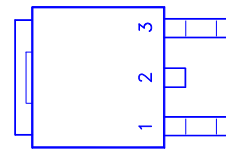
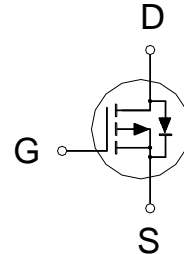




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	44mΩ	-19A



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

Features

- Pb-Free, Halogen Free and RoHS compliant.
- Low $R_{DS(on)}$ to Minimize Conduction Losses.
- Ohmic Region Good $R_{DS(on)}$ Ratio.
- Optimized Gate Charge to Minimize Switching Losses.

Applications

- Protection Circuits Applications.
- Logic/Load Switch Circuits Applications.

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	$T_C = 25\text{ °C}$	I_D	-19	A
	$T_C = 100\text{ °C}$		-12	
Pulsed Drain Current ¹		I_{DM}	-50	
Avalanche Current		I_{AS}	20	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	20	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	31	W
	$T_C = 100\text{ °C}$		12	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		4	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

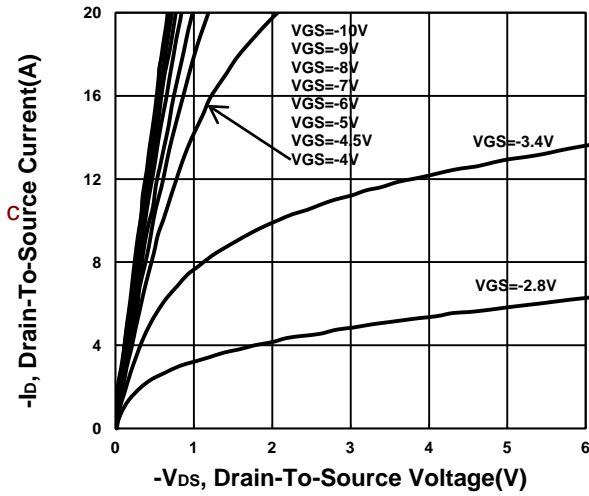
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-40			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.3	-1.85	-2.5	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±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 °C			-10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -8A		46	68	mΩ
		V _{GS} = -10V, I _D = -10A		31	44	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -10A		17.5		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -20V, f = 1MHz		799		pF
Output Capacitance	C _{oss}			103		
Reverse Transfer Capacitance	C _{rss}			81		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		5.2		Ω
Total Gate Charge ²	Q _g (V _{GS} =-10V)	V _{DS} = -20V, V _{GS} = -10V, I _D = -10A		17		nC
	Q _g (V _{GS} =-4.5V)			9.1		
Gate-Source Charge ²	Q _{gs}			2.4		
Gate-Drain Charge ²	Q _{gd}			4.6		
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = -20V , I _D ≅ -10A, V _{GS} = -10V, R _{GEN} = 6Ω		9	
Rise Time ²	t _r			40		
Turn-Off Delay Time ²	t _{d(off)}			34		
Fall Time ²	t _f			57		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				-19	A
Forward Voltage ¹	V _{SD}	I _F = -10A, V _{GS} = 0V			-1.3	V
Reverse Recovery Time	t _{rr}	I _F = -10A, dI _F /dt = 100A / μS		10		nS
Reverse Recovery Charge	Q _{rr}			4.2		nC

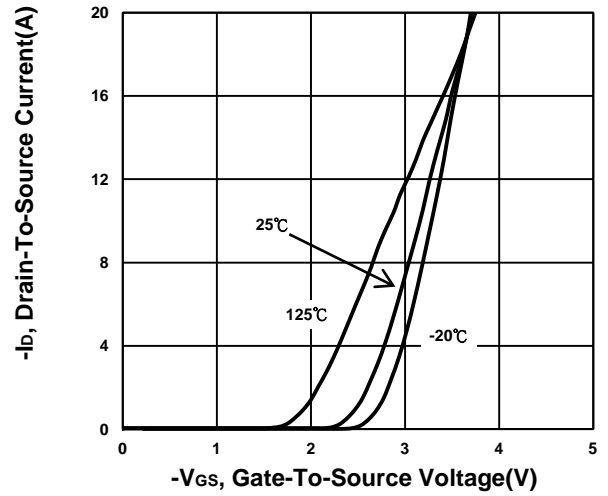
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

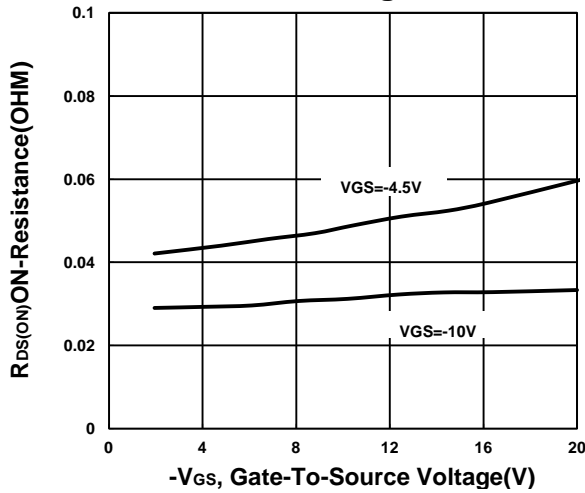
Output Characteristics



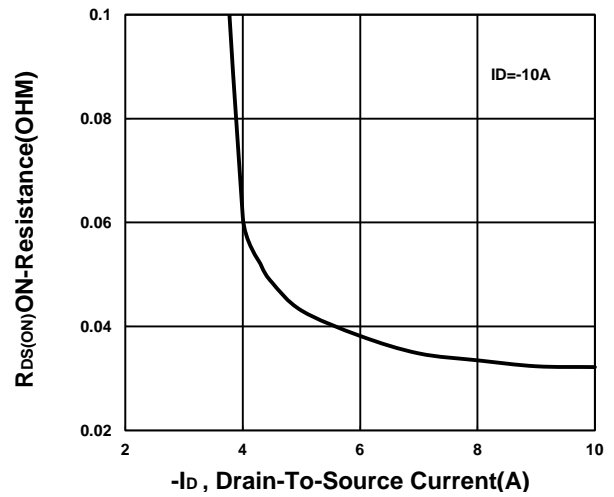
Transfer Characteristics



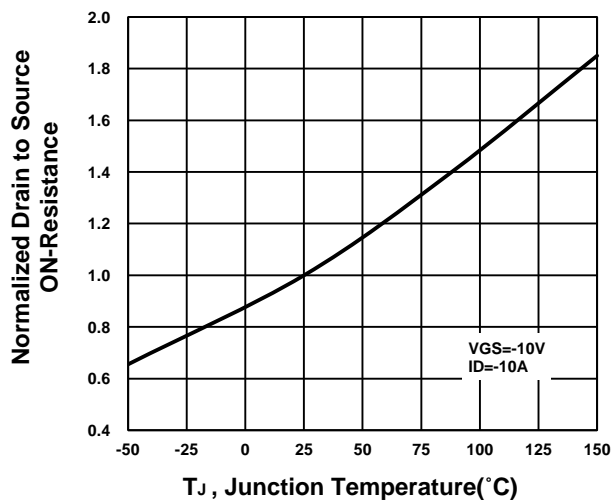
On-Resistance VS Gate-To-Source Voltage



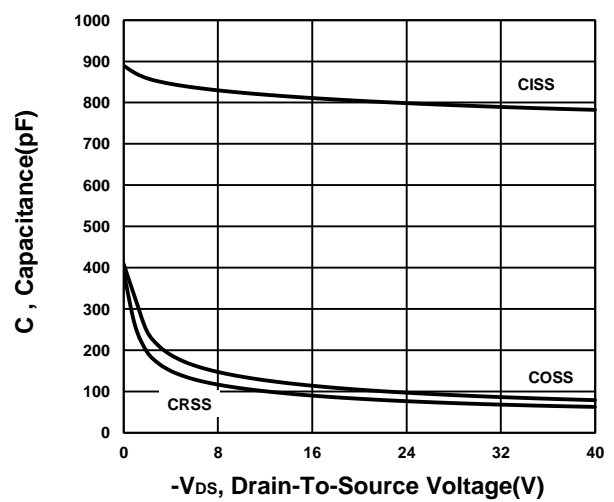
On-Resistance VS Drain Current



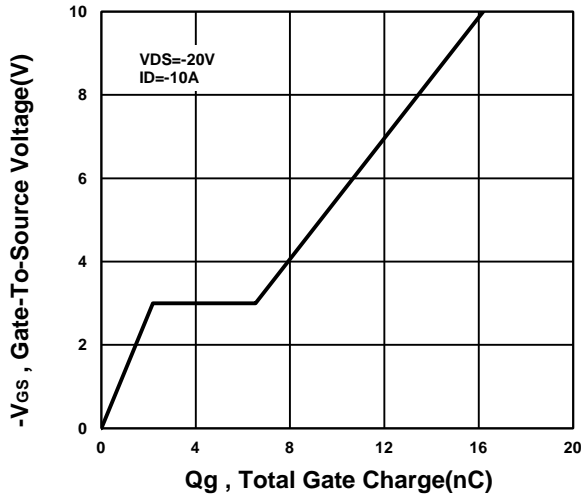
On-Resistance VS Temperature



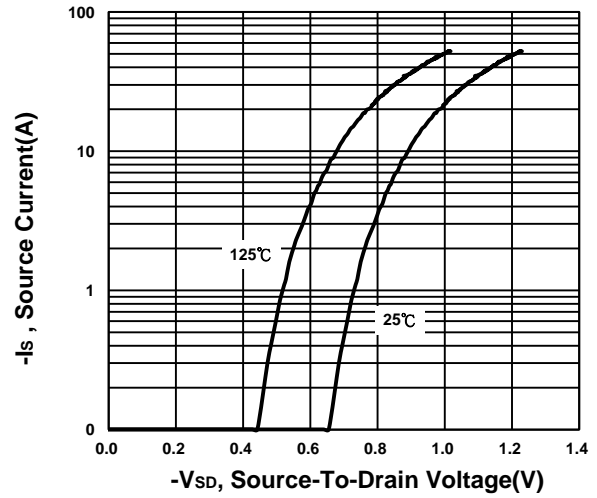
Capacitance Characteristic



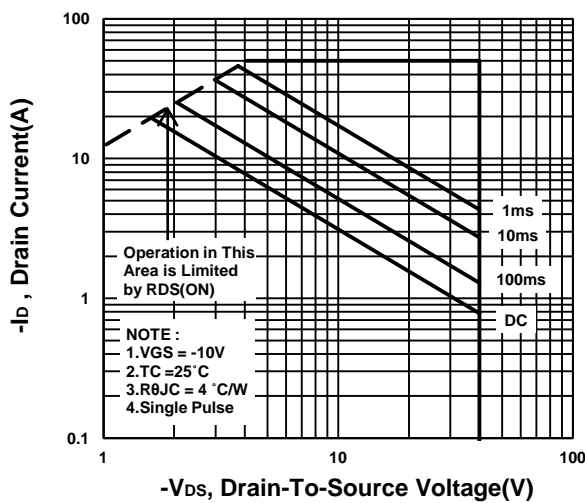
Gate charge Characteristics



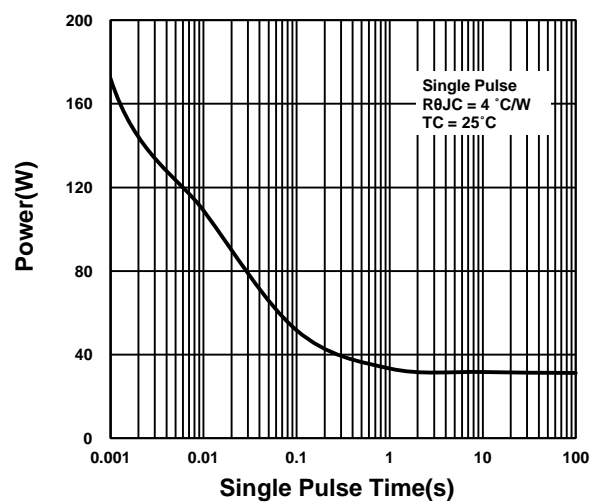
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

