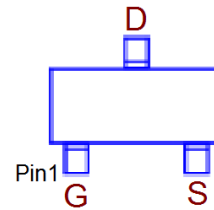
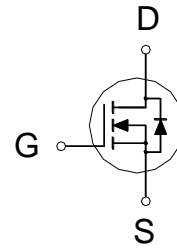




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	25m Ω	5.3A



G. GATE
D. DRAIN
S. SOURCE

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.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	5.3	A
	$T_A = 70\text{ }^\circ\text{C}$		4.3	
Pulsed Drain Current ¹		I_{DM}	18	
Power Dissipation ³	$T_A = 25\text{ }^\circ\text{C}$	P_D	1.25	W
	$T_A = 70\text{ }^\circ\text{C}$		0.8	
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	$t \leq 10\text{s}$	$R_{\theta JA}$		100	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		128	

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 $T_A = 25^\circ\text{C}$.

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

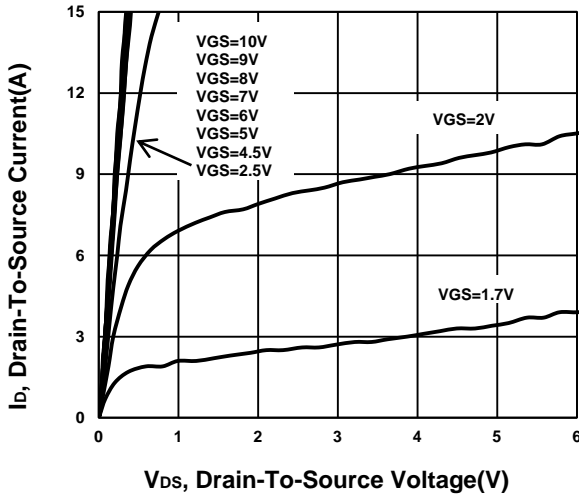
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

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	0.45	1	1.2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±12V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0V			1	μA
		V _{DS} = 10V, V _{GS} = 0V, T _J = 55 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 2.5V, I _D = 4A		35	50	mΩ
		V _{GS} = 4.5V, I _D = 5A		23	32	
		V _{GS} = 10V, I _D = 5A		20	25	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 5A		22.5		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz		389		pF
Output Capacitance	C _{oss}			79		
Reverse Transfer Capacitance	C _{rss}			66		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1.7		Ω
Total Gate Charge ²	Q _{g(VGS=10V)}	V _{DS} = 10V, I _D = 5A		10		nC
	Q _{g(VGS=4.5V)}			5.3		
Gate-Source Charge ²	Q _{gs}			0.5		
Gate-Drain Charge ²	Q _{gd}			2.2		
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = 10V I _D ≅ 5A, V _{GS} = 10V, R _{GS} = 6Ω		7.3	
Rise Time ²	t _r			40		
Turn-Off Delay Time ²	t _{d(off)}			23		
Fall Time ²	t _f			4.7		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				0.8	A
Forward Voltage ¹	V _{SD}	I _F = 5A, V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = 5A, dI/dt = 100 A/μs		7.6		nS
Reverse Recovery Charge	Q _{rr}				2.3	

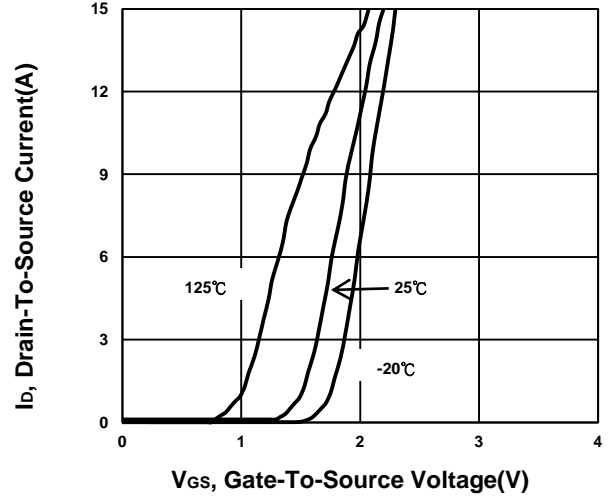
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

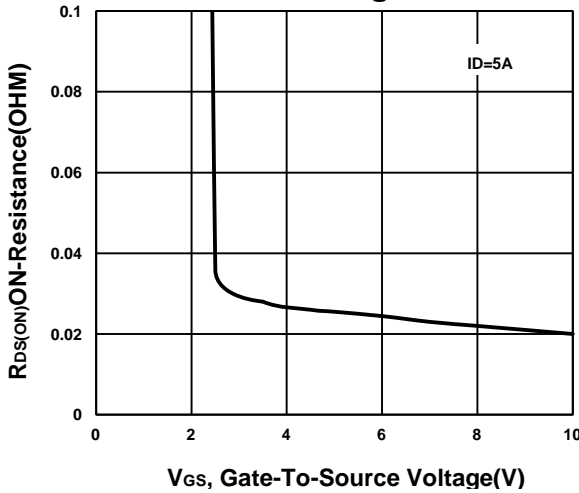
Output Characteristics



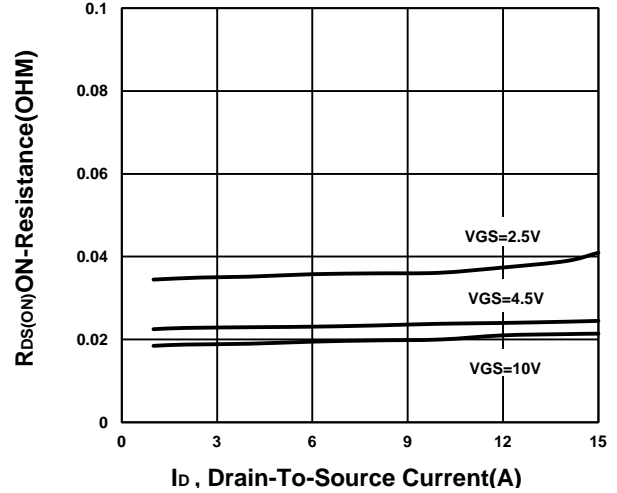
Transfer Characteristics



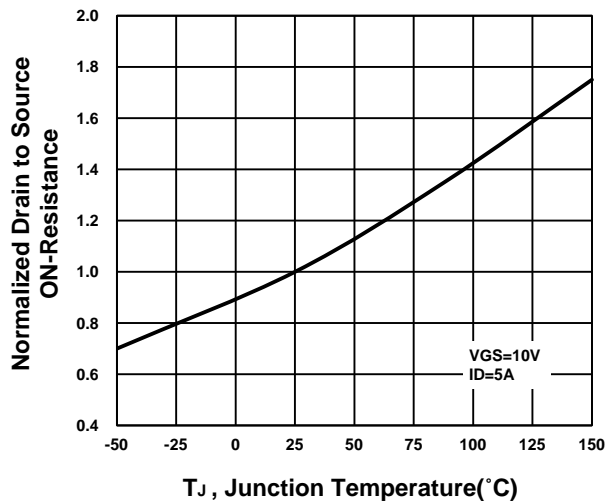
On-Resistance VS Gate-To-Source Voltage



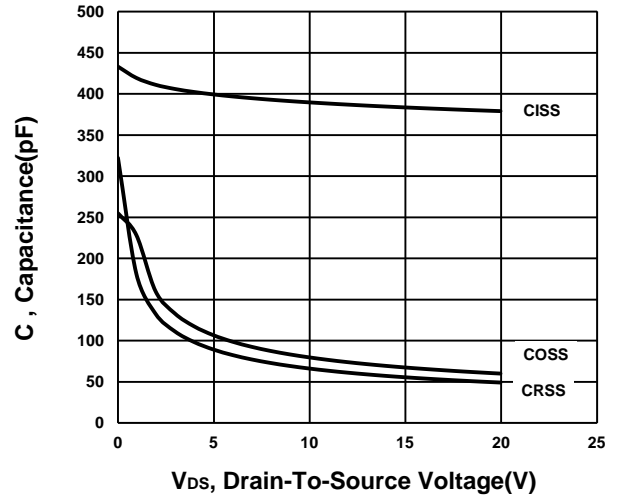
On-Resistance VS Drain Current



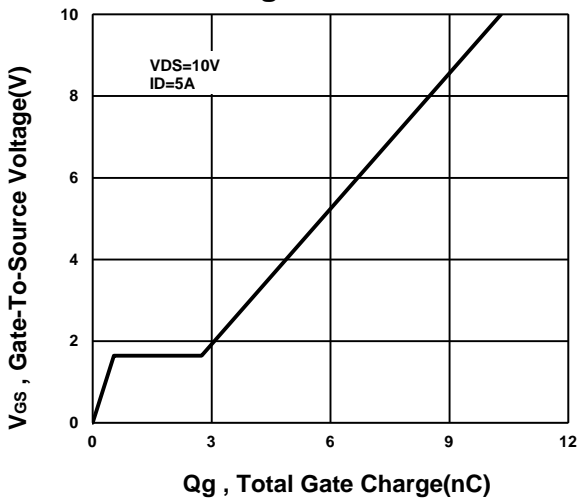
On-Resistance VS Temperature



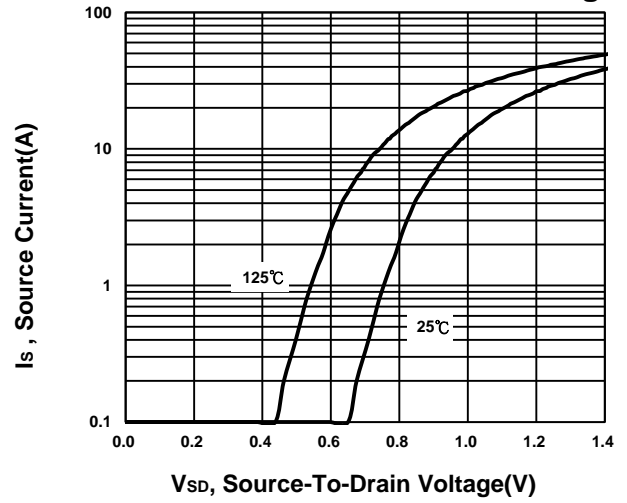
Capacitance Characteristic



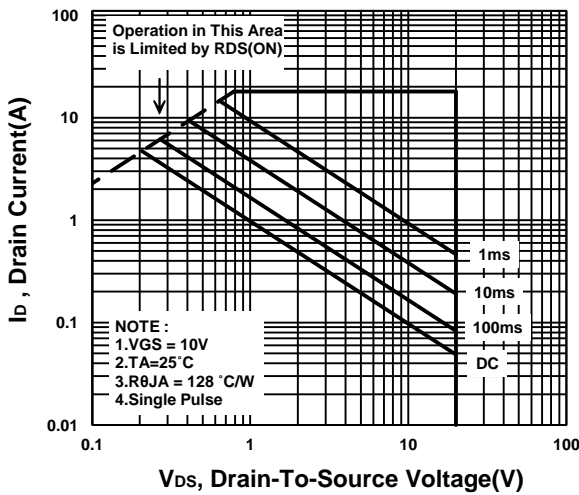
Gate charge Characteristics



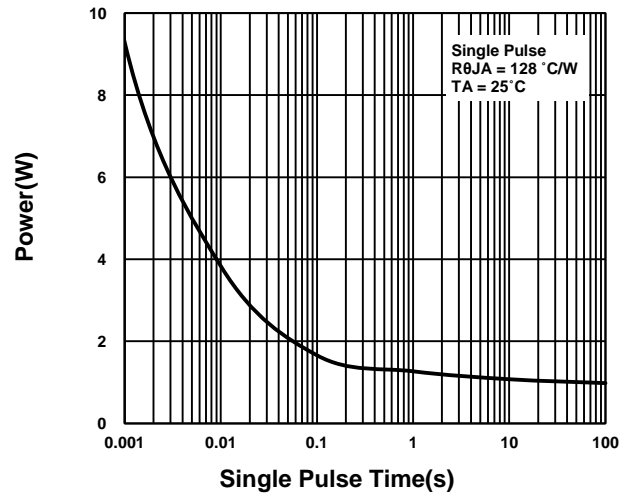
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

