



PRODUCT SUMMARY

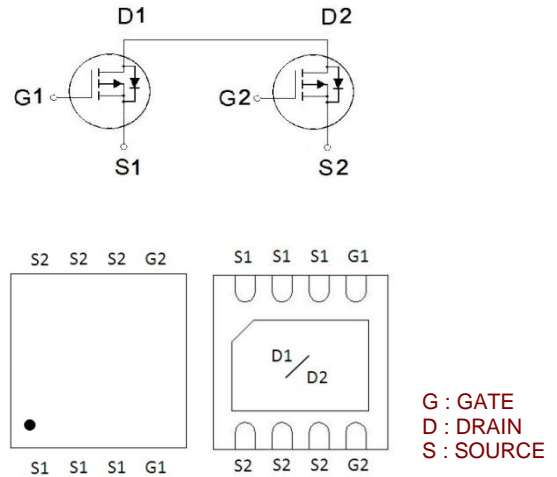
$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	16mΩ	-37A

Features

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

Applications

- Protection Circuits Applications.
- Portable Devices for Battery PACK 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 ²	$T_C = 25\text{ °C}$	I_D	-37	A
	$T_C = 100\text{ °C}$		-23.5	
	$T_A = 25\text{ °C}$		-9	
	$T_A = 70\text{ °C}$		-7.1	
Pulsed Drain Current ¹		I_{DM}	-100	
Avalanche Current		I_{AS}	-25.8	
Avalanche Energy	L = 0.1mH	E_{AS}	33	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	38	W
	$T_C = 100\text{ °C}$		14	
	$T_A = 25\text{ °C}$		15	
	$T_A = 70\text{ °C}$		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 ³	$R_{\theta JA}$		56	°C/W
Junction-to-case	$R_{\theta JC}$		3.25	

¹Pulse width limited by maximum junction temperature.

²Package limitation current is -16A.

³The value of $R_{\theta JA}$ is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ °C}$.

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

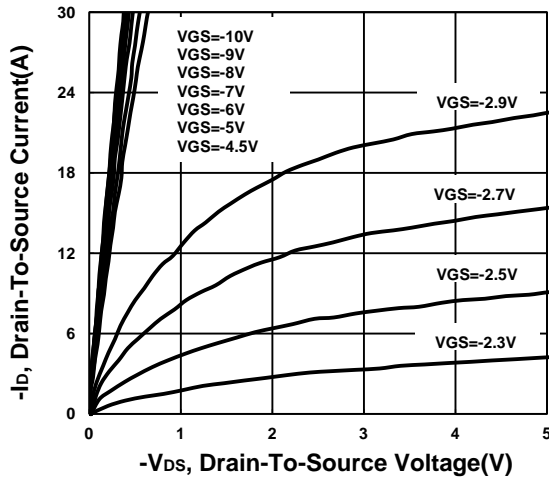
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.7	-3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±25V			±100	nA
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} = -10V, I _D = -12A		12.5	16	mΩ
		V _{GS} = -4.5V, I _D = -12A		19.3	30	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -12A		30		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		1233		pF
Output Capacitance	C _{oss}			198		
Reverse Transfer Capacitance	C _{rss}			174		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		5.8		Ω
Total Gate Charge ²	Q _{g(VGS=-10V)}	V _{DS} = -15V, I _D = -12A		29		nC
	Q _{g(VGS=-4.5V)}			15		
Gate-Source Charge ²	Q _{gs}			2.6		
Gate-Drain Charge ²	Q _{gd}			7.6		
Turn-On Delay Time ²	t _{d(on)}		V _{DD} = -15V I _D ≅ -12A, V _{GEN} = -10V, R _G = 6Ω		12	
Rise Time ²	t _r			69		
Turn-Off Delay Time ²	t _{d(off)}			76		
Fall Time ²	t _f			95		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I _S				-29	A
Forward Voltage ¹	V _{SD}	I _F = -12A, V _{GS} = 0V			-1.3	V
Reverse Recovery Time	t _{rr}	I _F = -12A, dI _F /dt = 100A / μS		26		nS
Reverse Recovery Charge	Q _{rr}			10		nC

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

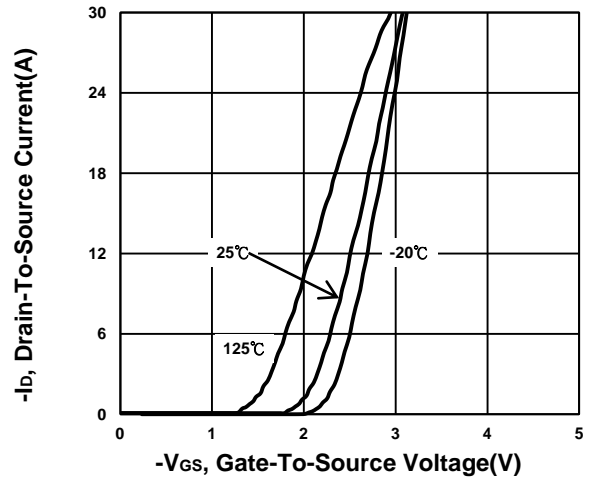
²Independent of operating temperature.

³Package limitation current is -16A.

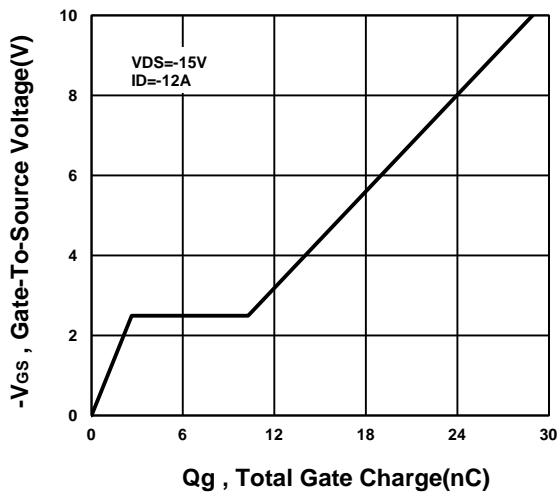
Output Characteristics



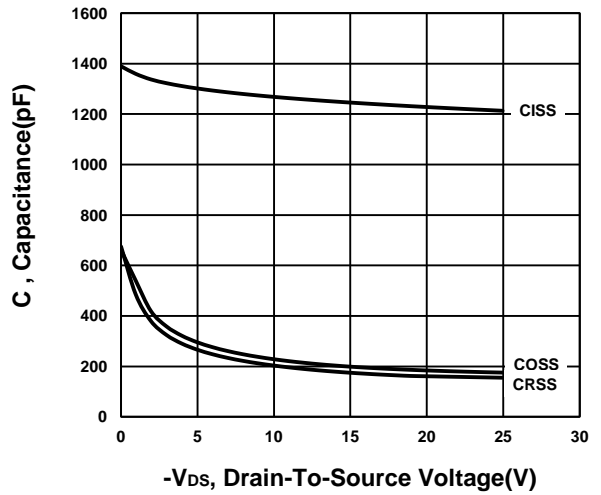
Transfer Characteristics



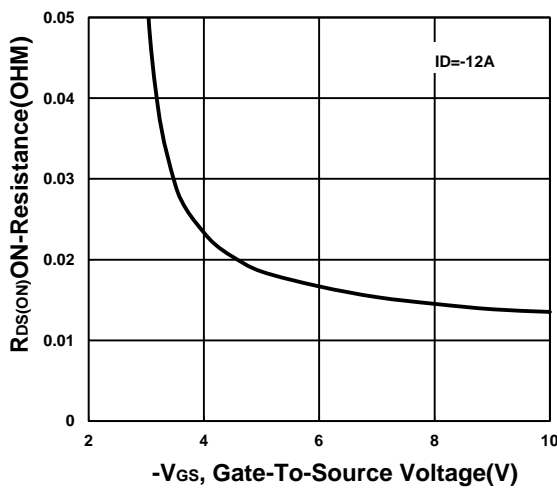
Gate charge Characteristics



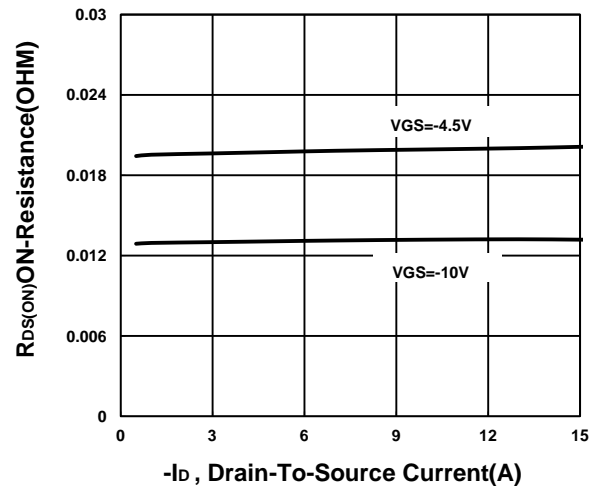
Capacitance Characteristic



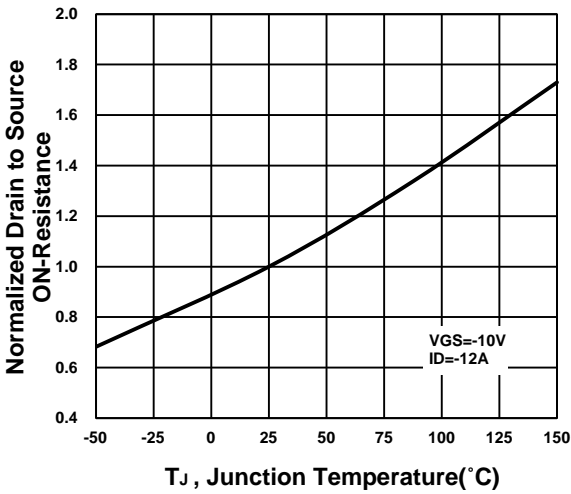
On-Resistance VS Gate-To-Source Voltage



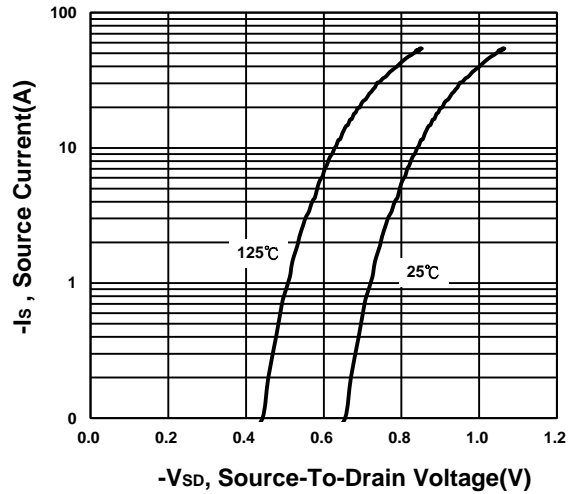
On-Resistance VS Drain Current



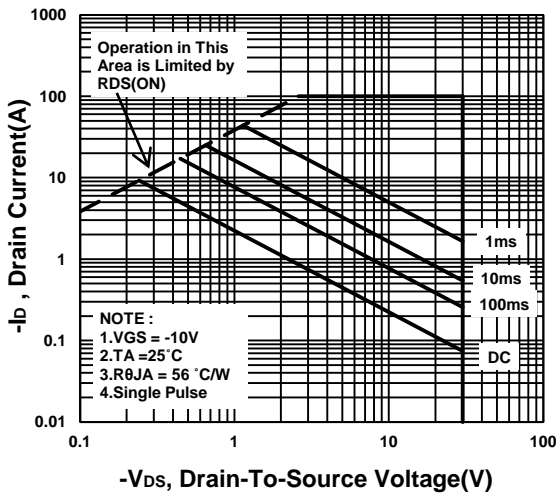
On-Resistance VS Temperature



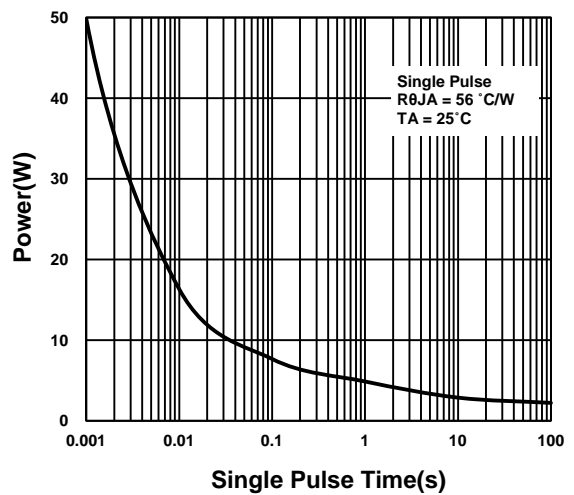
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

