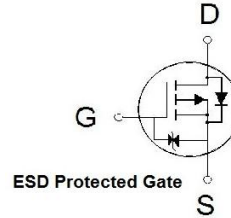




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-20V	520mΩ	-0.68A

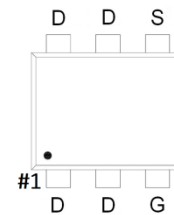


Features

- 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.
- ESD Protection – HBM Class : 1C.

Applications

- Protection Circuits Applications.
- Logic/Load Switch Circuits Applications.
- Space Limit & Smart Devices Applications.



G: GATE
D: DRAIN
S: SOURCE

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	$T_A = 25\text{ °C}$	I_D	-0.68	A
	$T_A = 70\text{ °C}$		-0.54	
Pulsed Drain Current ¹		I_{DM}	-2.1	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	0.41	W
	$T_A = 70\text{ °C}$		0.26	
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	Steady-State	$R_{\theta JA}$		300	°C/W

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.

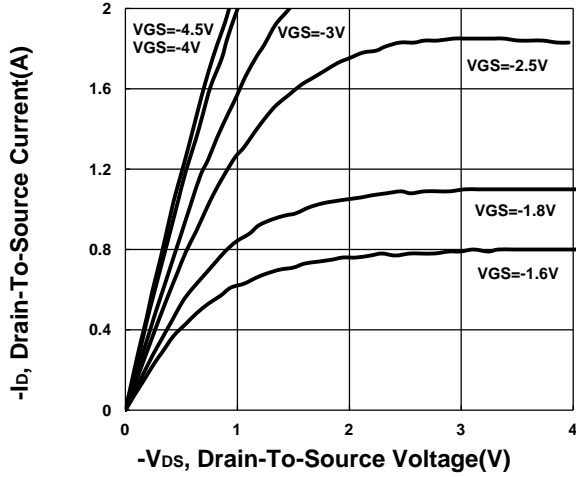
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

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	-0.4	-0.65	-1.2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±10V			±30	μA
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} = -4.5V, I _D = -0.45A		442	520	mΩ
		V _{GS} = -2.5V, I _D = -0.1A		618	800	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -0.45A		1		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -10V, f = 1MHz		46		pF
Output Capacitance	C _{oss}			18		
Reverse Transfer Capacitance	C _{rss}			9.6		
Total Gate Charge ²	Q _g	V _{DS} = -20V, V _{GS} = -4.5V, I _D = -1A		1.1		nC
Gate-Source Charge ²	Q _{gs}			0.2		
Gate-Drain Charge ²	Q _{gd}			0.3		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = -10V, V _{GS} = -4.5V I _D ≅ -0.45A, R _G = 5.1Ω		17		nS
Rise Time ²	t _r			30		
Turn-Off Delay Time ²	t _{d(off)}			76		
Fall Time ²	t _f			46		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				-0.34	A
Forward Voltage ¹	V _{SD}	I _F = -0.45A, V _{GS} = 0V			-1.2	V
Reverse Recovery Time	t _{rr}	I _F = -1A, dI _F /dt = 100A / μS		46		nS
Reverse Recovery Charge	Q _{rr}				28	

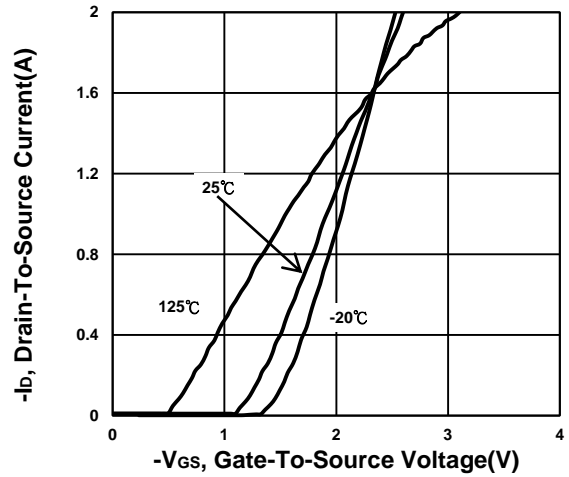
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

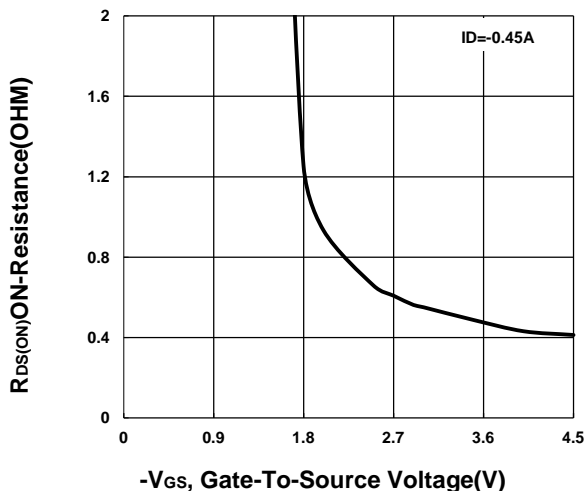
Output Characteristics



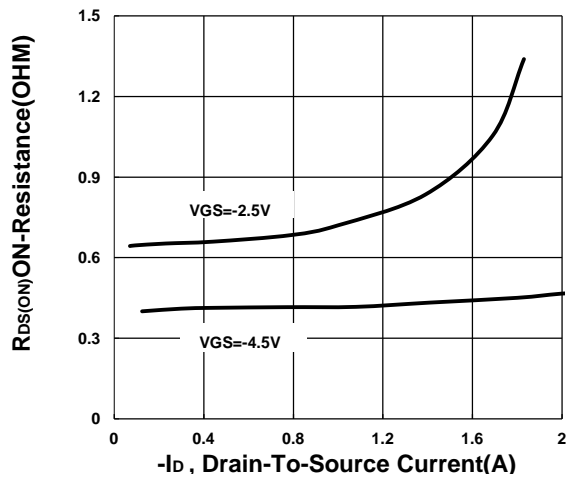
Transfer Characteristics



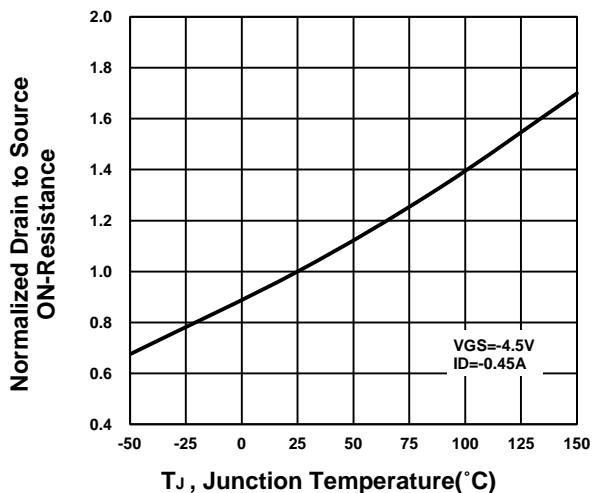
On-Resistance VS Gate-To-Source



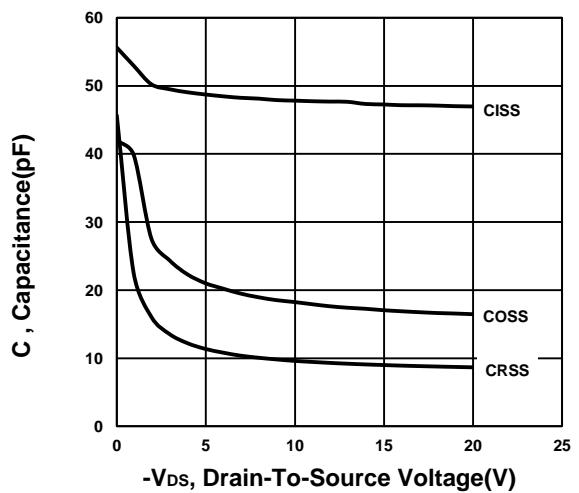
On-Resistance VS Drain Current



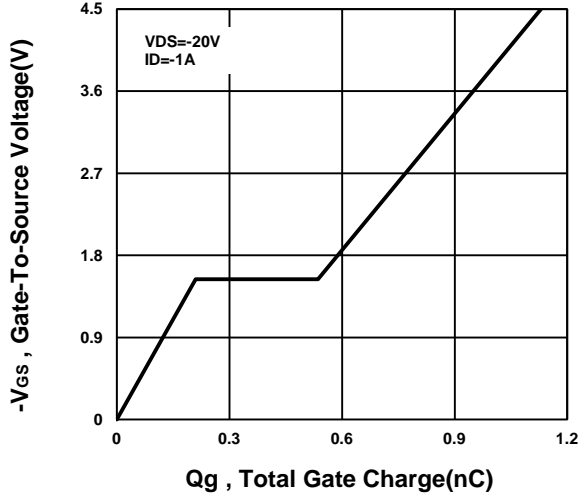
On-Resistance VS Temperature



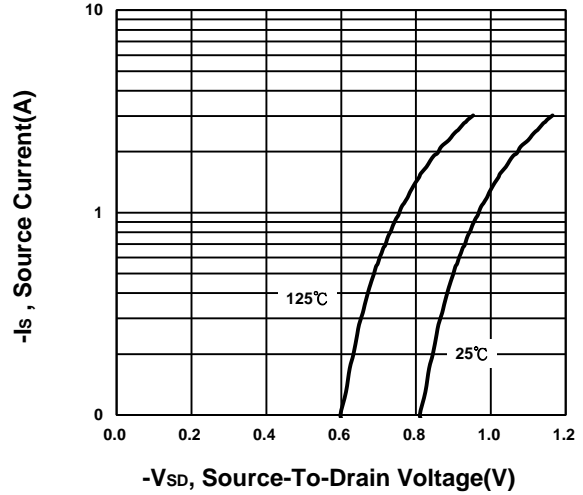
Capacitance Characteristic



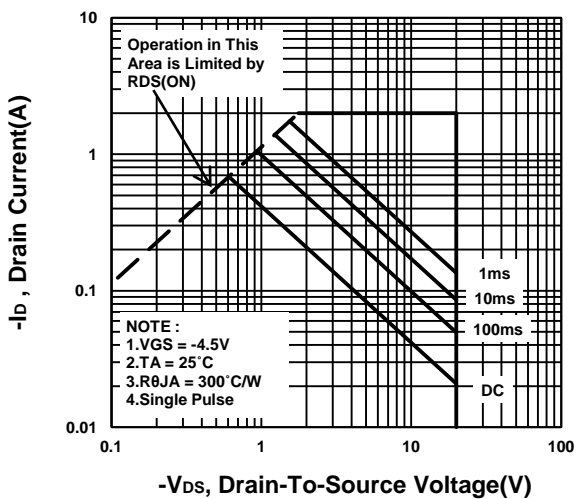
Gate charge Characteristics



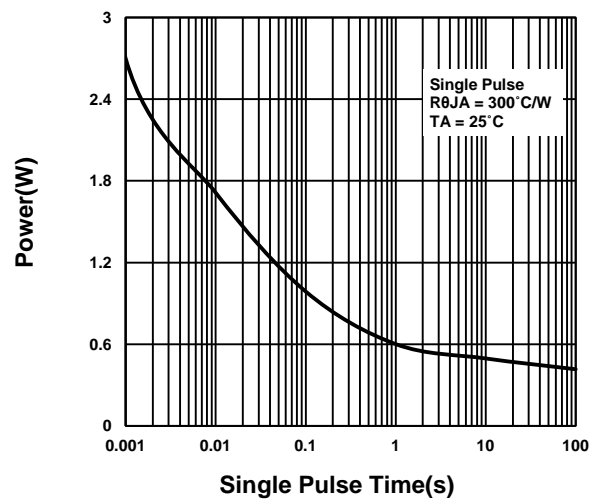
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

