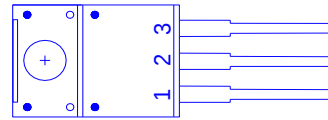
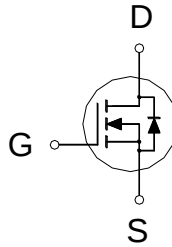




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	22.5m Ω	28A



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ 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	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	28	A
	$T_C = 100\text{ }^{\circ}\text{C}$		18	
Pulsed Drain Current ¹		I_{DM}	100	
Avalanche Current		I_{AS}	25	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	31	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	39	W
	$T_C = 100\text{ }^{\circ}\text{C}$		15	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3.2	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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

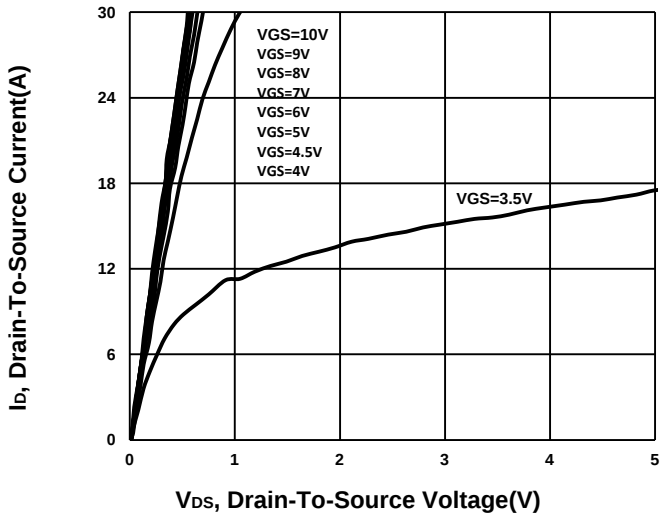
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.3	1.75	2.3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 48V , V _{GS} = 0V			1	μA
		V _{DS} = 40V, V _{GS} = 0V, T _J = 125 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 12A		21	30	mΩ
		V _{GS} = 10V , I _D = 20A		18	22.5	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 20A		47		S

DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		1040		pF
Output Capacitance	C _{oss}			133		
Reverse Transfer Capacitance	C _{rss}			91		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1		Ω
Total Gate Charge ²	Q _g (V _{GS} =10V)	V _{DS} = 30V, I _D = 20A		25		nC
	Q _g (V _{GS} =4.5V)			14		
Gate-Source Charge ²	Q _{gs}			3.2		
Gate-Drain Charge ²	Q _{gd}			8.8		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 30V I _D ≅ 20A, V _{GS} = 10V, R _{GEN} =6Ω		39		nS
Rise Time ²	t _r			23		
Turn-Off Delay Time ²	t _{d(off)}			102		
Fall Time ²	t _f			33		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				28	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 / μS		22		nS
Reverse Recovery Charge	Q _{rr}			15		nC

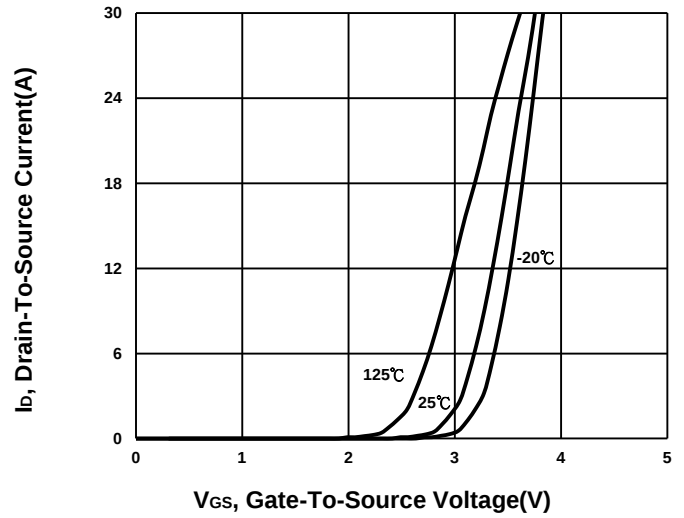
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

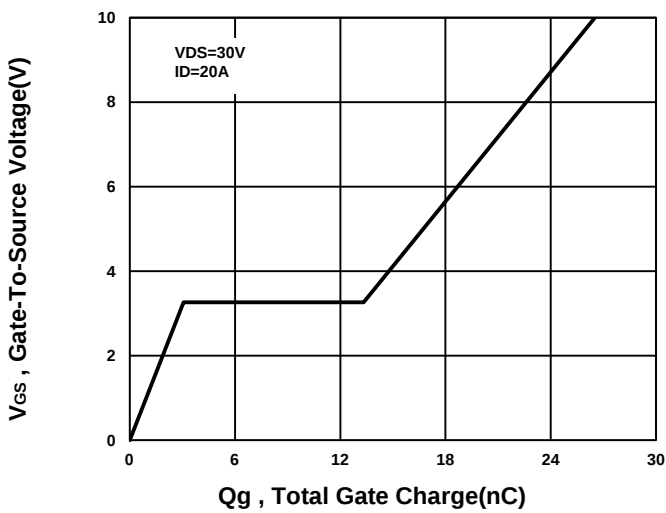
Output Characteristics



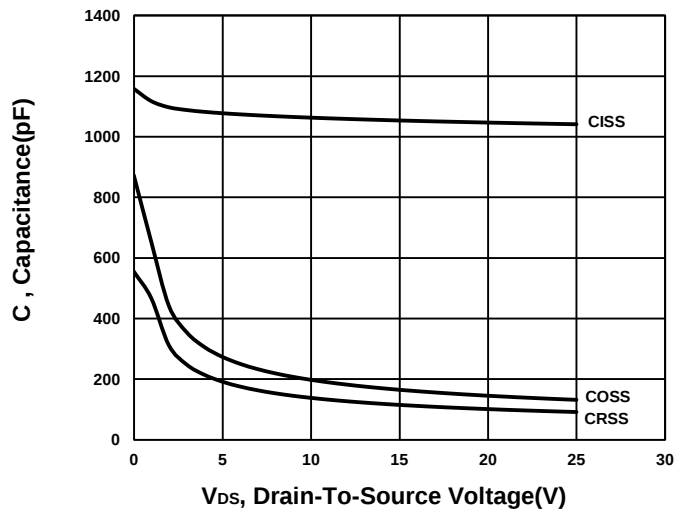
Transfer Characteristics



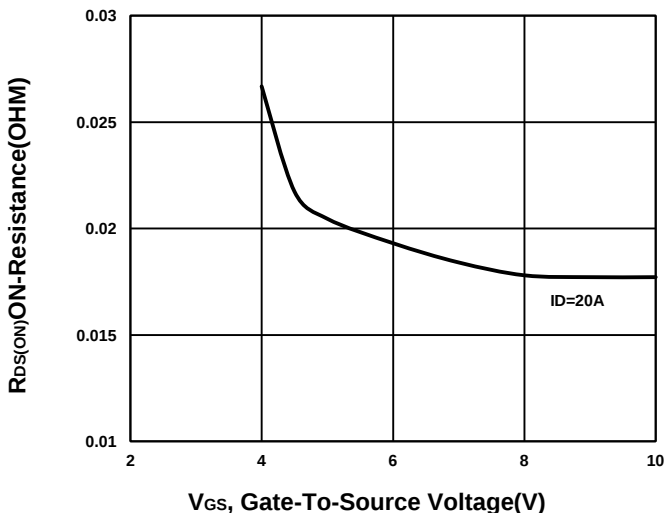
Gate charge Characteristics



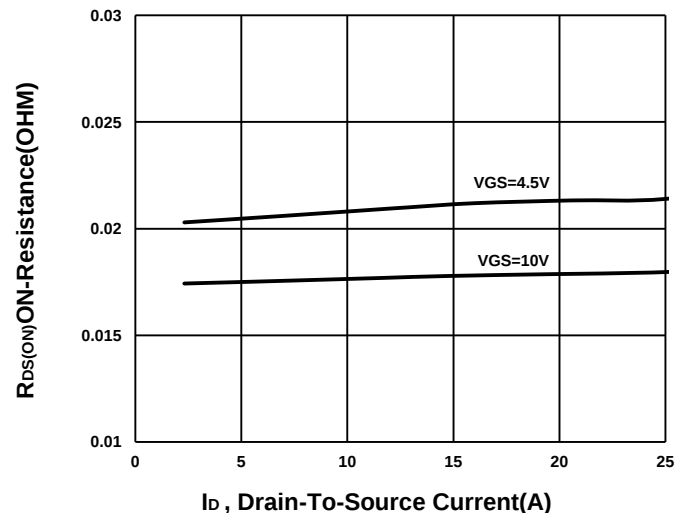
Capacitance Characteristic



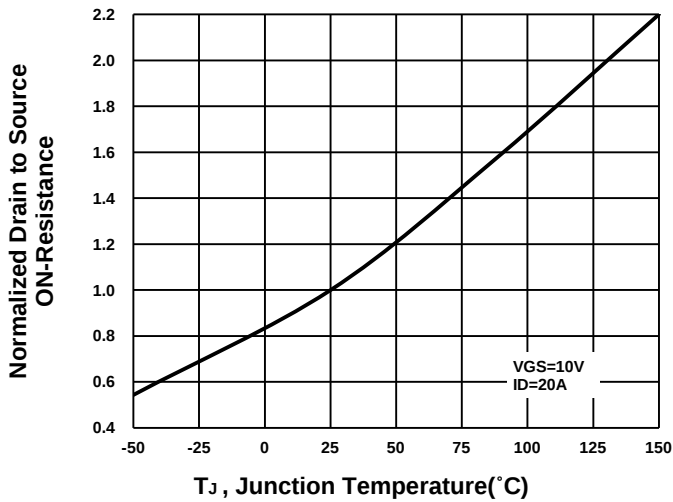
On-Resistance VS Gate-To-Source



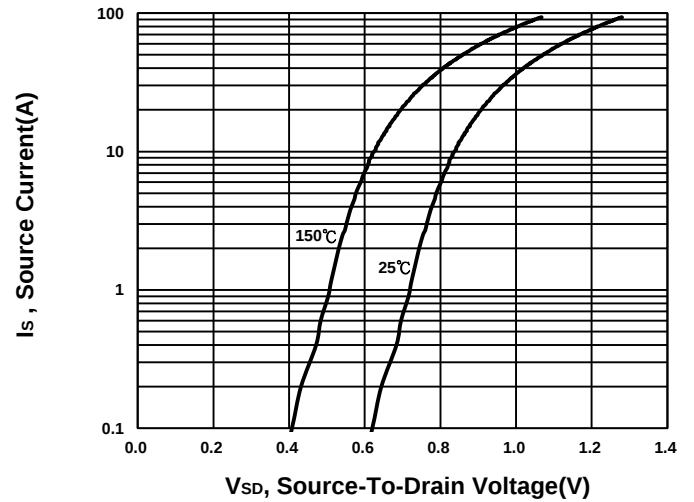
On-Resistance VS Drain Current



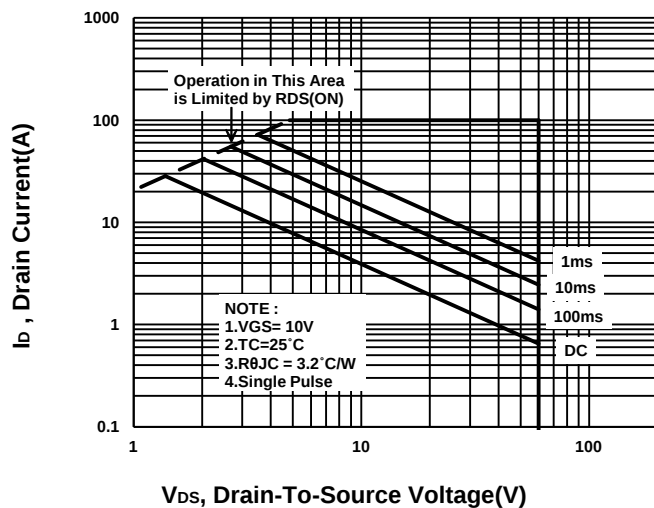
On-Resistance VS Temperature



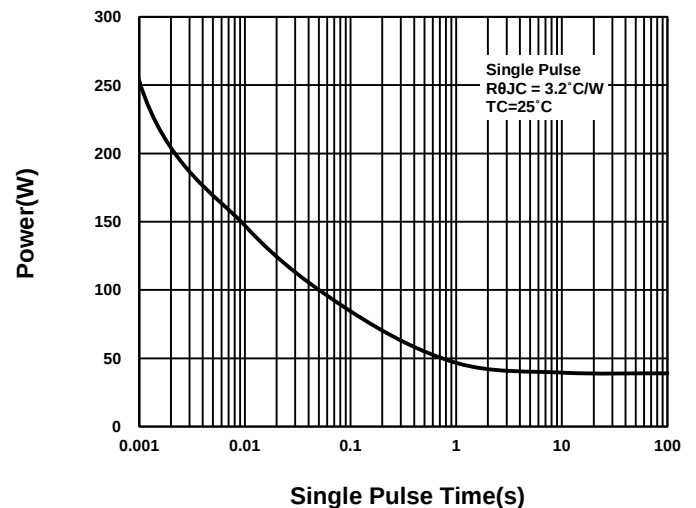
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

