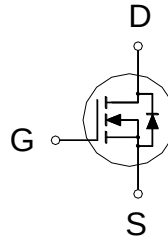
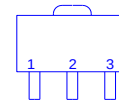




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	60m Ω	5.5A



1. GATE
2. DRAIN
3. 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 ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	5.5	A
	$T_A = 70^\circ\text{C}$		4.4	
Pulsed Drain Current ¹		I_{DM}	20	
Avalanche Current		I_{AS}	12.4	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	7.7	mJ
Power Dissipation ³	$T_A = 25^\circ\text{C}$	P_D	3	W
	$T_A = 70^\circ\text{C}$		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	$t \leq 10\text{s}$	$R_{\theta JA}$		40	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		64	
Junction-to-Case		$R_{\theta JC}$		14	

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

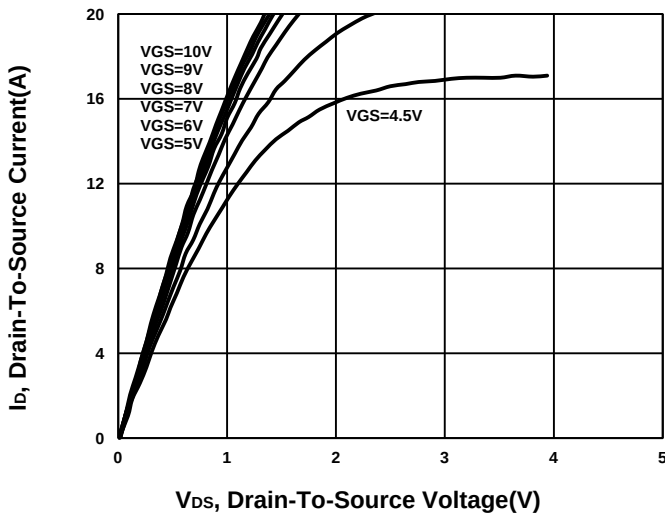
³The Power dissipation is based on $R_{\theta JA} t \leq 10\text{s}$ value.

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

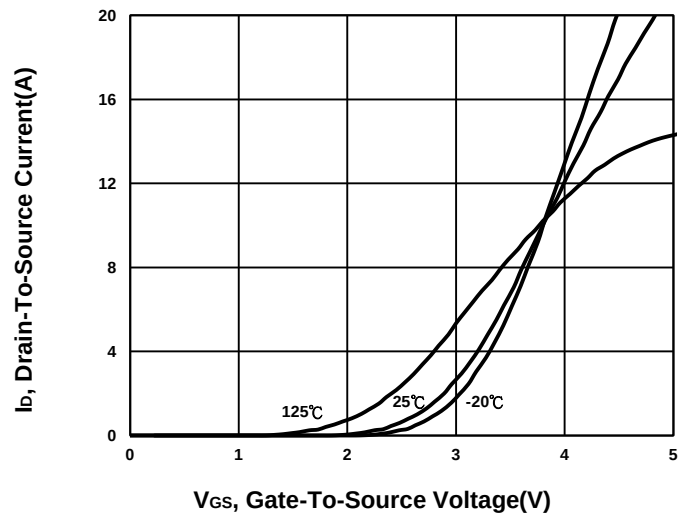
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.8	1.6	2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 24V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 1.5A$		61	100	m Ω
		$V_{GS} = 10V, I_D = 3A$		42	60	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 3A$		6		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		243		pF
Output Capacitance	C_{oss}			46		
Reverse Transfer Capacitance	C_{rss}			30		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		2		Ω
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 15V, I_D = 3A$		5.4		nC
	$Q_{g(VGS=4.5V)}$			3.1		
Gate-Source Charge ²	Q_{gs}			0.8		
Gate-Drain Charge ²	Q_{gd}			1.6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V$ $I_D \cong 3A, V_{GS} = 10V, R_{GS} = 6\Omega$		9		nS
Rise Time ²	t_r			21		
Turn-Off Delay Time ²	$t_{d(off)}$			18		
Fall Time ²	t_f			3		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Continuous Current	I_S				2	A
Forward Voltage ¹	V_{SD}	$I_F = 3A, V_{GS} = 0V$			1.5	V
Reverse Recovery Time	t_{rr}	$I_F = 3A, dI/dt = 100\text{ A}/\mu s$		11		nS
Reverse Recovery Charge	Q_{rr}			3		nC

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

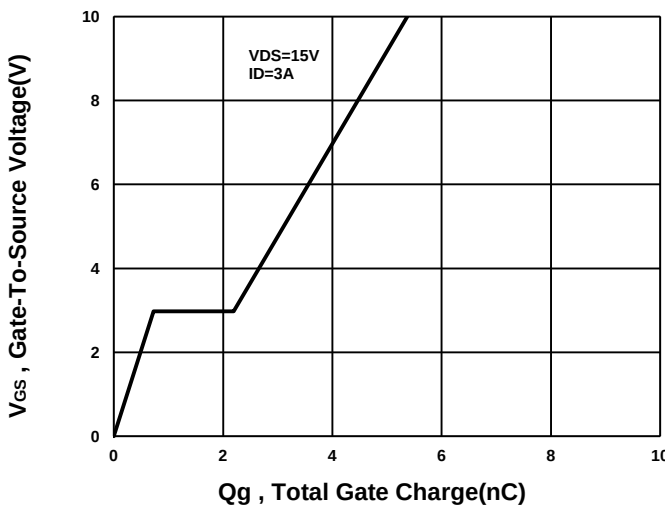
Output Characteristics



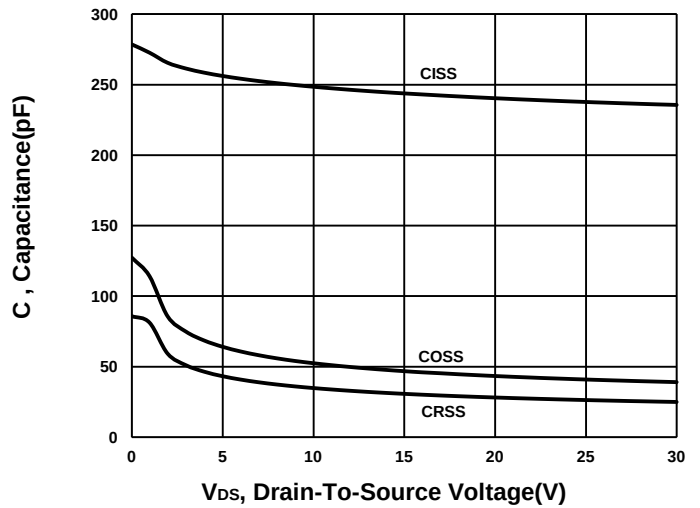
Transfer Characteristics



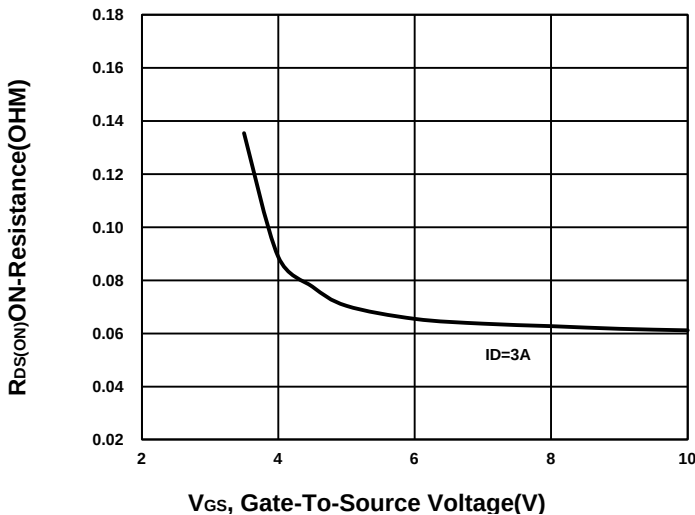
Gate charge Characteristics



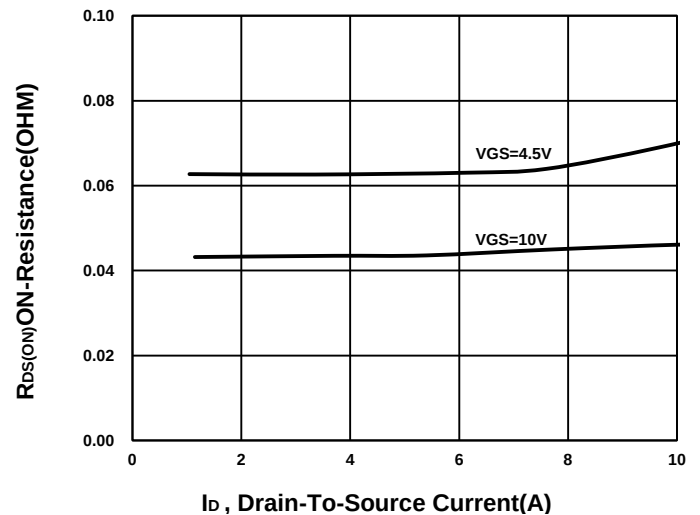
Capacitance Characteristic



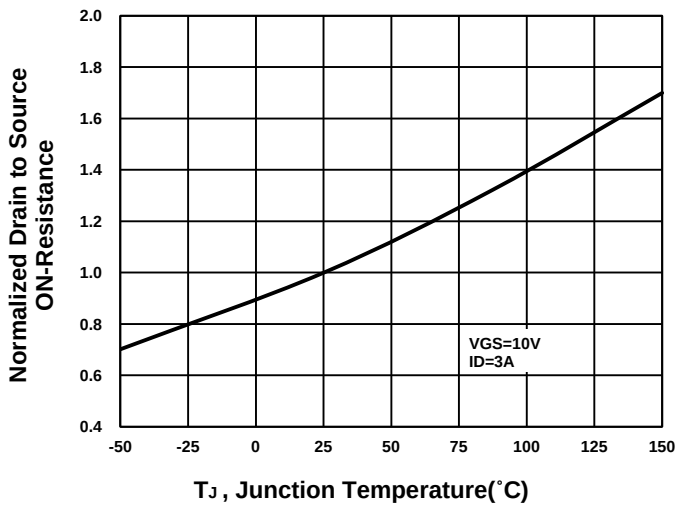
On-Resistance VS Gate-To-Source



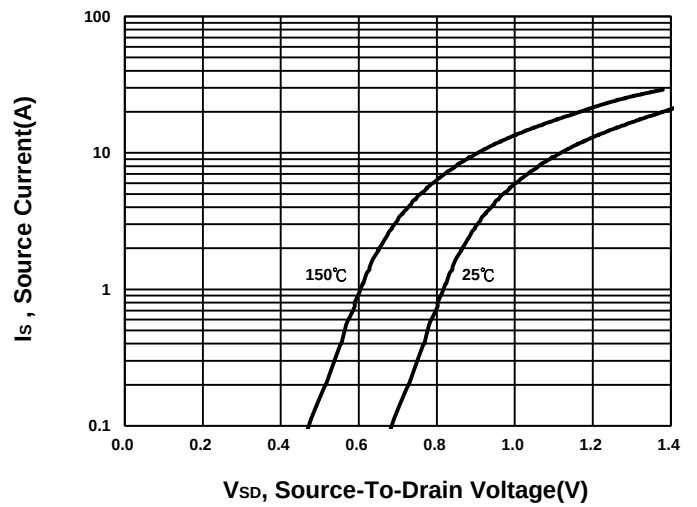
On-Resistance VS Drain Current



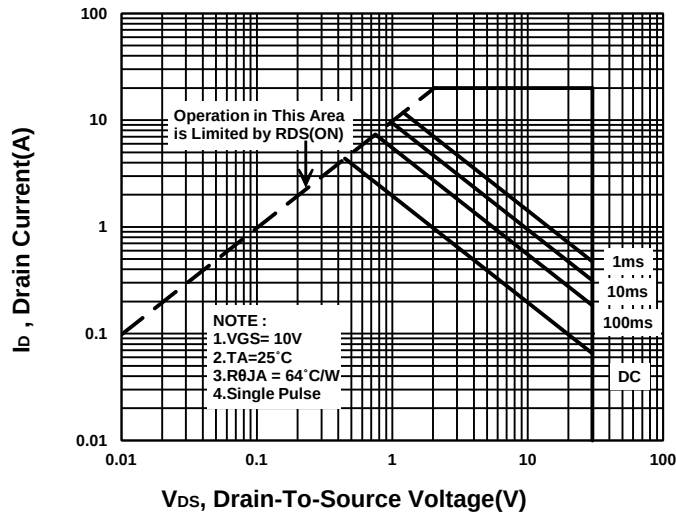
On-Resistance VS Temperature



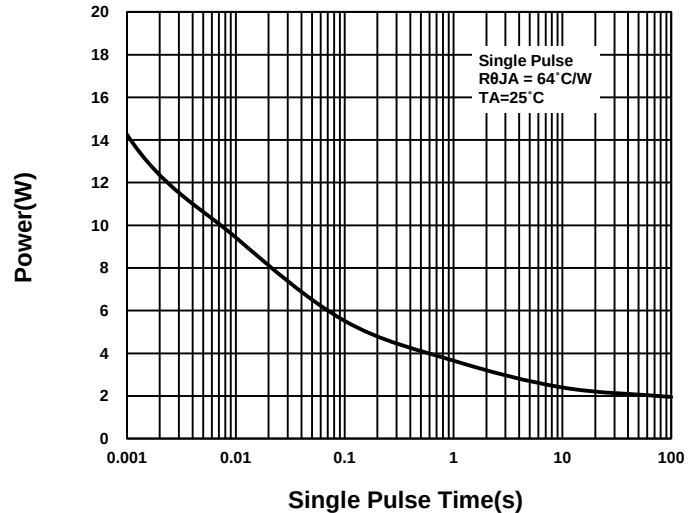
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

