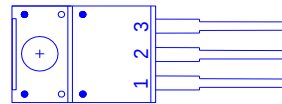
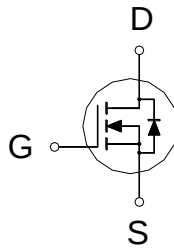




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
500V	0.52Ω	13A



1. GATE
2. DRAIN
3. SOURCE

100% UIS tested

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	500	V
Gate-Source Voltage		V_{GS}	± 30	V
Continuous Drain Current ²	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	13	A
	$T_C = 100\text{ }^{\circ}\text{C}$		8	
Pulsed Drain Current ^{1, 2}		I_{DM}	45	
Avalanche Current ³		I_{AS}	4	
Avalanche Energy ³		E_{AS}	80	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	39	W
	$T_C = 100\text{ }^{\circ}\text{C}$		15	
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	$R_{\theta JC}$		3.2	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Limited only by maximum temperature allowed

³ $V_{DD} = 50\text{V}$, $L = 10\text{mH}$, starting, $T_J = 25\text{ }^{\circ}\text{C}$

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	500			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	2.6	4	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±30V			±100	nA
Gate Voltage Drain Current	I _{DSS}	V _{DS} = 500V, V _{GS} = 0V , T _C = 25 °C			1	μA
		V _{DS} = 400V, V _{GS} = 0V , T _C = 100 °C			10	

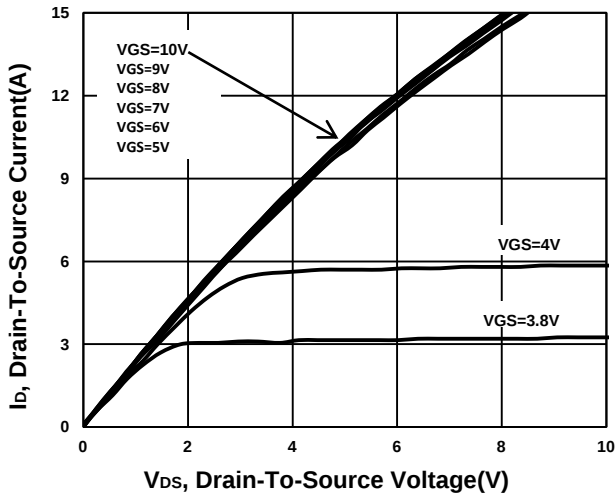
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 6.5A		0.417	0.52	Ω
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 6.5A		16		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		1572		pF
Output Capacitance	C _{oss}			159		
Reverse Transfer Capacitance	C _{rss}			13		
Total Gate Charge ²	Q _g	V _{DD} = 400V, I _D = 13A, V _{GS} = 10V		39		nC
Gate-Source Charge ²	Q _{gs}			6.5		
Gate-Drain Charge ²	Q _{gd}			12.4		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 250V, I _D = 13A, R _G = 4.7 Ω		30		nS
Rise Time ²	t _r			60		
Turn-Off Delay Time ²	t _{d(off)}			80		
Fall Time ²	t _f			65		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current ³	I _S				13	A
Forward Voltage ¹	V _{SD}	I _F =13A, V _{GS} = 0V			1.7	V
Reverse Recovery Time	t _{rr}	I _F = 13A, dI _F /dt = 100A / μS		326		nS
Reverse Recovery Charge	Q _{rr}			4.1		uC

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

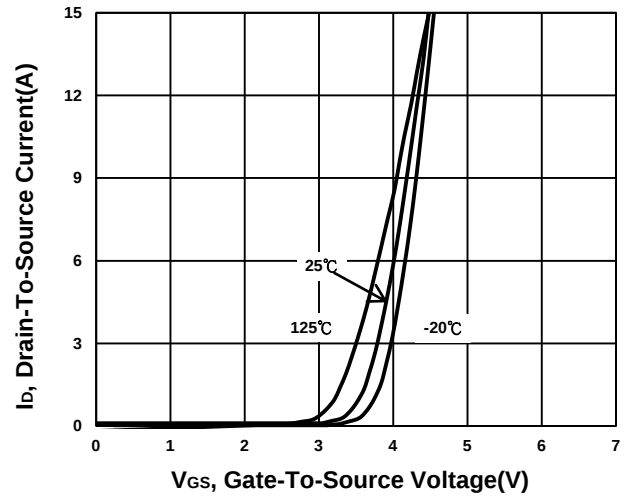
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

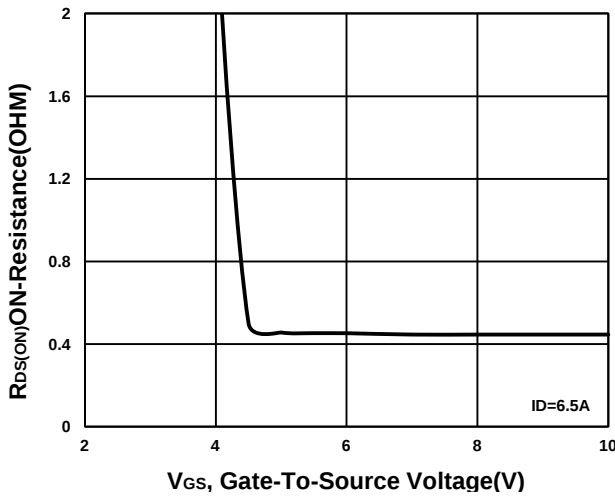
Output Characteristics



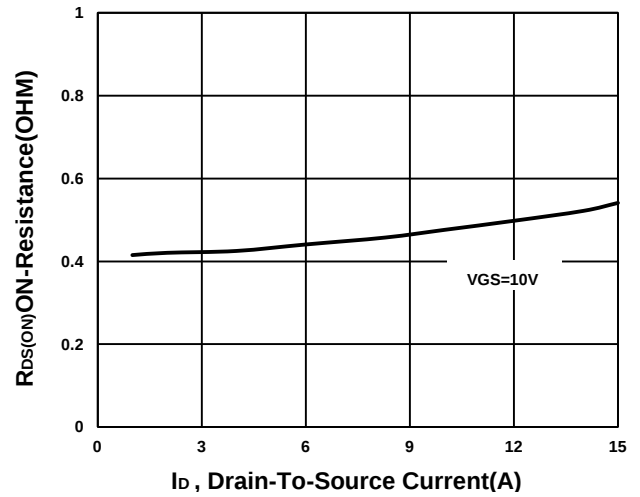
Transfer Characteristics



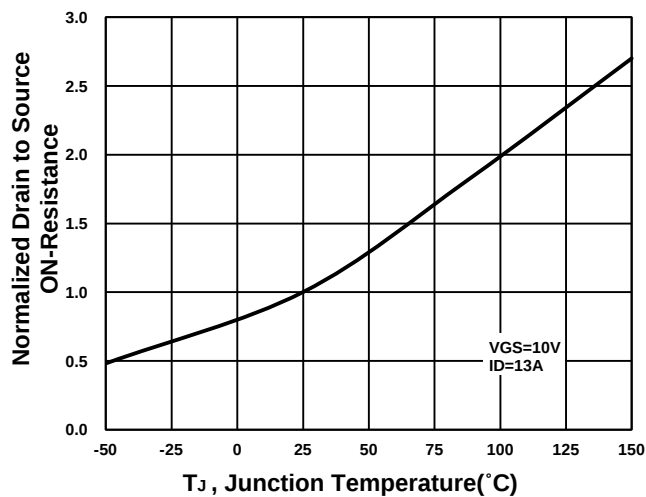
On-Resistance VS Gate-To-Source



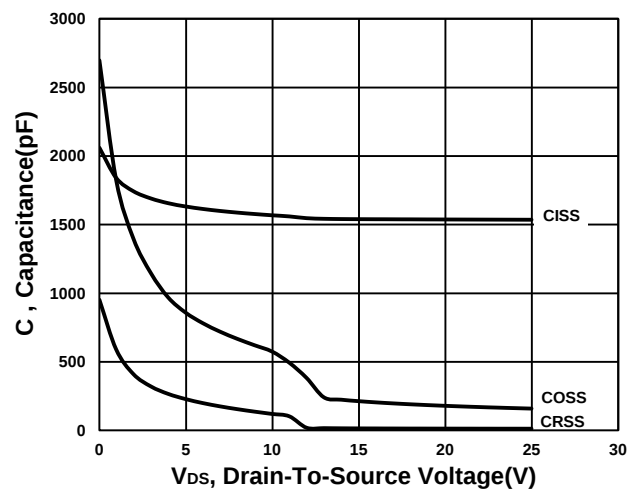
On-Resistance VS Drain Current



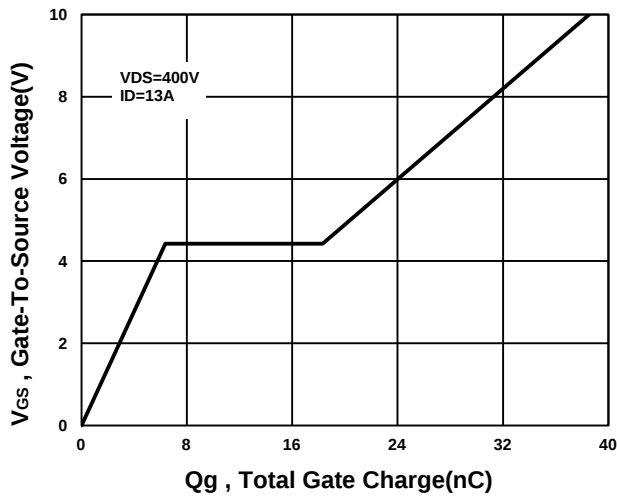
On-Resistance VS Temperature



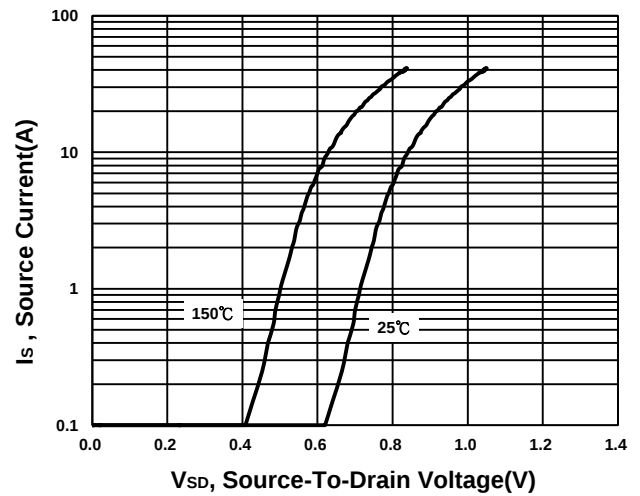
Capacitance Characteristic



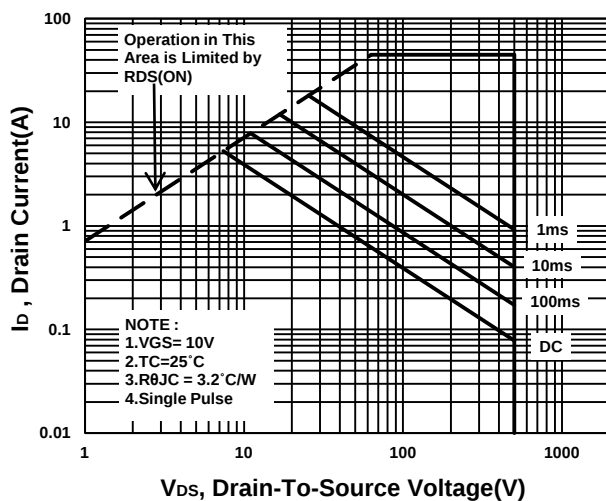
Gate charge Characteristics



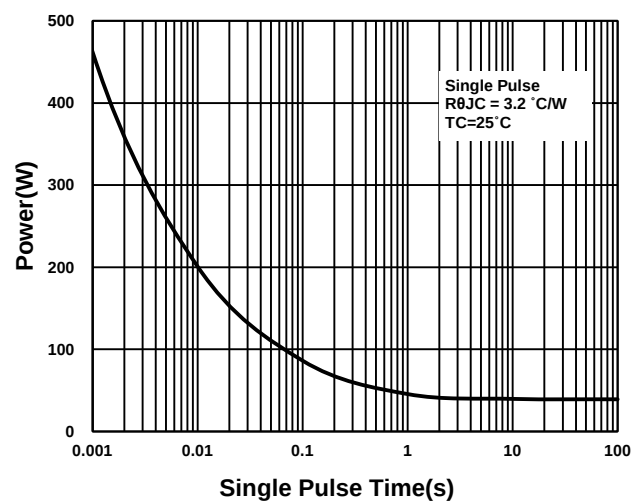
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

