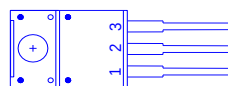
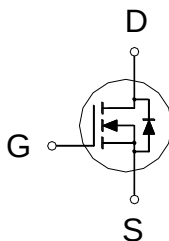


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
650V	450m Ω	10A



1. GATE
2. DRAIN
3. SOURCE


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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	650	V
Gate-Source Voltage		V_{GS}	± 30	V
Continuous Drain Current ²	$T_C = 25^\circ\text{C}$	I_D	10	A
	$T_C = 100^\circ\text{C}$		6.5	
Pulsed Drain Current ¹		I_{DM}	30	
Avalanche Current ³		I_{AS}	2.7	A
Avalanche Energy ³		E_{AS}	145	mJ
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	36	W
	$T_C = 100^\circ\text{C}$		14	
Operating 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	$R_{\theta JC}$		3.1	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Ensure that the channel temperature does not exceed 150°C .

³ $V_{DD} = 50\text{V}$, $L = 40\text{mH}$, starting $T_J = 25^\circ\text{C}$.

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, 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	650			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3.4	4	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±30V			±100	nA
Gate Voltage Drain Current	I _{DSS}	V _{DS} = 650V, V _{GS} = 0V , T _C = 25 °C			1	μA
		V _{DS} = 520V, V _{GS} = 0V , T _C = 100 °C			10	

Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 5A		397	450	mΩ
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 5A		12.5		S
DYNAMIC						
Input Capacitance	C _{iSS}	V _{GS} = 0V, V _{DS} = 100V, f = 250KHz		769		pF
Output Capacitance	C _{oSS}			45		
Reverse Transfer Capacitance	C _{rSS}			6.6		
Effective Output Capacitance ⁴	C _{o(er)}	V _{GS} = 0V, V _{DS} = 0 to 520V		34		
Total Gate Charge ²	Q _g	V _{DD} = 520V, I _D = 5A, V _{GS} = 10V		20		nC
Gate-Source Charge ²	Q _{gs}			3.8		
Gate-Drain Charge ²	Q _{gd}			7.7		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 325V, I _D = 5A, R _G = 25Ω , V _{GS} = 10V		21		nS
Rise Time ²	t _r			47		
Turn-Off Delay Time ²	t _{d(off)}			64		
Fall Time ²	t _f			42		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current ³	I _S				11	A
Forward Voltage ¹	V _{SD}	I _F = 10A, V _{GS} = 0V			1	V
Reverse Recovery Time	t _{rr}	I _F = 5A, dI _F /dt = 100A / μS		232		nS
Reverse Recovery Charge	Q _{rr}			2		uC

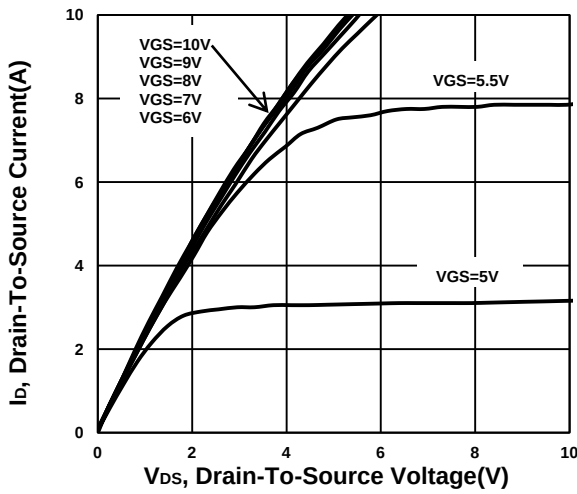
¹Pulse test : Pulse Width $\leq 380 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

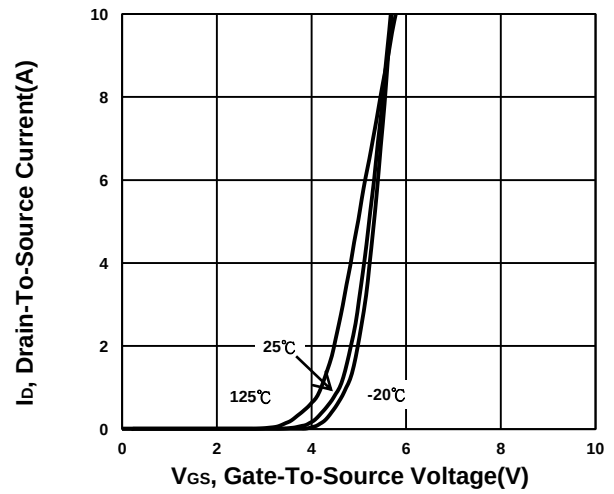
³Pulse width limited by maximum junction temperature.

⁴ $C_{o(er)}$ is a fixed capacitance that gives the same stored energy as C_{oss} while V_{DS} is rising from 0 to 80% $V_{(BR)DSS}$.

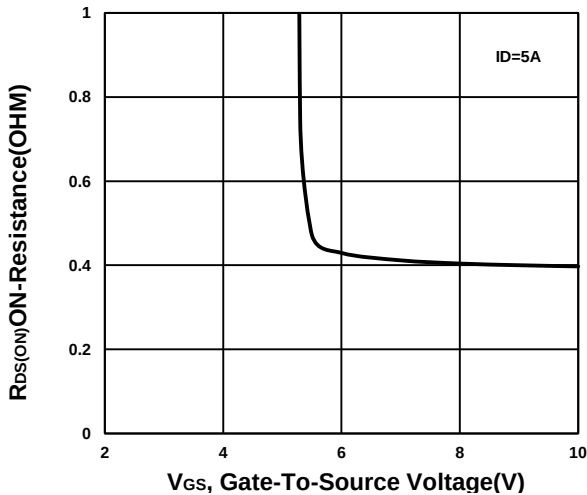
Output Characteristics



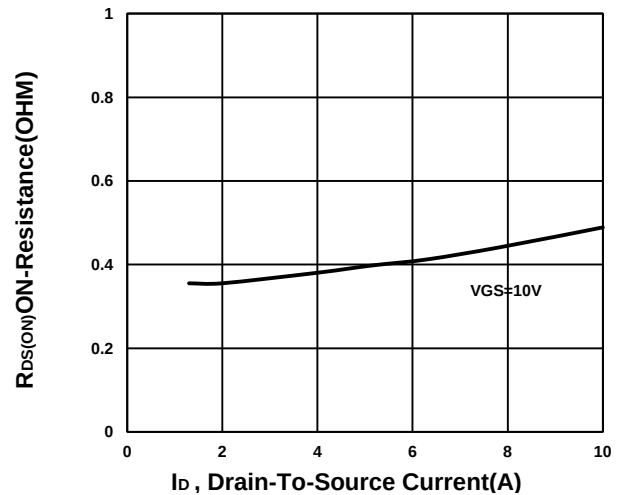
Transfer Characteristics



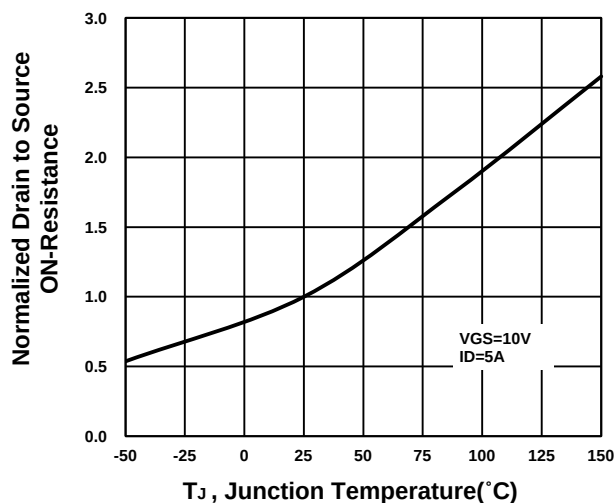
On-Resistance VS Gate-To-Source Voltage



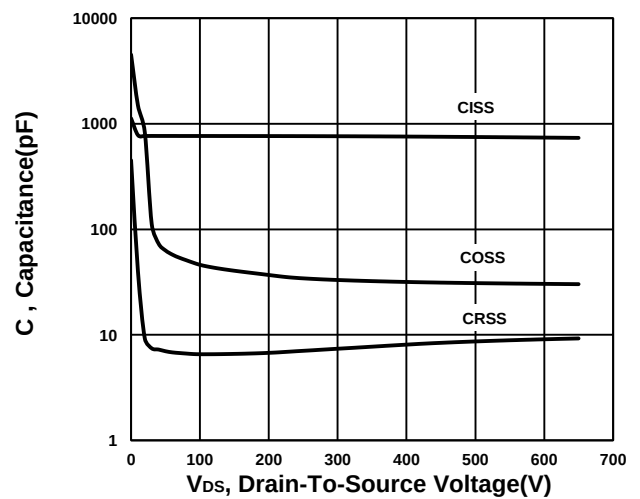
On-Resistance VS Drain Current



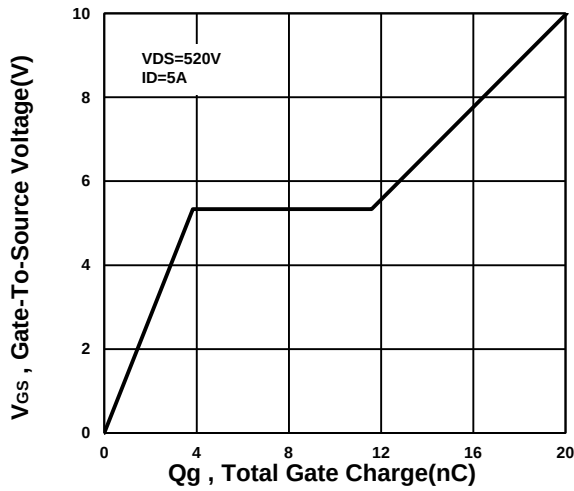
On-Resistance VS Temperature



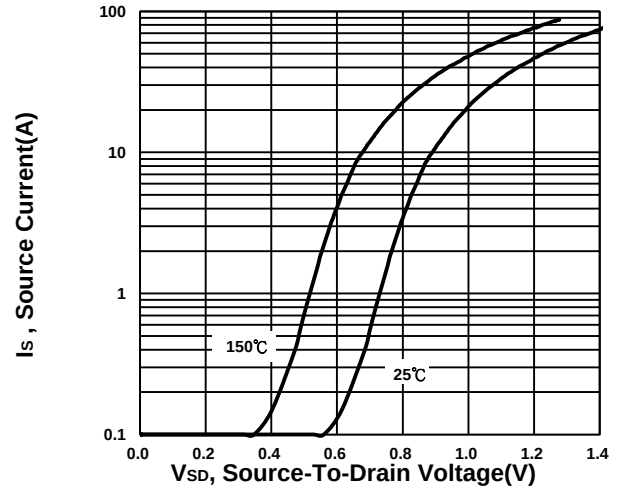
Capacitance Characteristic



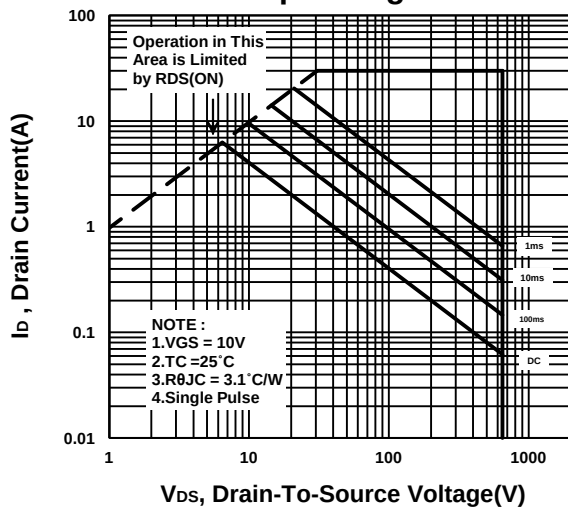
Gate charge Characteristics



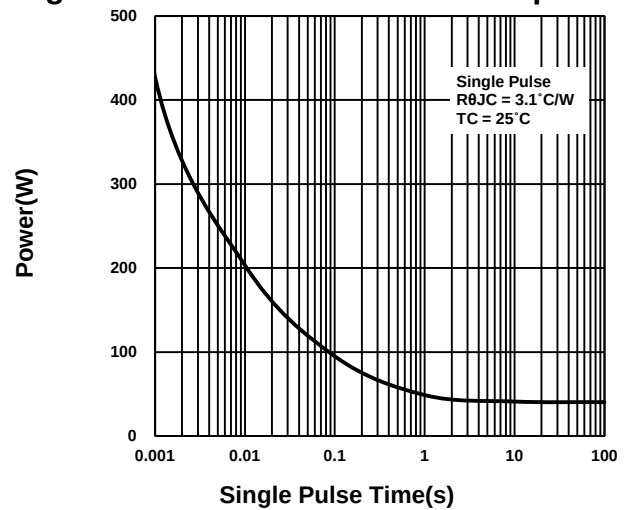
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

