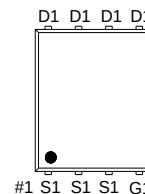
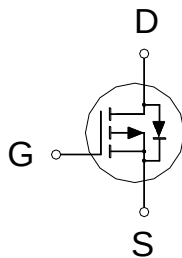


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	28m Ω	-19A



G : GATE
D : DRAIN
S : SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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	$T_C = 25^\circ\text{C}$	I_D	-19	A
	$T_C = 100^\circ\text{C}$		-12	
	$T_A = 25^\circ\text{C}$		-7.8	
	$T_A = 70^\circ\text{C}$		-6.2	
Pulsed Drain Current ¹		I_{DM}	-50	
Avalanche Current		I_{AS}	-19.3	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	18.6	mJ
Power Dissipation ³	$T_C = 25^\circ\text{C}$	P_D	19	W
	$T_C = 100^\circ\text{C}$		7.9	
	$T_A = 25^\circ\text{C}$		3.1	
	$T_A = 70^\circ\text{C}$		2	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$		40	$^\circ\text{C} / \text{W}$
	Steady-State	$R_{\theta JA}$		63	
Junction-to-Case	Steady-State	$R_{\theta JC}$		6.3	

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 $T_A = 25^\circ\text{C}$. The value in any given application depends on the user's specific board design.

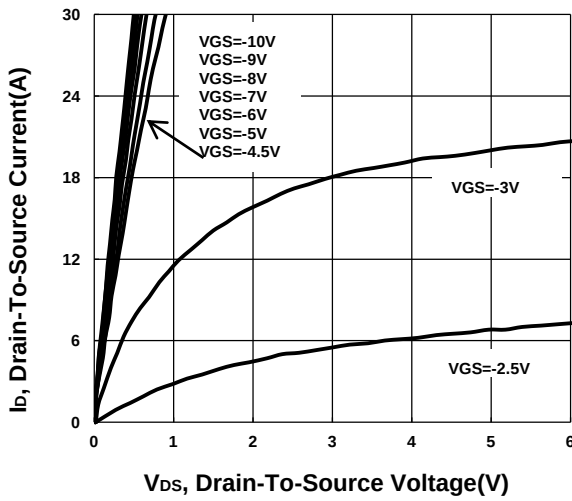
³The Power dissipation is based on $R_{\theta JA}$ $t \leq 10\text{s}$ value.

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

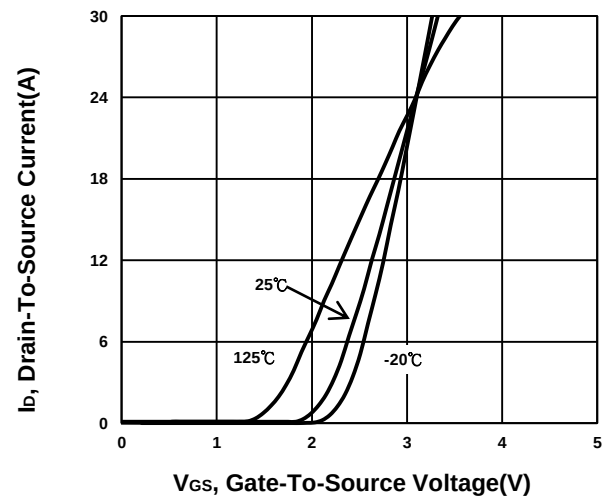
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.8	-1.5	-2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	μA
		V _{DS} = -20V, V _{GS} = 0V, T _J = 125 °C			-10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -6A		26	45	mΩ
		V _{GS} = -10V, I _D = -6A		16	28	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -6A		22		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz	770	963	1156	pF
Output Capacitance	C _{oss}		107	134	161	
Reverse Transfer Capacitance	C _{rss}		70	118	165	
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz	5	10	20	Ω
Total Gate Charge ²	Q _{g(VGS=-10V)}	V _{DS} =-15V, I _D = -6A	17	22	26.4	nC
	Q _{g(VGS=-4.5V)}		8.6	10.8	13	
Gate-Source Charge ²	Q _{gs}		1.9	2.4	3	
Gate-Drain Charge ²	Q _{gd}		3.2	5.4	7.6	
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -15V, I _D ≅ -6A, V _{GS} = -10V, R _{GS} = 6Ω		16		nS
Rise Time ²	t _r			18		
Turn-Off Delay Time ²	t _{d(off)}			40		
Fall Time ²	t _f			26		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				-20	A
Forward Voltage ¹	V _{SD}	I _F = -6A, V _{GS} = 0V			-1	V
Reverse Recovery Time	t _{rr}	I _F = -6A , dl _F /dt = 100 A / μS		11		nS
Reverse Recovery Charge	Q _{rr}			3.3		nC

¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.²Independent of operating temperature.

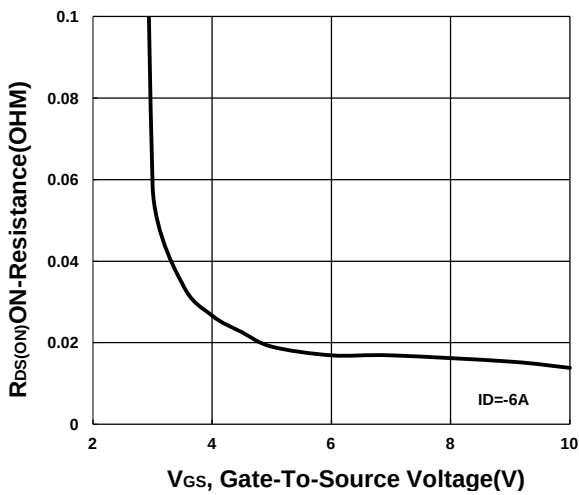
Output Characteristics



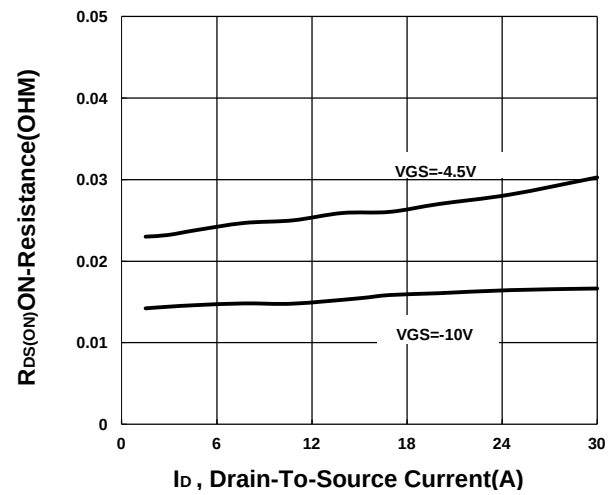
Transfer Characteristics



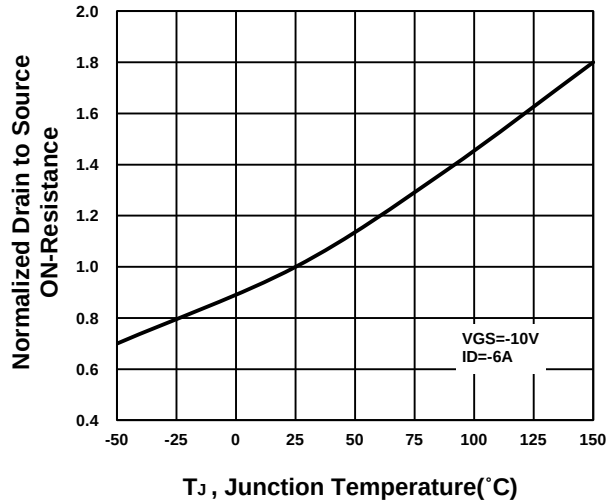
On-Resistance VS Gate-To-Source



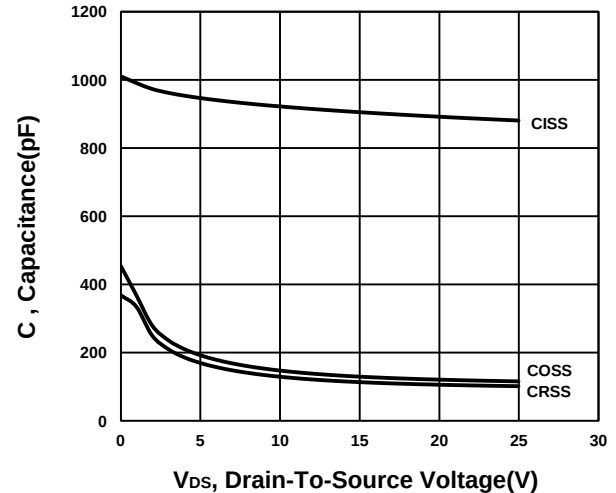
On-Resistance VS Drain Current



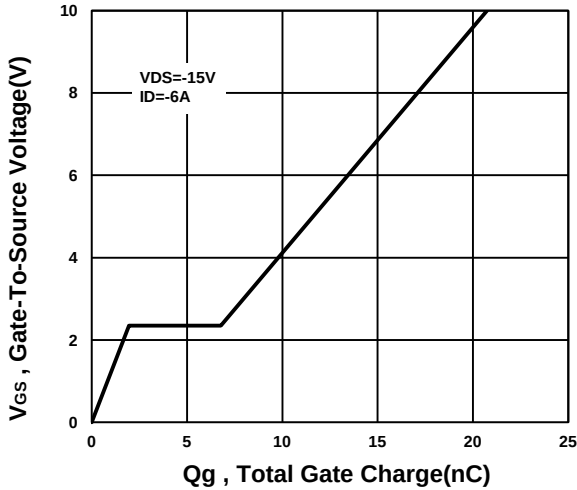
On-Resistance VS Temperature



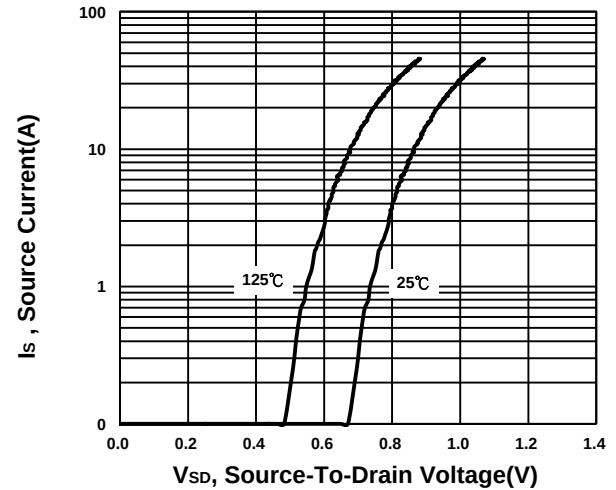
Capacitance Characteristic



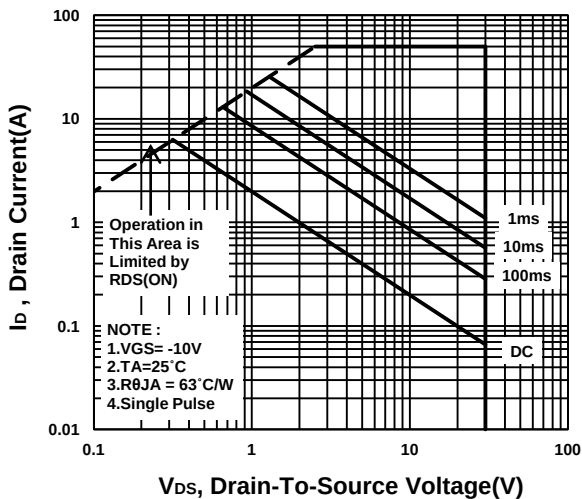
Gate charge Characteristics



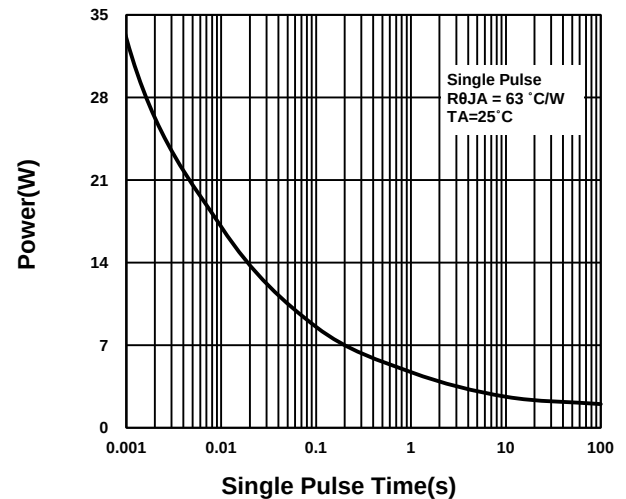
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

