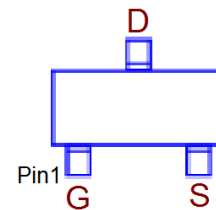
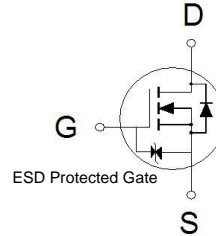




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	45mΩ	3.8A



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.
- Products Integrated ESD diode with ESD Protected.

Applications

- Protection Circuits Applications.
- Logic/Load Switch Circuits Applications.

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current ⁴	$T_A = 25\text{ °C}$	I_D	3.8	A
	$T_A = 70\text{ °C}$		3	
Pulsed Drain Current ¹		I_{DM}	15	
Power Dissipation ³	$T_A = 25\text{ °C}$	P_D	1.25	W
	$T_A = 70\text{ °C}$		0.8	
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	$t \leq 10s$	$R_{\theta JA}$		100	°C / W
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		140	

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 $T_A = 25\text{ °C}$.

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

⁴Package limitation current is 5.5A.

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

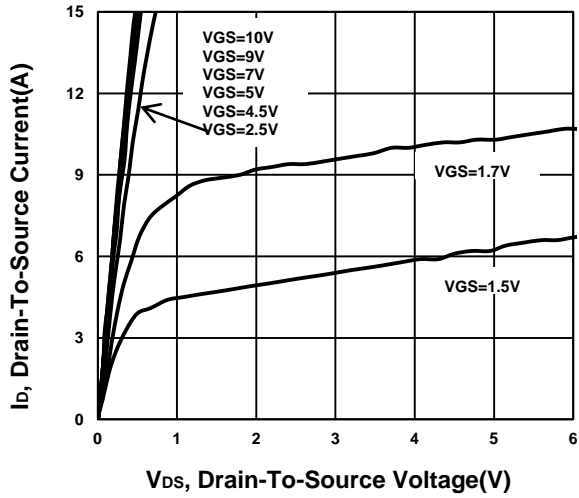
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	0.7	1.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±10V			±10	μA
Zero 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} = 2.5V, I _D = 1A		35	70	mΩ
		V _{GS} = 4.5V, I _D = 1A		29	55	
		V _{GS} = 10V, I _D = 1A		25	45	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 1A		10		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		345		pF
Output Capacitance	C _{oss}			46		
Reverse Transfer Capacitance	C _{rss}			35		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		2.5		Ω
Total Gate Charge ²	Q _{g(VGS=10V)}	V _{DS} = 10V, I _D = 1A		9.2		nC
	Q _{g(VGS=4.5V)}			4.7		
Gate-Source Charge ²	Q _{gs}			0.4		
Gate-Drain Charge ²	Q _{gd}			1.5		
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = 10V I _D ≅ 1A, V _{GS} = 10V, R _{GS} = 6Ω		5.5	
Rise Time ²	t _r			10		
Turn-Off Delay Time ²	t _{d(off)}			24		
Fall Time ²	t _f			2.9		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I _S				1	A
Forward Voltage ¹	V _{SD}	I _F = 1A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 1A, di/dt = 100 A/μs		8.2		nS
Reverse Recovery Charge	Q _{rr}				3.6	

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

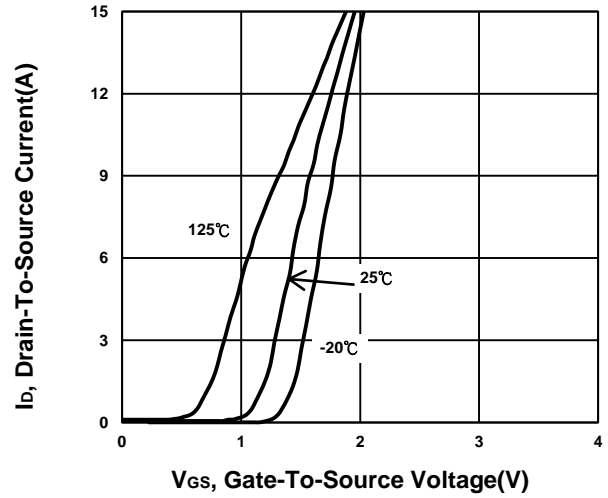
²Independent of operating temperature.

³Package limitation current is 5.5A.

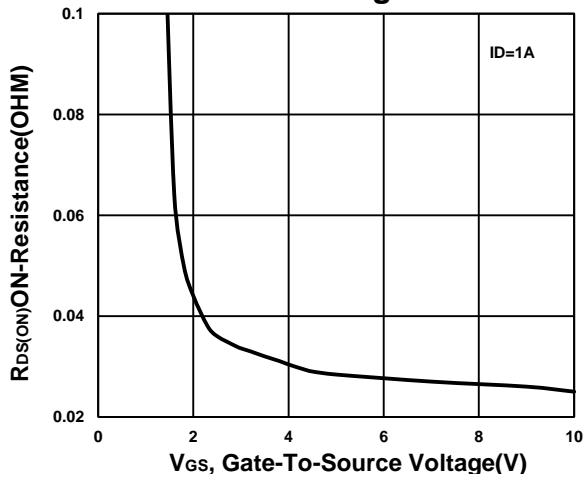
Output Characteristics



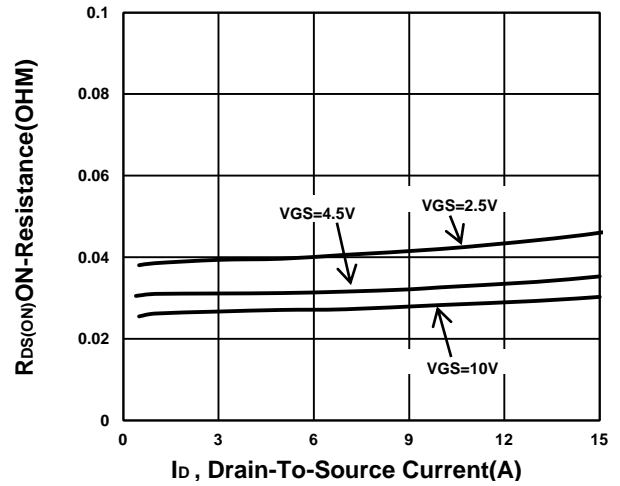
Transfer Characteristics



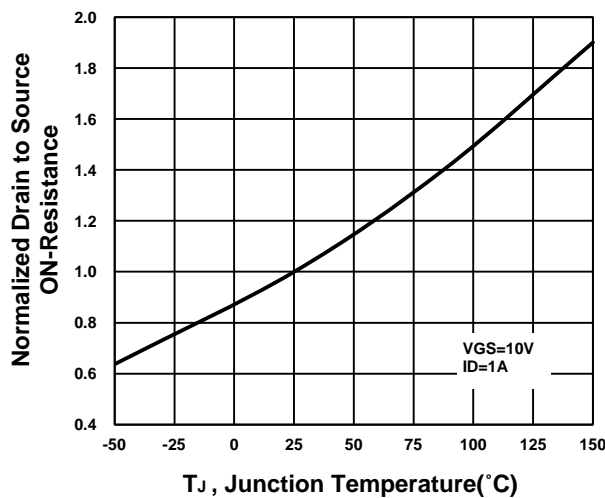
On-Resistance VS Gate-To-Source Voltage



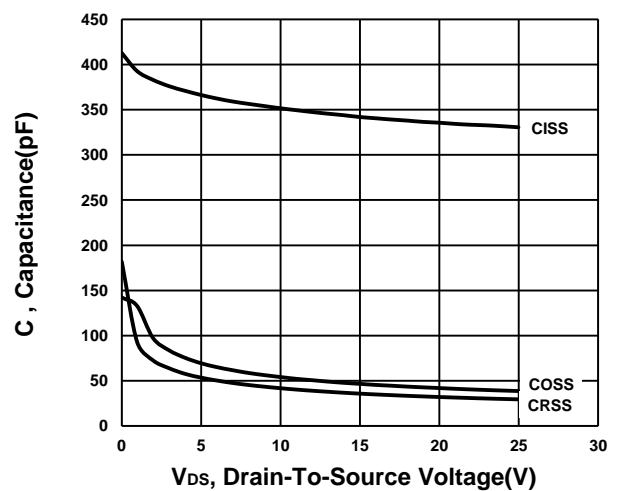
On-Resistance VS Drain Current



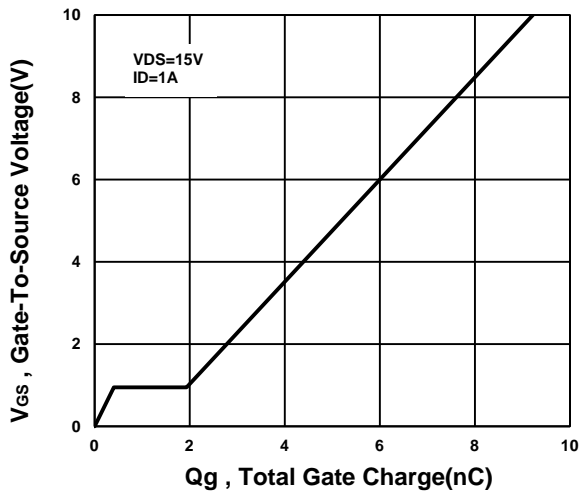
On-Resistance VS Temperature



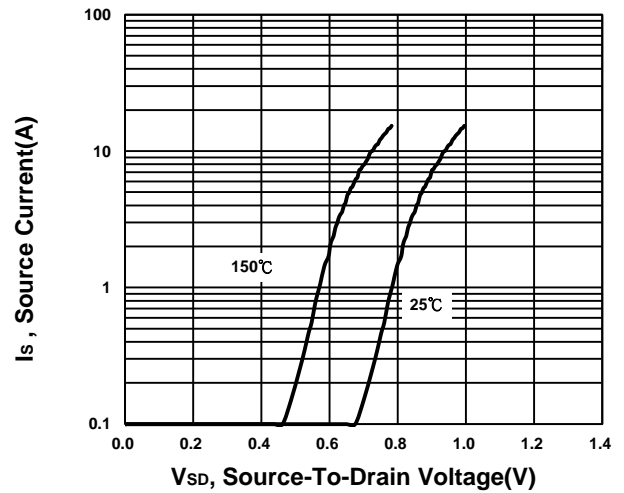
Capacitance Characteristic



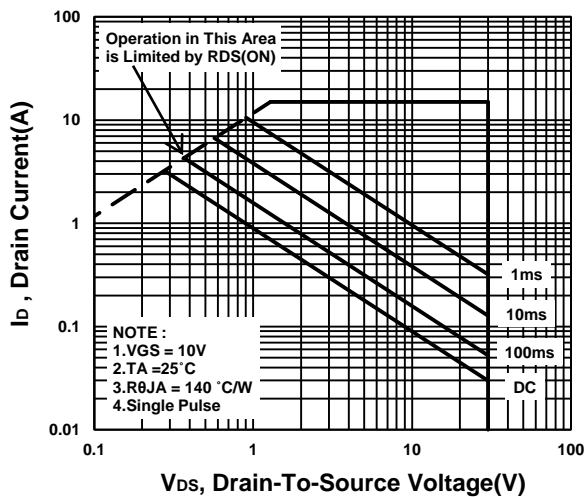
Gate charge Characteristics



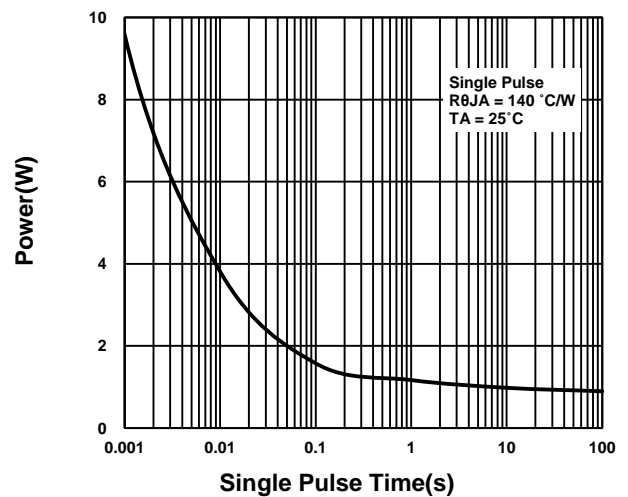
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

