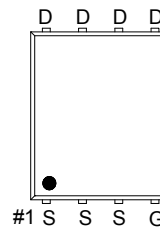
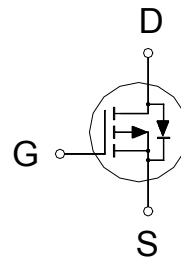




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	7mΩ	-43A



G : GATE
D : DRAIN
S : 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.
- ESD Protected up to 2KV.

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}	-30	V
Gate-Source Voltage		V_{GS}	±25	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	-43	A
	$T_C = 100\text{ °C}$		-27	
	$T_A = 25\text{ °C}$		-13	
	$T_A = 70\text{ °C}$		-10	
Pulsed Drain Current ¹		I_{DM}	-110	
Avalanche Current		I_{AS}	-38	
Avalanche Energy	L = 0.1mH	E_{AS}	72	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	25	W
	$T_C = 100\text{ °C}$		10	
	$T_A = 25\text{ °C}$		2.2	
	$T_A = 70\text{ °C}$		1.4	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	R _{θJA}		56	°C / W
Junction-to-Case	R _{θJC}		5	

¹Pulse width limited by maximum junction temperature.

²The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25° C. The value in any given application depends on the user's specific board design.

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	-30			V		
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-3			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±25V			±100	nA		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	uA		
		V _{DS} = -20V, V _{GS} = 0V, T _J = 125 °C			-10			
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -13A		8.4	12	mΩ		
		V _{GS} = -10V, I _D = -13A		5.7	7			
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -13A		40		S		
DYNAMIC								
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		2822		pF		
Output Capacitance	C _{oss}			452				
Reverse Transfer Capacitance	C _{rss}			364				
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		4		Ω		
Total Gate Charge ²	Q _{g(VGS=-10V)}	V _{DS} = -15V, I _D = -13A		60		nC		
	Q _{g(VGS=-4.5V)}			30				
Gate-Source Charge ²	Q _{gs}			6.1				
Gate-Drain Charge ²	Q _{gd}			14				
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = -15V, I _D ≅ -13A, V _{GS} = -10V, R _{GS} = 6Ω		39			nS
Rise Time ²	t _r				26			
Turn-Off Delay Time ²	t _{d(off)}				161			
Fall Time ²	t _f			100				

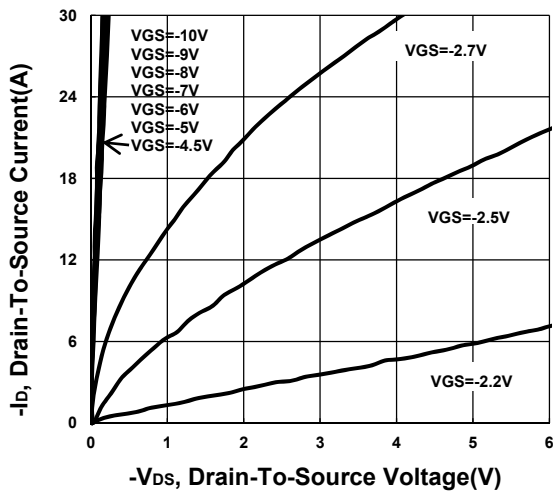
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)

Continuous Current	I _S				-19	A
Forward Voltage ¹	V _{SD}	I _F = -13A, V _{GS} = 0V			-1.3	V
Reverse Recovery Time	t _{rr}	I _F = -13A , di _F /dt = 100 A / μS		23		nS
Reverse Recovery Charge	Q _{rr}			6		nC

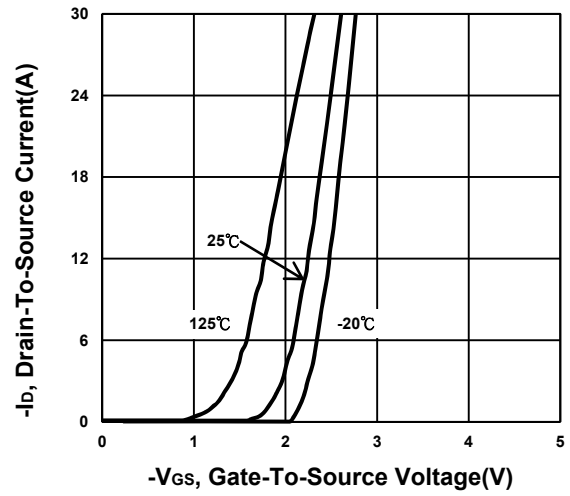
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

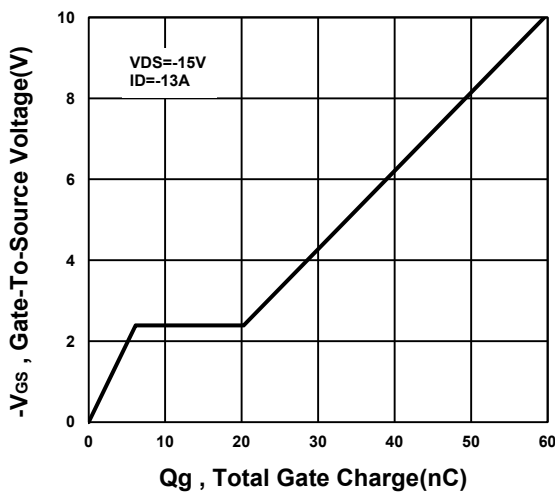
Output Characteristics



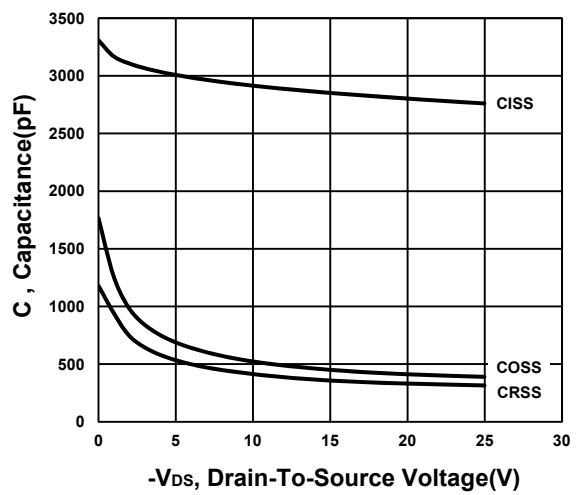
Transfer Characteristics



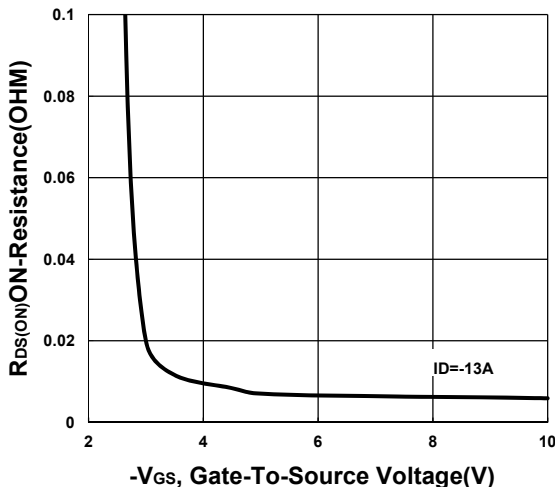
Gate charge Characteristics



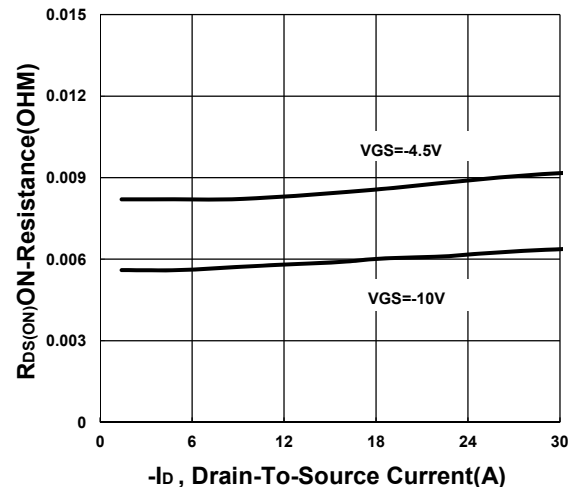
Capacitance Characteristic



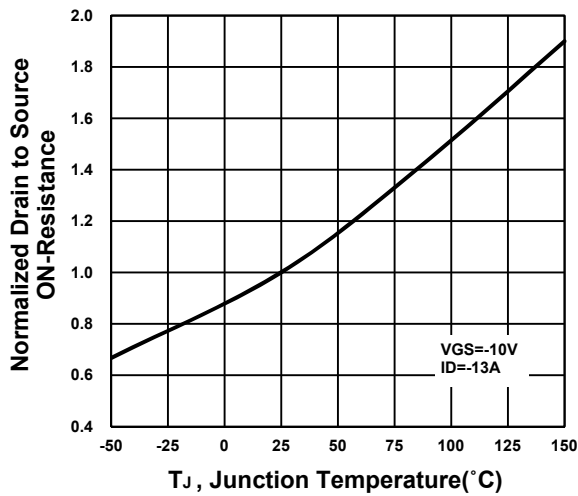
On-Resistance VS Gate-To-Source



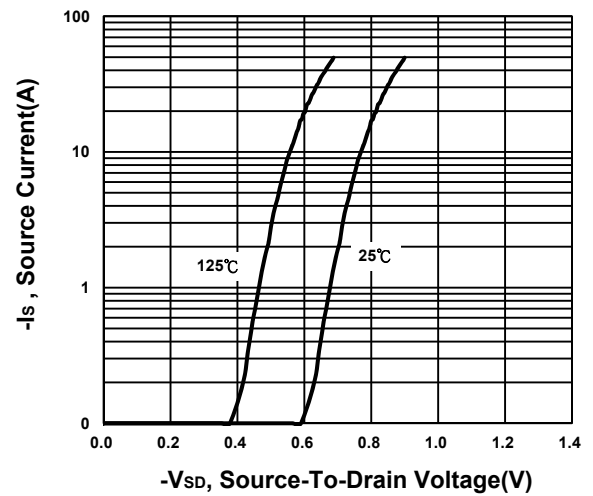
On-Resistance VS Drain Current



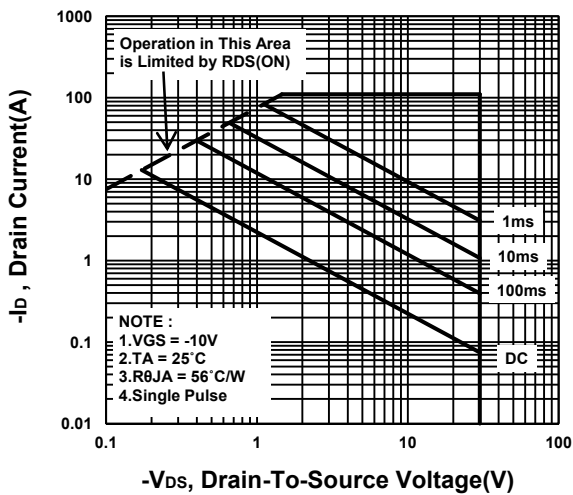
On-Resistance VS Temperature



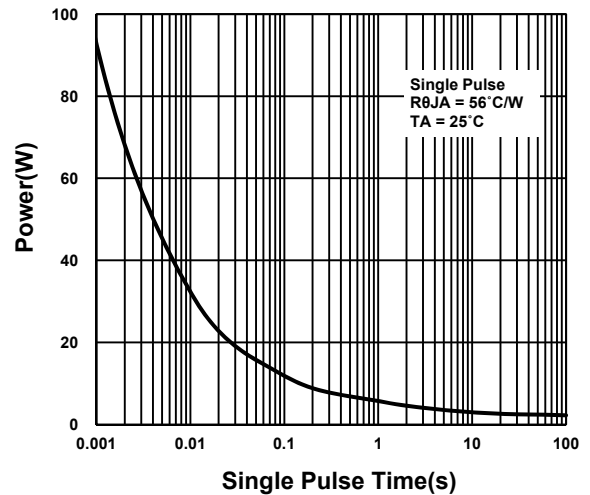
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

