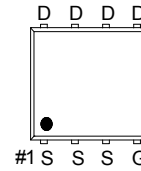
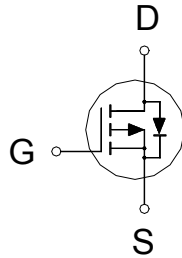


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-20V	20mΩ	-23A



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}	-20	V
Gate-Source Voltage		V_{GS}	±8	V
Continuous Drain Current ³	$T_C = 25\text{ °C}$	I_D	-23	A
	$T_C = 100\text{ °C}$		-18	
	$T_A = 25\text{ °C}$		-7	
	$T_A = 70\text{ °C}$		-6	
Pulsed Drain Current ¹		I_{DM}	-60	
Avalanche Current		I_{AS}	-20	
Avalanche Energy	L = 0.1mH	E_{AS}	20	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	17.8	W
	$T_C = 100\text{ °C}$		11.4	
	$T_A = 25\text{ °C}$		1.8	
	$T_A = 70\text{ °C}$		1.2	
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	$R_{\theta JA}$		68	°C / W
Junction-to-Case	$R_{\theta JC}$		7	

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

³Package limitation current is -11A.

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

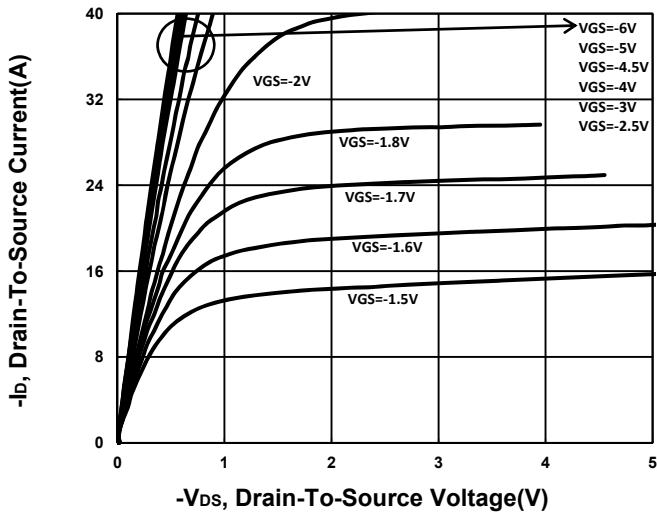
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT		
			MIN	TYP	MAX			
STATIC								
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V		
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.3	-0.6	-1			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16V, V _{GS} = 0V			-1	uA		
		V _{DS} = -10V, V _{GS} = 0V, T _J = 125 °C			-10			
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -2.5A		14	20	mΩ		
		V _{GS} = -2.5V, I _D = -2A		17	25			
		V _{GS} = -1.8V, I _D = -1A		22	35			
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -2.5A		21		S		
DYNAMIC								
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -10V, f = 1MHz		1801		pF		
Output Capacitance	C _{oss}			179				
Reverse Transfer Capacitance	C _{rss}			160				
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		10		Ω		
Total Gate Charge ²	Q _{g(VGS=-4.5V)}	V _{DS} = -10V, I _D = -2.5A		22.7		nC		
	Q _{g(VGS=-2.5V)}			13.3				
Gate-Source Charge ²	Q _{gs}			1.9				
Gate-Drain Charge ²	Q _{gd}			5.4				
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = -10V, I _D ≅ -2.5A, V _{GS} = -4.5V, R _{GS} = 6Ω		19			nS
Rise Time ²	t _r				34			
Turn-Off Delay Time ²	t _{d(off)}			216				
Fall Time ²	t _f			165				
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)								
Continuous Current ³	I _S				-16	A		
Forward Voltage ¹	V _{SD}	I _F = -2.5A, V _{GS} = 0V			-1.2	V		
Reverse Recovery Time	t _{rr}	I _F = -2.5A, di _F /dt = 100 A / μS		35		nS		
Reverse Recovery Charge	Q _{rr}			18		nC		

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

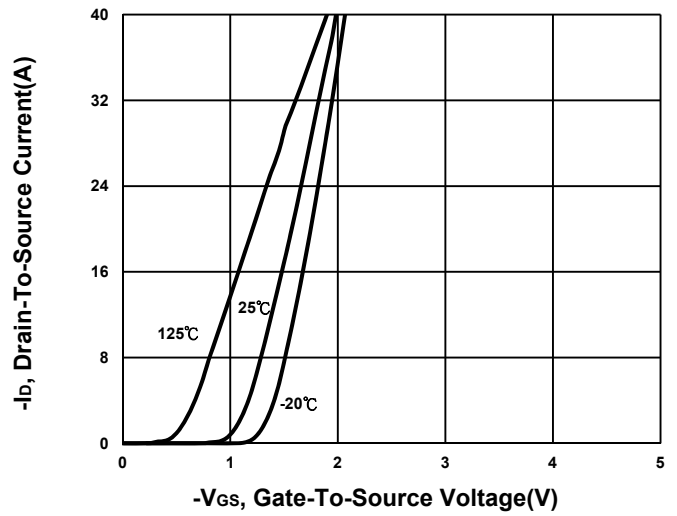
²Independent of operating temperature.

³Package limitation current is -11A.

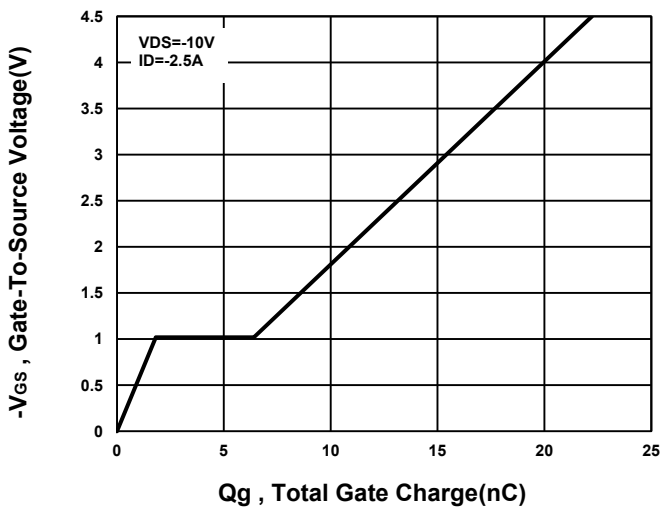
Output Characteristics



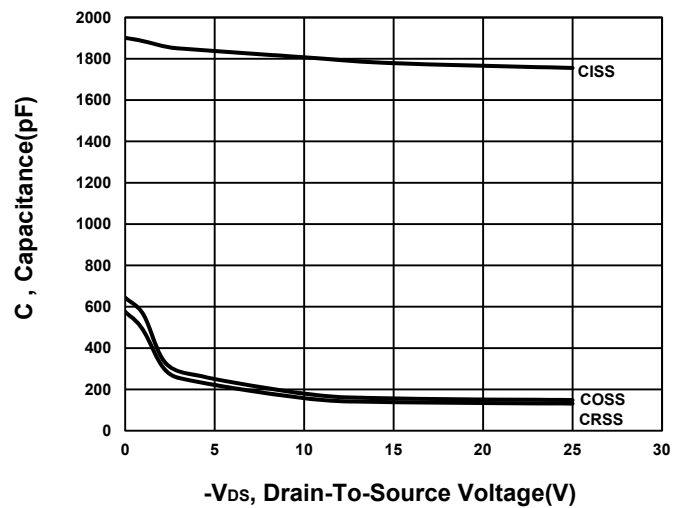
Transfer Characteristics



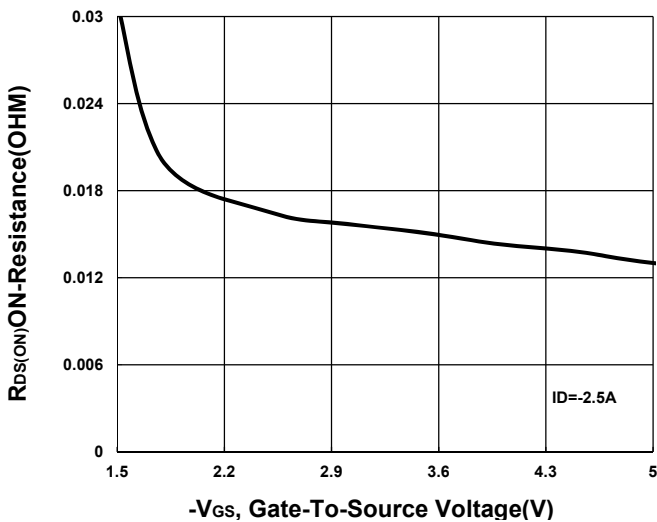
Gate charge Characteristics



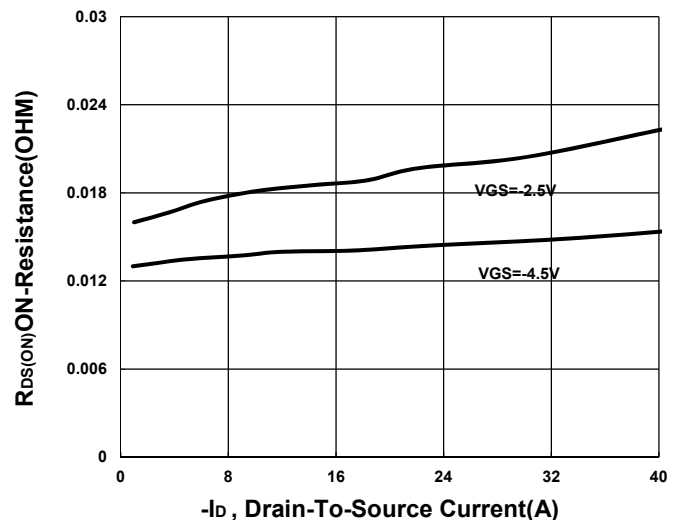
Capacitance Characteristic



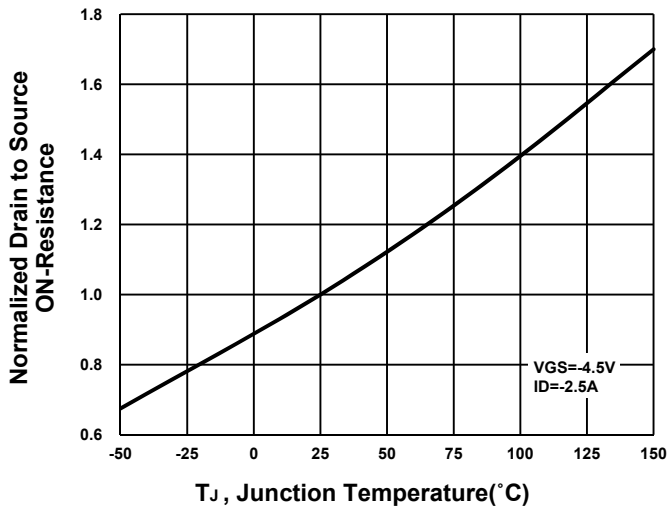
On-Resistance VS Gate-To-Source



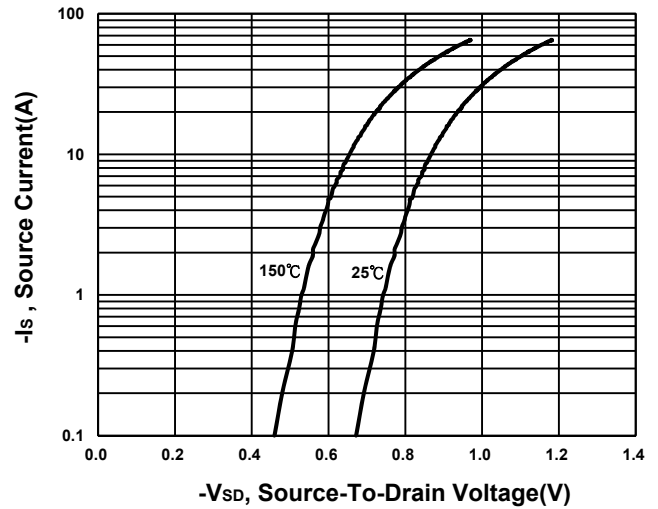
On-Resistance VS Drain Current



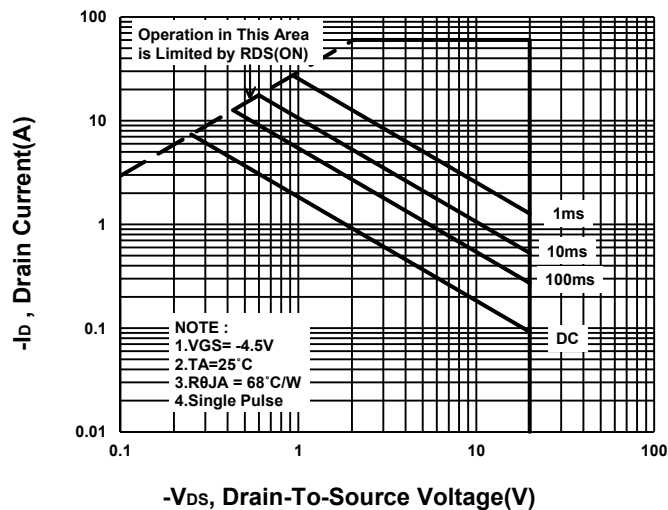
On-Resistance VS Temperature



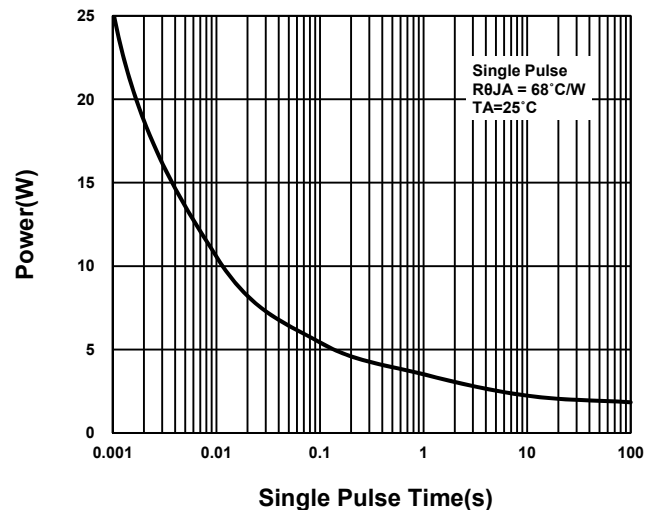
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

