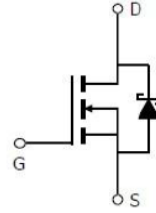


PRODUCT SUMMARY

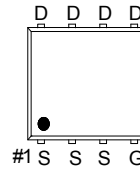
$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	3m Ω	62A


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 Schottky Diode.

Applications

- Protection Circuits Applications.
- Computer for DC to DC Converters 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
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ³	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	62	A
	$T_C = 100\text{ }^{\circ}\text{C}$		39	
	$T_A = 25\text{ }^{\circ}\text{C}$		24	
	$T_A = 70\text{ }^{\circ}\text{C}$		19	
Pulsed Drain Current ¹		I_{DM}	100	
Avalanche Current		I_{AS}	34	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	57.8	mJ
Power Dissipation ⁴	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	20	W
	$T_C = 100\text{ }^{\circ}\text{C}$		8	
	$T_A = 25\text{ }^{\circ}\text{C}$		3	
	$T_A = 70\text{ }^{\circ}\text{C}$		2	
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	$t \leq 10s$	$R_{\theta JA}$		40	°C / W
	Steady-State	$R_{\theta JA}$		60	
Junction-to-Case	Steady-State	$R_{\theta JC}$		6	

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

³Package limitation current is 21A

⁴The Power dissipation is based on $R_{\theta JA}$ $t \leq 10s$ value.

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

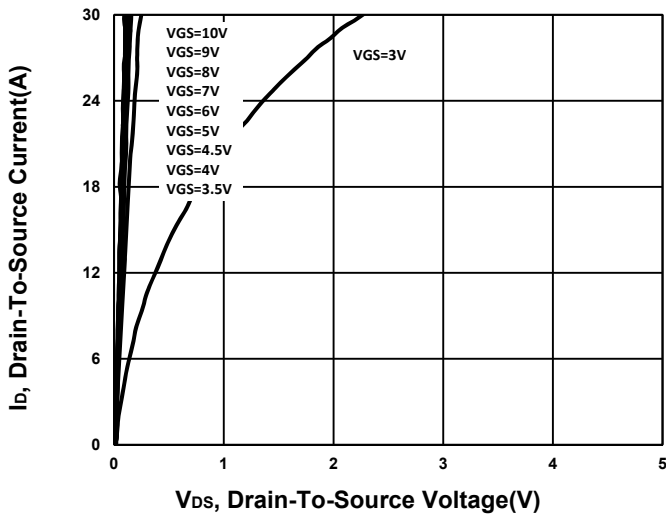
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 1mA$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.6	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			0.5	mA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^\circ C$			5	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 16A$		3.1	4	mΩ
		$V_{GS} = 10V, I_D = 20A$		2.4	3	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$		60		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		2100		pF
Output Capacitance	C_{oss}			407		
Reverse Transfer Capacitance	C_{rss}			250		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.4		Ω
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 15V, I_D = 20A$		41		nC
	$Q_{g(VGS=4.5V)}$			22		
Gate-Source Charge ²	Q_{gs}			5.3		
Gate-Drain Charge ²	Q_{gd}			14		

Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 15V I _D ≅ 20A, V _{GEN} = 10V, R _G =6Ω		30		nS
Rise Time ²	t _r			22		
Turn-Off Delay Time ²	t _{d(off)}			53		
Fall Time ²	t _f			21		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				20	A
Forward Voltage ¹	V _{SD}	I _F = 20A, V _{GS} = 0V			1	V
Reverse Recovery Time	t _{rr}	I _F = 20A , dI _F /dt = 100A / μS		16		nS
Reverse Recovery Charge	Q _{rr}			5		nC

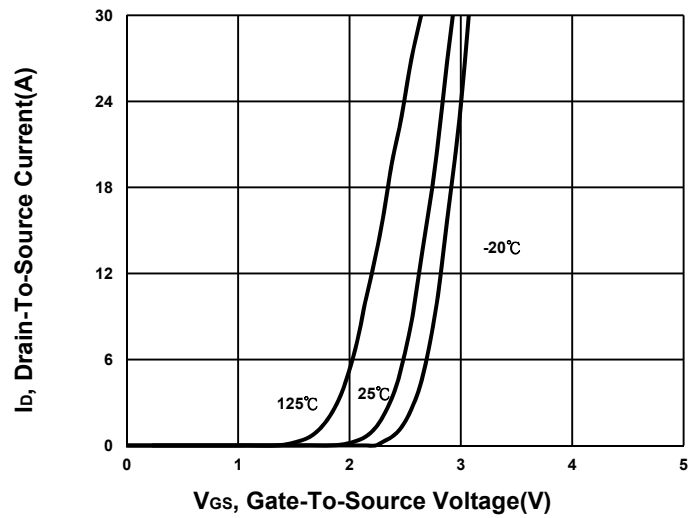
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

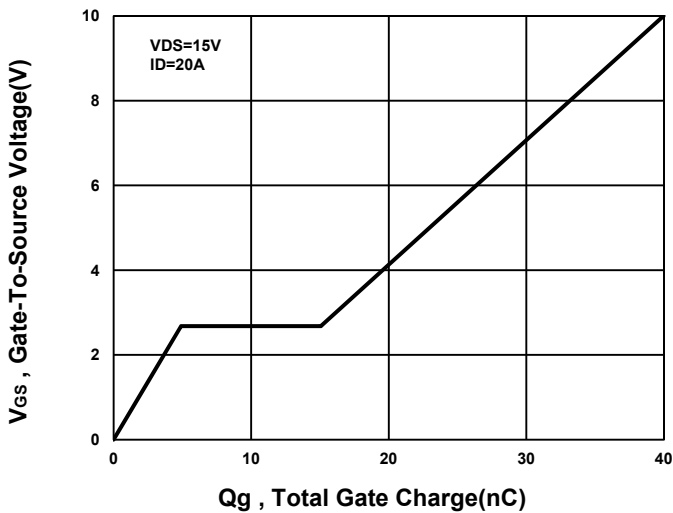
Output Characteristics



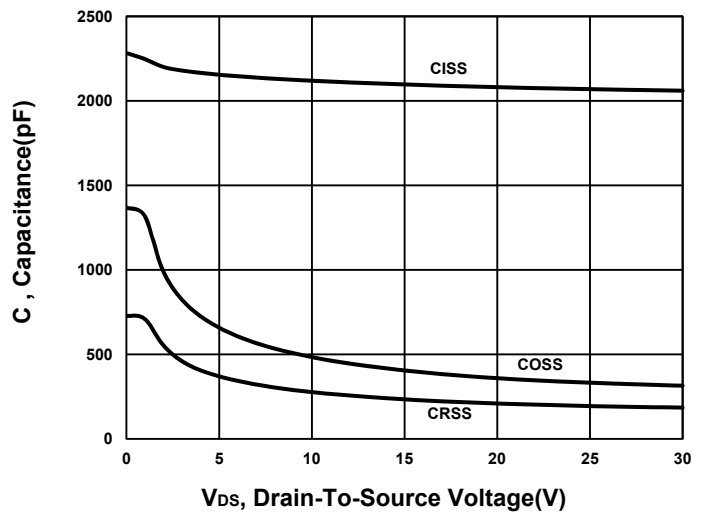
Transfer Characteristics



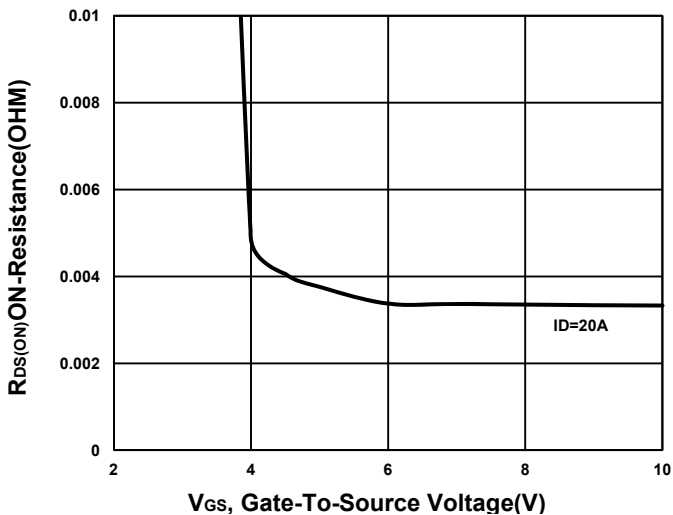
Gate charge Characteristics



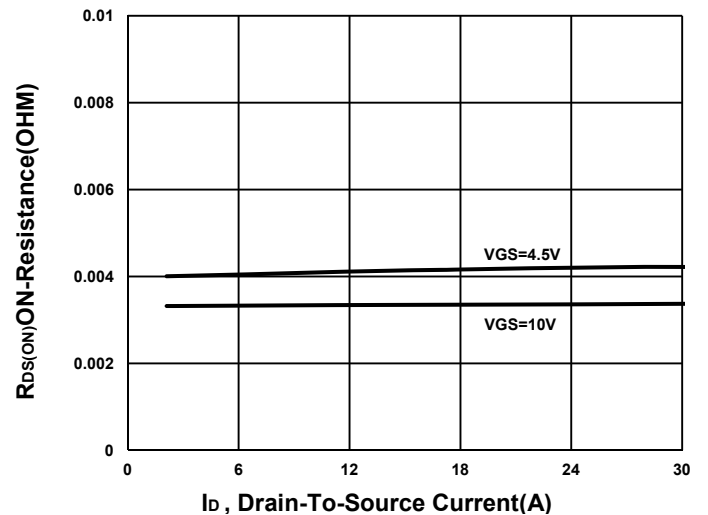
Capacitance Characteristic



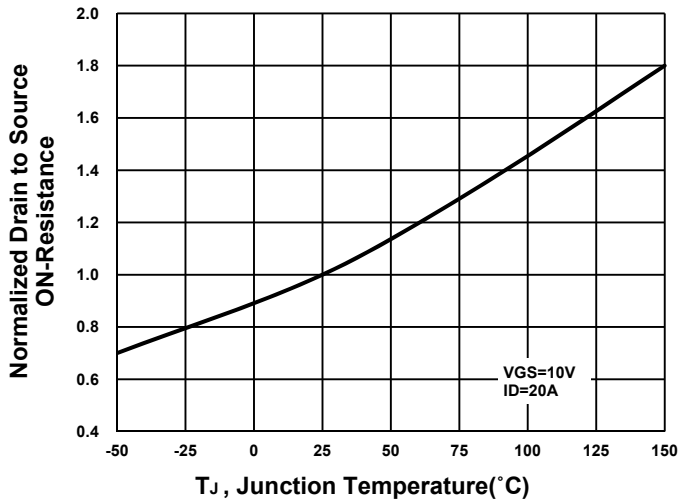
On-Resistance VS Gate-To-Source



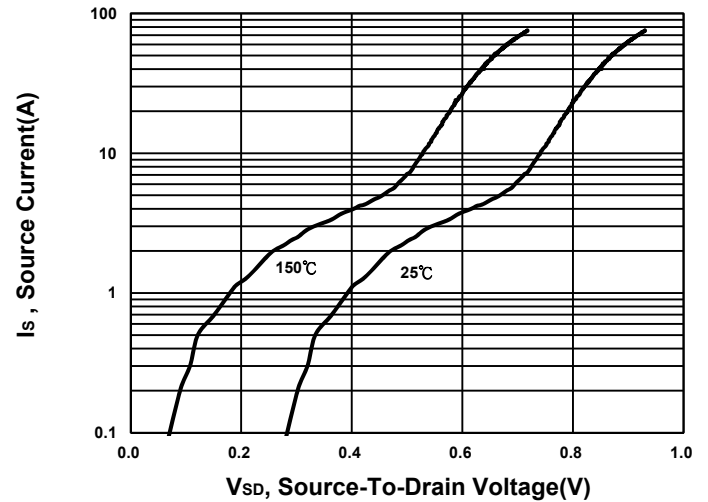
On-Resistance VS Drain Current



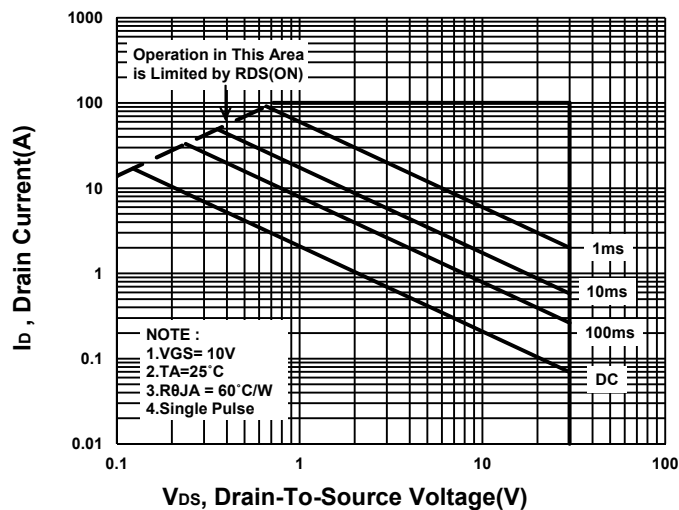
On-Resistance VS Temperature



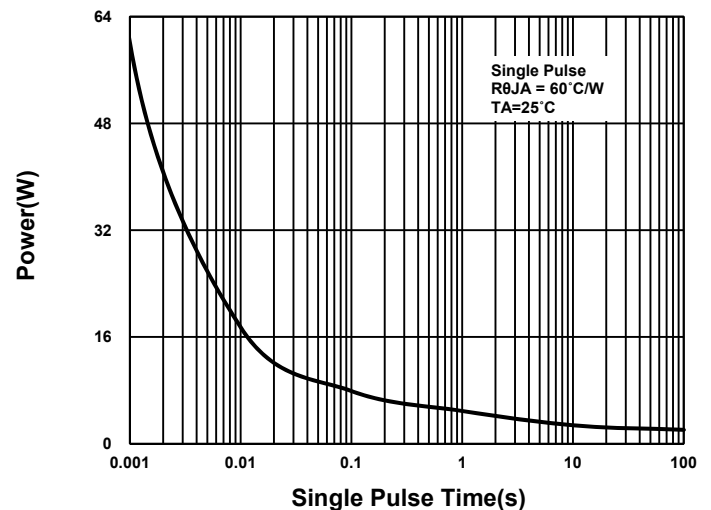
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

