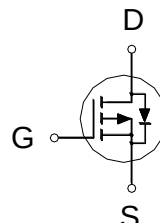



PRODUCT SUMMARY

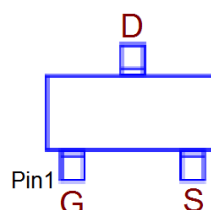
$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	70m Ω	-2.5A


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.



G: GATE
D: DRAIN
S: SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	-2.5	A
	$T_A = 70\text{ }^{\circ}\text{C}$		-2	
Pulsed Drain Current ¹		I_{DM}	-8	
Power Dissipation ³	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	0.7	W
	$T_A = 70\text{ }^{\circ}\text{C}$		0.4	
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	$R_{\theta JA}$		173	$^{\circ}\text{C/W}$
Junction-to-Case	$R_{\theta JC}$		65	

¹Pulse width limited by maximum junction temperature.

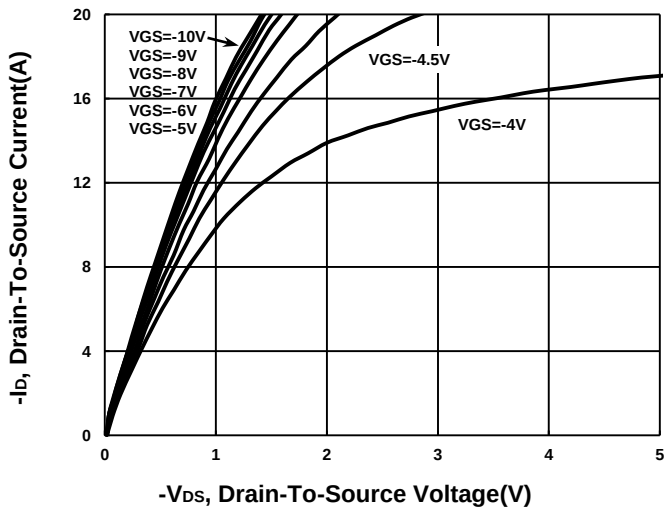
²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper.

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

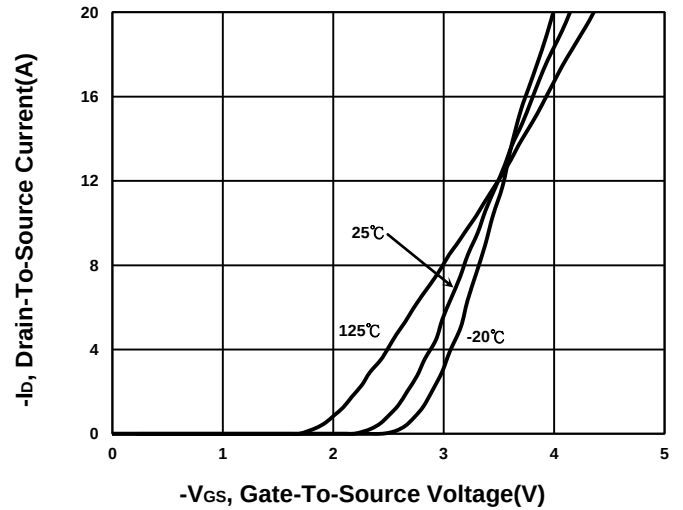
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.3	-1.95	-2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -32V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$			-10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -2.5A$		75	105	$m\Omega$
		$V_{GS} = -10V, I_D = -2.5A$		56	70	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -5V, I_D = -2.5A$		10		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -20V, f = 1MHz$		613		pF
Output Capacitance	C_{oss}			69		
Reverse Transfer Capacitance	C_{rss}			53		
Total Gate Charge ²	$Q_{g(VGS=-10V)}$	$V_{DS} = -20V, V_{GS} = -10V, I_D = -2.5A$		12.4		nC
	$Q_{g(VGS=-4.5V)}$			6.7		
Gate-Source Charge ²	Q_{gs}			1.7		
Gate-Drain Charge ²	Q_{gd}			3.1		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = -20V, V_{GS} = -10V, I_D \cong -2.5A, R_G = 6\Omega$		13		nS
Rise Time ²	t_r			21		
Turn-Off Delay Time ²	$t_{d(off)}$			70		
Fall Time ²	t_f			40		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				-0.7	A
Forward Voltage ¹	V _{SD}	I _F = -2.5A, V _{GS} = 0V			-1	V
Reverse Recovery Time	t _{rr}	I _F = -2.5A, dI _F /dt = 100A / μS		13		nS
Reverse Recovery Charge	Q _{rr}			7		nC

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

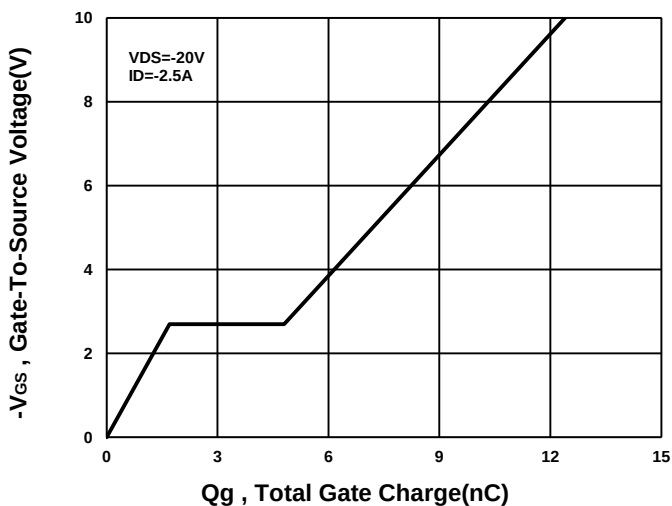
Output Characteristics



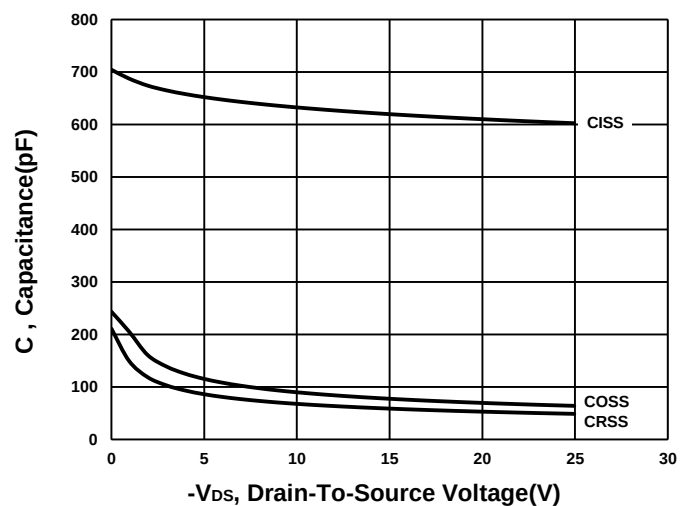
Transfer Characteristics



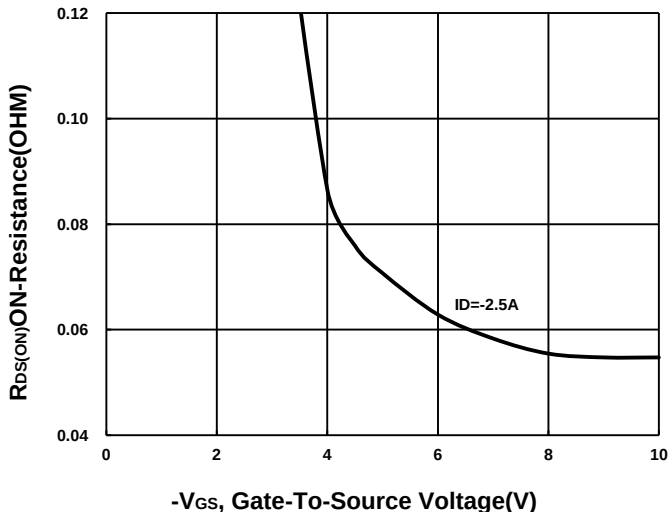
Gate charge Characteristics



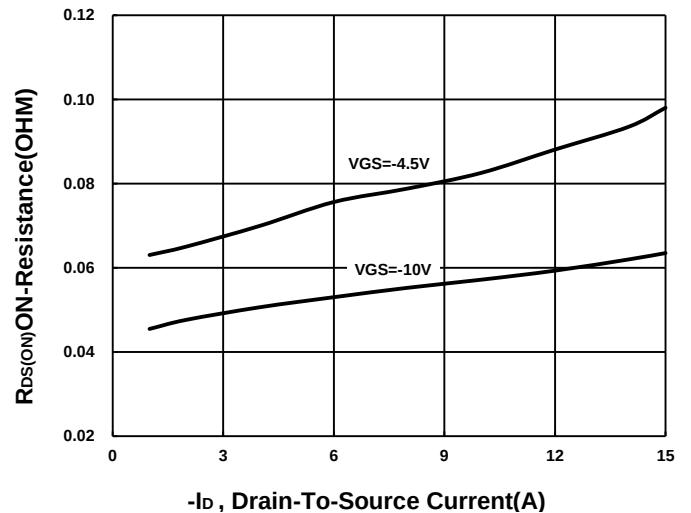
Capacitance Characteristic



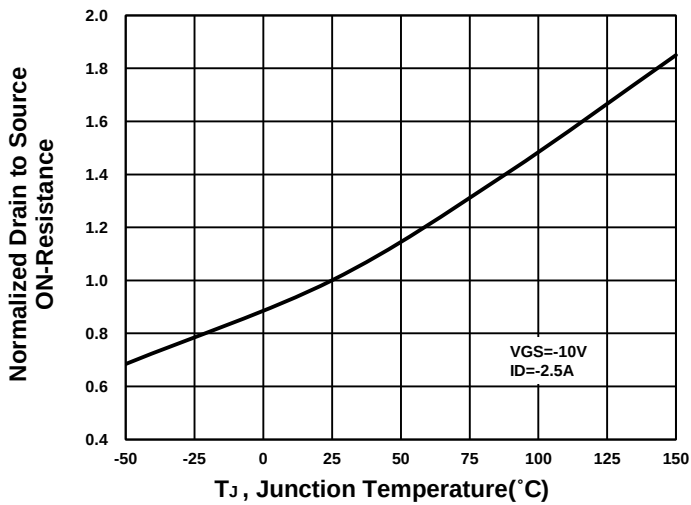
On-Resistance VS Gate-To-Source



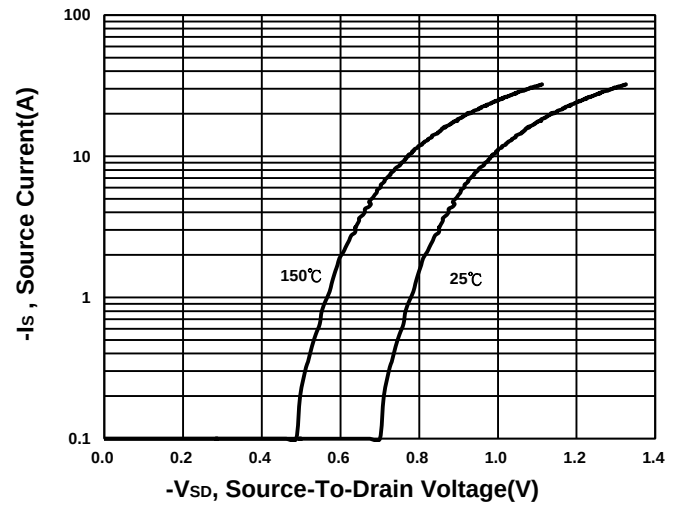
On-Resistance VS Drain Current



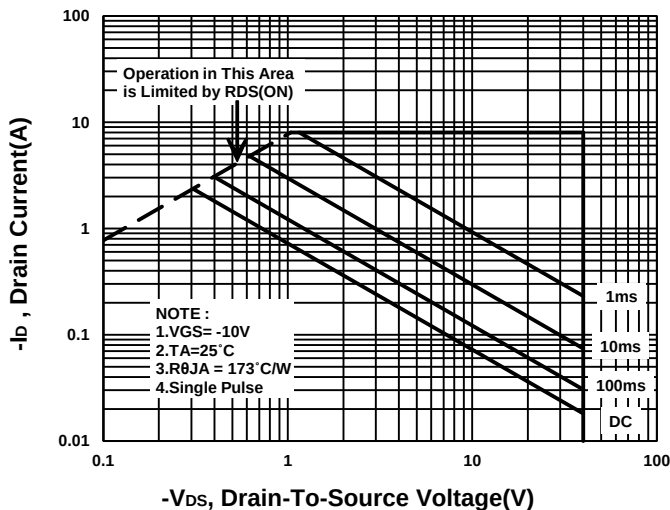
On-Resistance VS Temperature



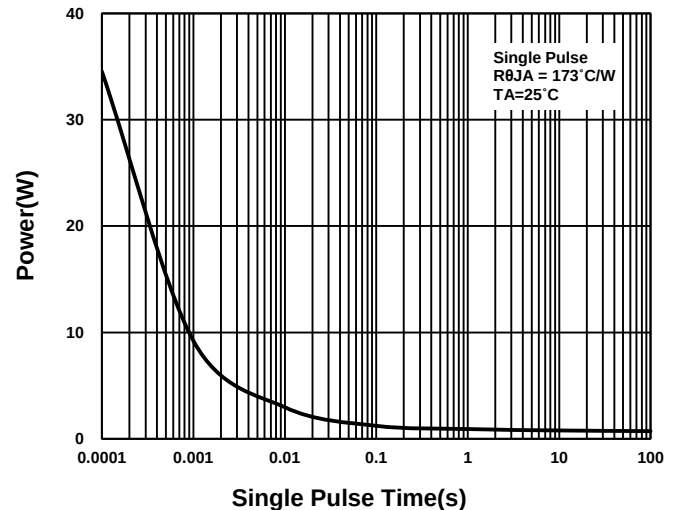
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

