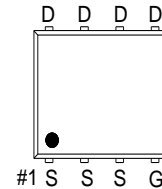
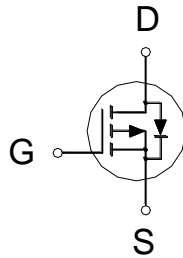


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	8.5mΩ	-33A



G : GATE
D : DRAIN
S : SOURCE



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}	±20	V
Continuous Drain Current ³	$T_C = 25\text{ °C}$	I_D	-33	A
	$T_C = 100\text{ °C}$		-22	
	$T_A = 25\text{ °C}$		-12	
	$T_A = 70\text{ °C}$		-9.6	
Pulsed Drain Current ¹		I_{DM}	-100	
Avalanche Current		I_{AS}	-34	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	57.8	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	16.7	W
	$T_C = 100\text{ °C}$		6.7	
	$T_A = 25\text{ °C}$		2	
	$T_A = 70\text{ °C}$		1.3	
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	$R_{\theta JA}$		60	°C / W
Junction-to-Case	$R_{\theta JC}$		7.5	

¹Pulse width limited by maximum junction temperature.

²The 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 $T_A = 25\text{ °C}$.

³Package limitation current is 22A

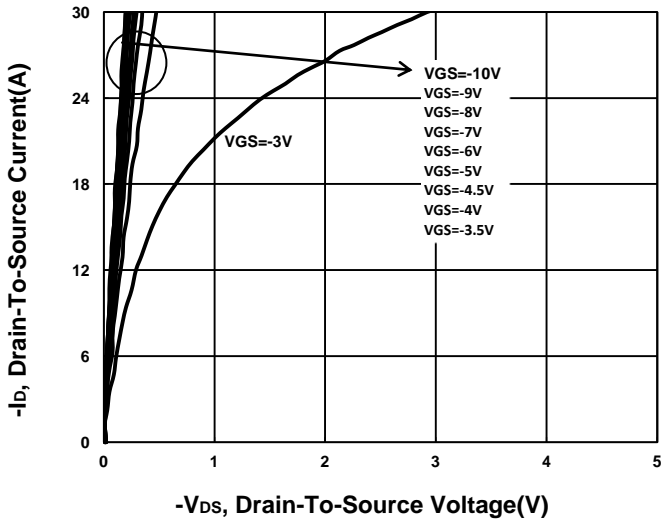
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

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			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±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 = 55 °C			-10			
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -10V, I _D = -12A		6.9	8.5	mΩ		
		V _{GS} = -4.5V, I _D = -12A		9.9	14			
Forward Transconductance ¹	g _{fs}	V _{DS} = -10V, I _D = -12A		35		S		
DYNAMIC								
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		2803		pF		
Output Capacitance	C _{oss}			371				
Reverse Transfer Capacitance	C _{rss}			286				
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 = -12A		56		nC		
	Q _{g(VGS=-4.5V)}			28				
Gate-Source Charge ²	Q _{gs}			8				
Gate-Drain Charge ²	Q _{gd}			12				
Turn-On Delay Time ²	t _{d(on)}		V _{DD} = -10V I _D ≅ -12A, V _{GS} = -10V, R _{GEN} = 6Ω		21			nS
Rise Time ²	t _r				25			
Turn-Off Delay Time ²	t _{d(off)}			100				
Fall Time ²	t _f			73				
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)								
Continuous Current	I _S				-12.8	A		
Forward Voltage ¹	V _{SD}	I _F = -12A, V _{GS} = 0V			-1.3	V		
Reverse Recovery Time	t _{rr}	I _F = -12A, di/dt = 100A/μs		26		nS		
Reverse Recovery Charge	Q _{rr}			14		nC		

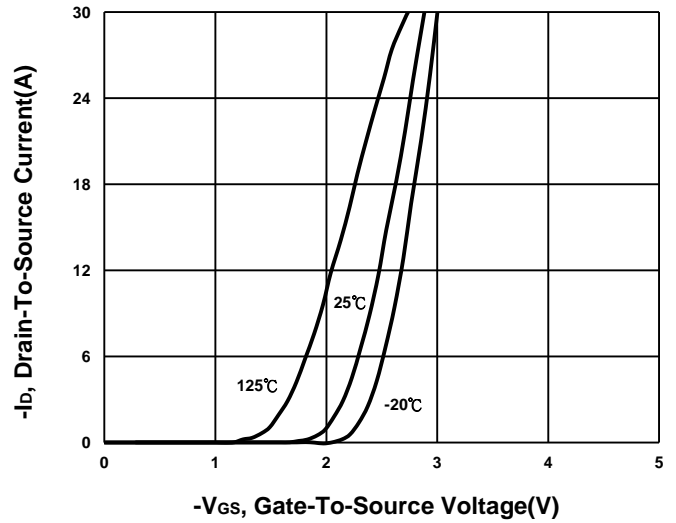
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

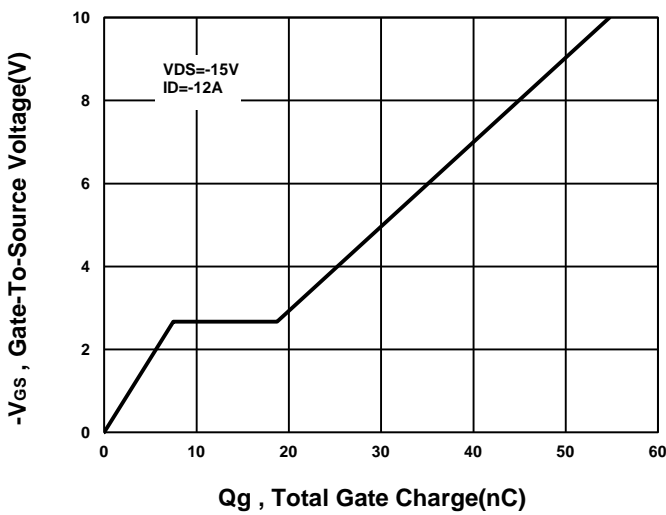
Output Characteristics



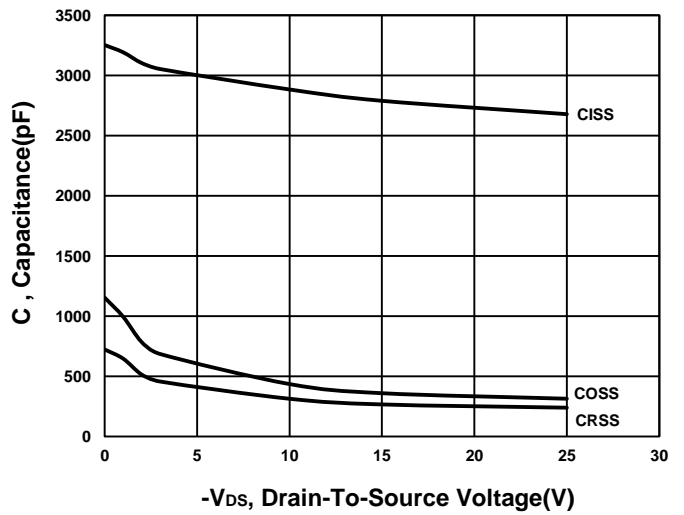
Transfer Characteristics



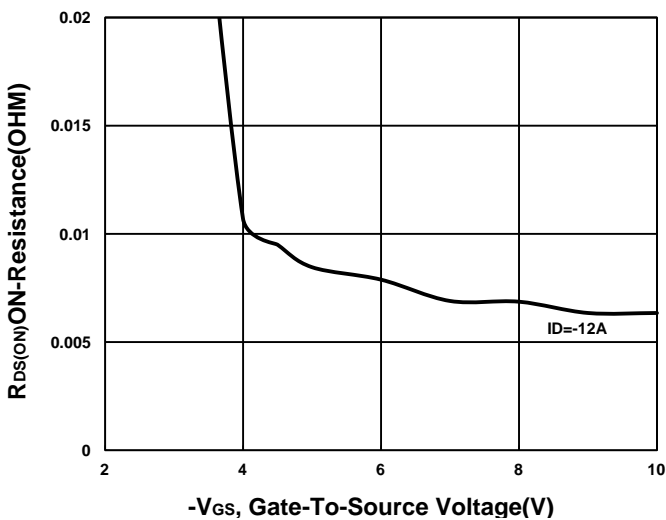
Gate charge Characteristics



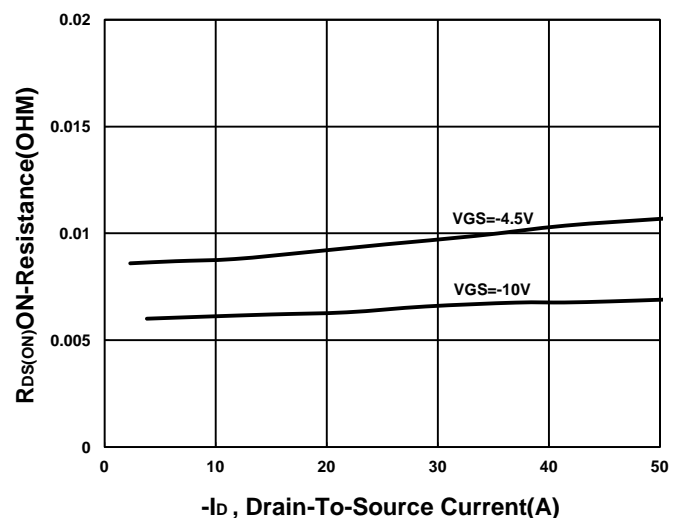
Capacitance Characteristic



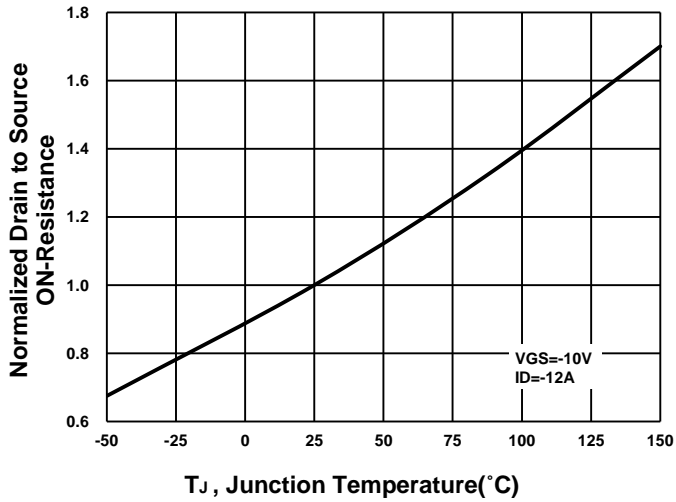
On-Resistance VS Gate-To-Source



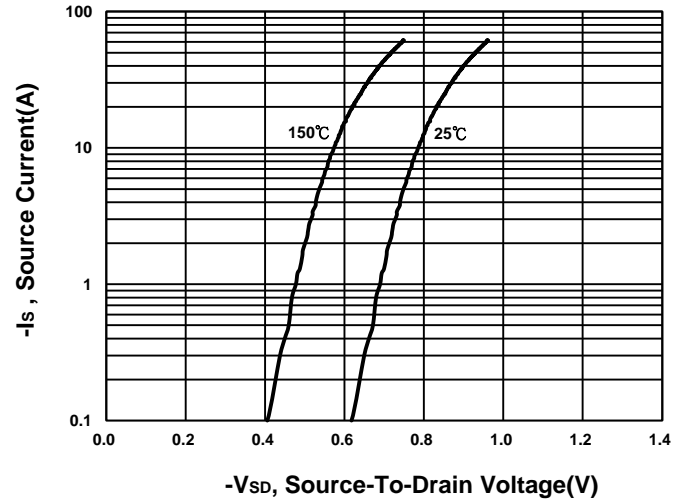
On-Resistance VS Drain Current



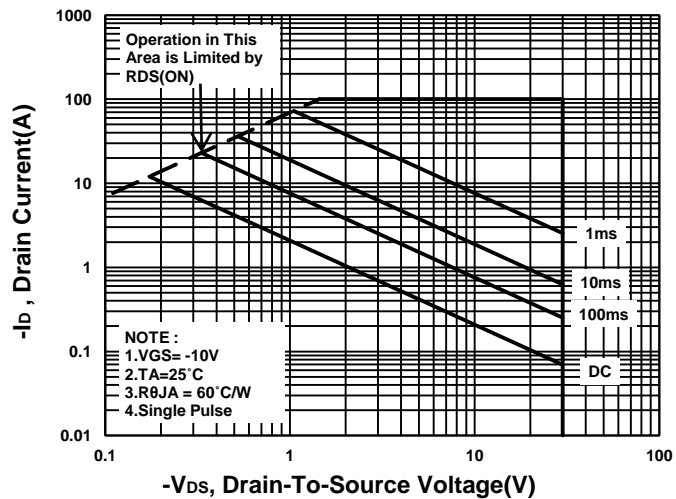
On-Resistance VS Temperature



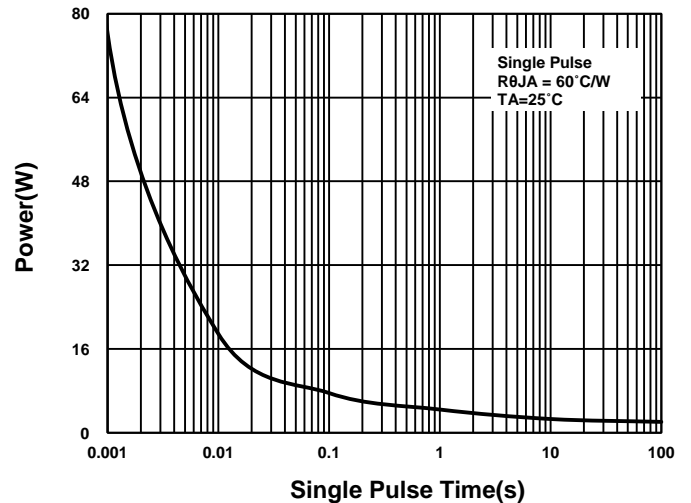
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

