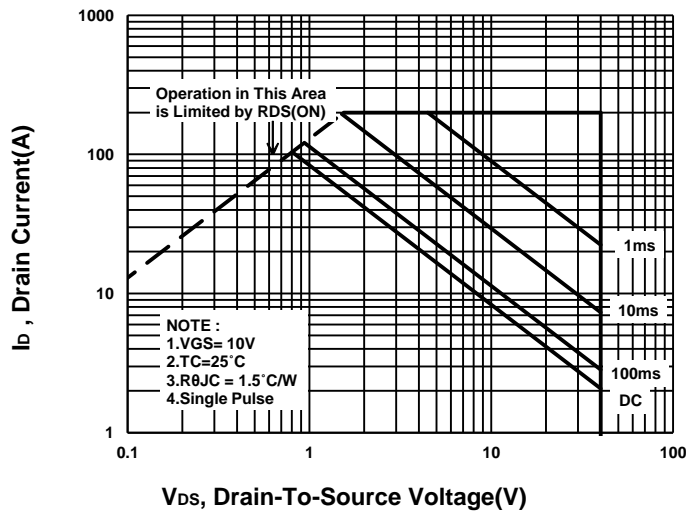
On-Resistance VS Temperature



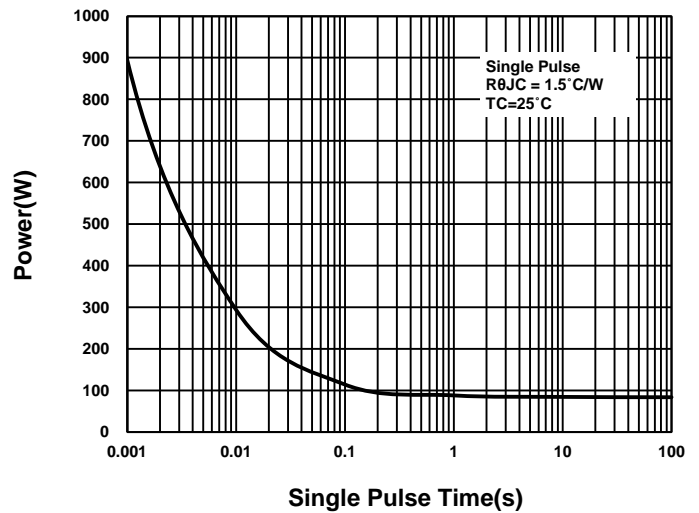
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

