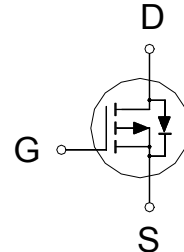




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D^2
-30V	5mΩ	-121A

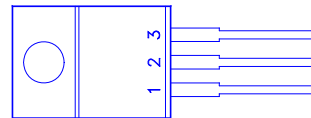


Features

- 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.



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ 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	$T_C = 25\text{ }^\circ\text{C}$	I_D	-121	A
	$T_C = 100\text{ }^\circ\text{C}$		-76	
Pulsed Drain Current ¹		I_{DM}	-200	
Avalanche Current		I_{AS}	-59	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	174	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	125	W
	$T_C = 100\text{ }^\circ\text{C}$		50	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Package limitation current is -55A.

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

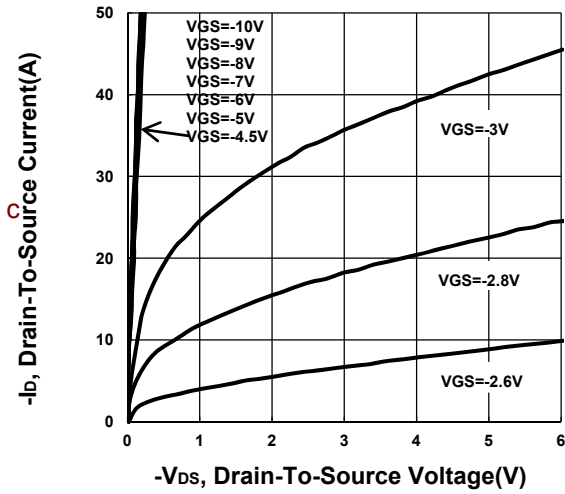
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.6	-3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±25V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	μA
		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 = -12A		4.6	7.5	mΩ
		V _{GS} = -10V, I _D = -12A		3.5	5	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -12A		50		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		6624		pF
Output Capacitance	C _{oss}			1029		
Reverse Transfer Capacitance	C _{rss}			844		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		4		Ω
Total Gate Charge ²	Q _g (V _{GS} =-10V)	V _{DS} = -15V, V _{GS} = -10V, I _D = -12A		141		nC
	Q _g (V _{GS} =-4.5V)			71		
Gate-Source Charge ²	Q _{gs}			17.5		
Gate-Drain Charge ²	Q _{gd}			29		
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = -15V , I _D ≅ -12A, V _{GS} = -10V, R _{GEN} = 6Ω		20	
Rise Time ²	t _r			59		
Turn-Off Delay Time ²	t _{d(off)}			281		
Fall Time ²	t _f			168		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I _S				-112	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		40		nS
Reverse Recovery Charge	Q _{rr}			29		nC

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

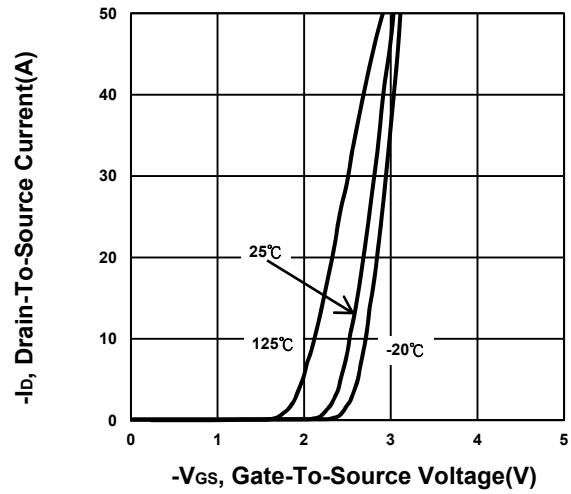
²Independent of operating temperature.

³Package limitation current is -55A.

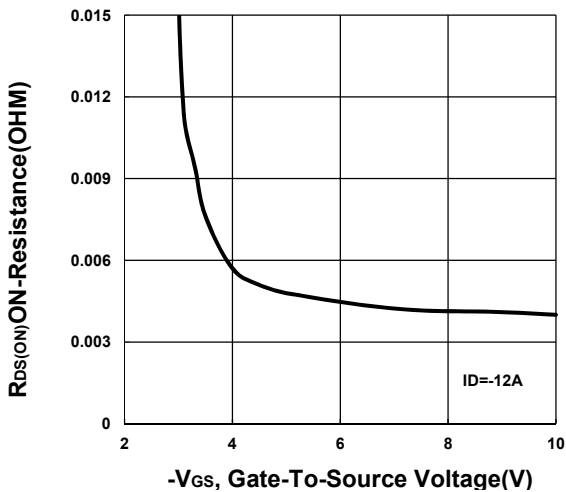
Output Characteristics



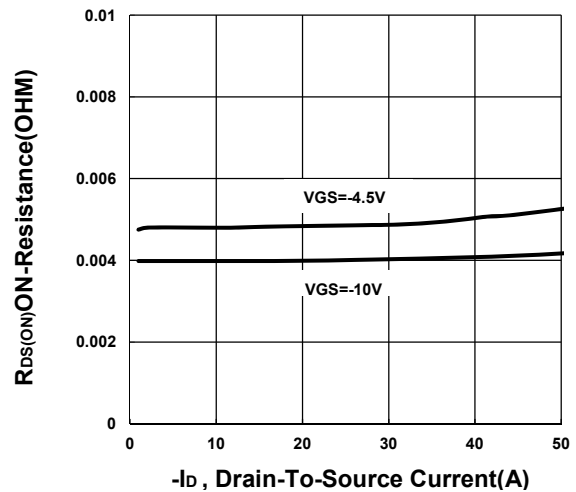
Transfer Characteristics



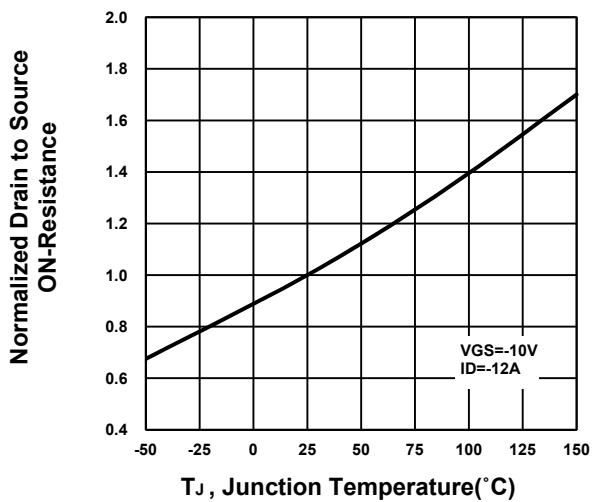
On-Resistance VS Gate-To-Source



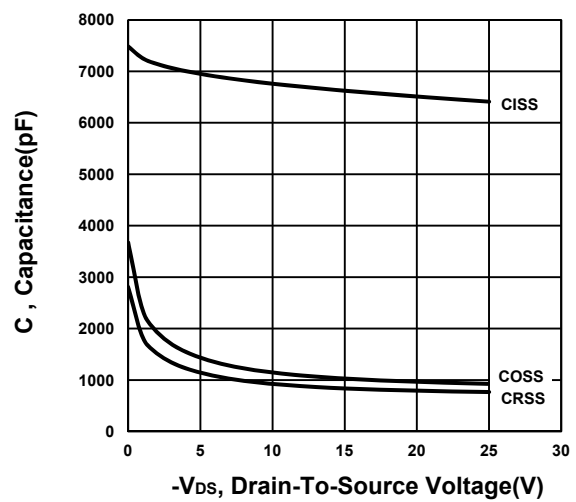
On-Resistance VS Drain Current



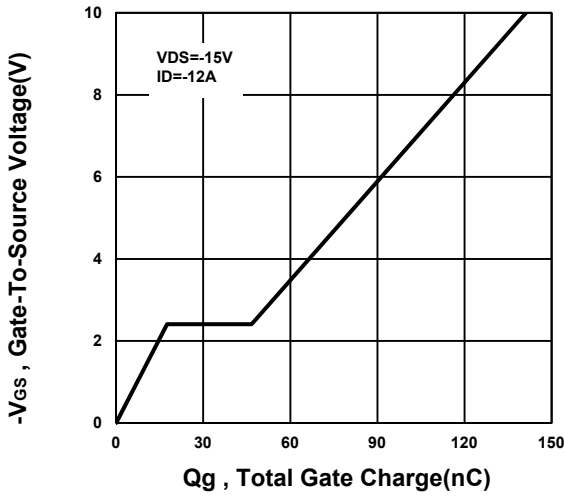
On-Resistance VS Temperature



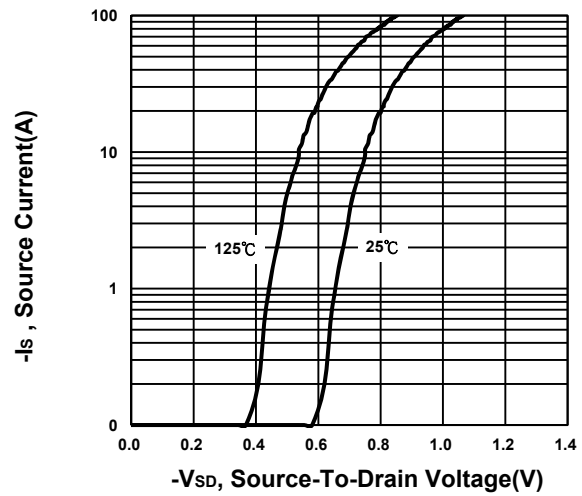
Capacitance Characteristic



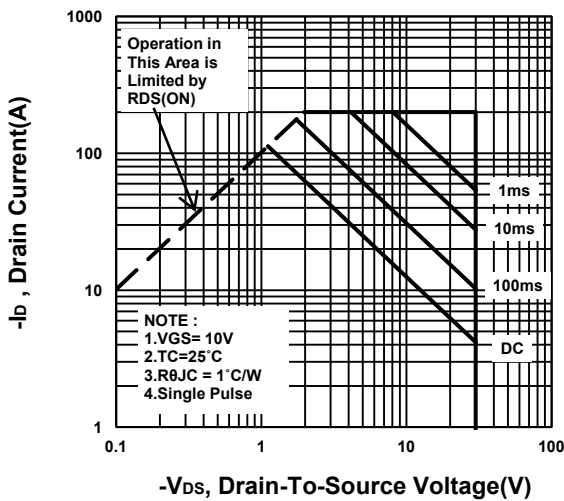
Gate charge Characteristics



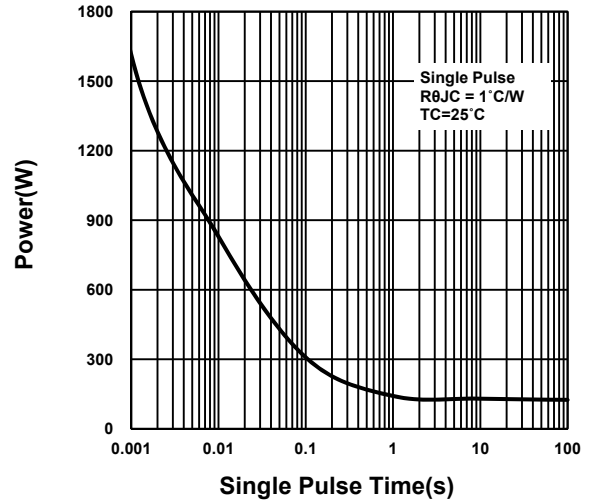
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

