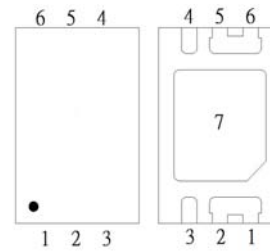
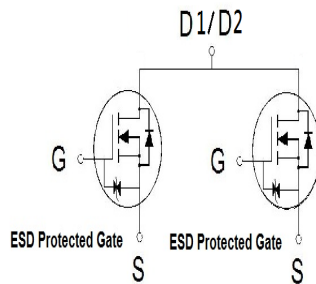


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	8 mΩ	12.9A



1,2:S1
3:G1
4:G2
5,6:S2
7:D1/D2

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	V
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	12.9	A
	$T_A = 70\text{ °C}$		10	
Pulsed Drain Current ¹		I_{DM}	42	
Avalanche Current		I_{AS}	23	
Avalanche Energy ³		E_{AS}	26	mJ
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2.4	W
	$T_A = 70\text{ °C}$		1.5	
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	$R_{\theta JA}$		52	°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, in a still air environment with $T_A = 25\text{ °C}$.

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

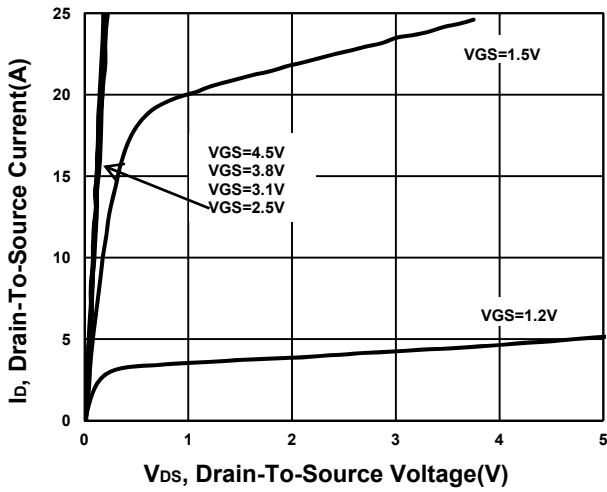
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.66	1	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			±10	uA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
		$V_{DS} = 10V, V_{GS} = 0V, T_J = 125\text{ °C}$			10	

Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 3A$	5.1	6.3	8	mΩ
		$V_{GS} = 3.8V, I_D = 3A$	5.4	7.2	8.1	
		$V_{GS} = 3.1V, I_D = 3A$	5.7	7.6	9.5	
		$V_{GS} = 2.5V, I_D = 3A$	6.3	8.4	10.5	
		$V_{GS} = 1.8V, I_D = 3A$	7	11	15	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 3A$		32		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		1584		pF
Output Capacitance	C_{oss}			215		
Reverse Transfer Capacitance	C_{rss}			164		
Total Gate Charge ²	Q_g	$V_{DS} = 10V, I_D = 3A$ $V_{GS} = 4.5V$		18.4		nC
Gate-Source Charge ²	Q_{gs}			1.8		
Gate-Drain Charge ²	Q_{gd}			4.4		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 10V$ $I_D \cong 3A, V_{GS} = 4.5V, R_{GS} = 6\Omega$		38		nS
Rise Time ²	t_r			42		
Turn-Off Delay Time ²	$t_{d(off)}$			60		
Fall Time ²	t_f			25		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				2	A
Forward Voltage ¹	V_{SD}	$I_F = 3A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 3A, di_F/dt = 100A / \mu S$		20		nS
Reverse Recovery Charge	Q_{rr}			9		nC

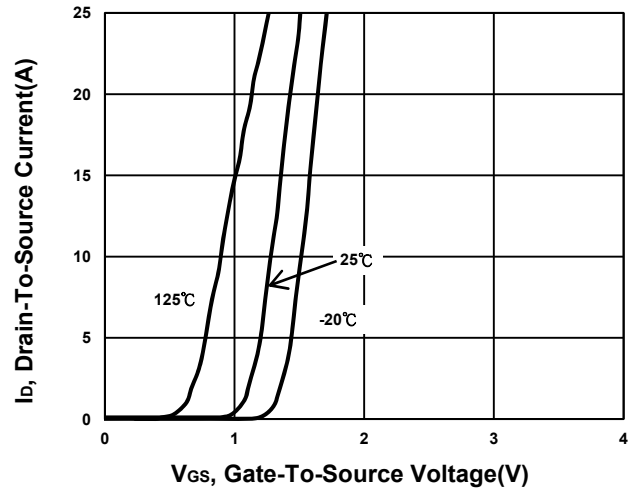
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

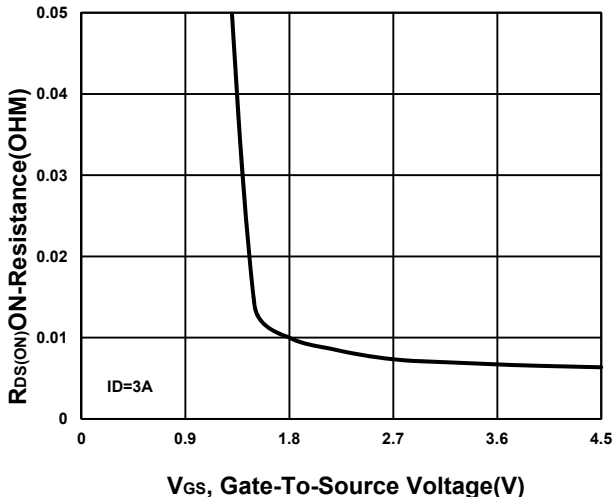
Output Characteristics



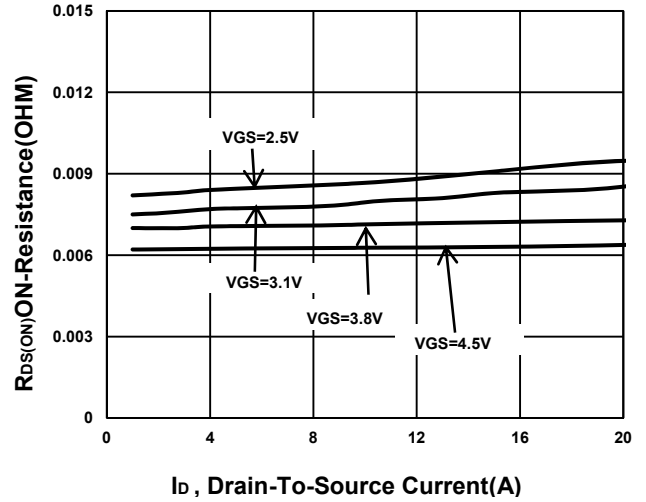
Transfer Characteristics



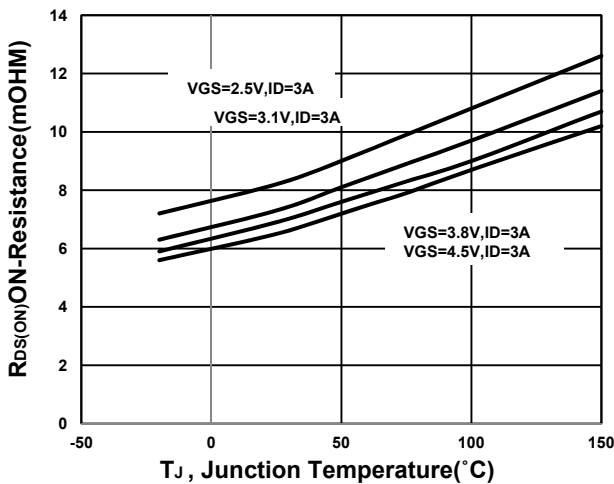
On-Resistance VS Gate-To-Source



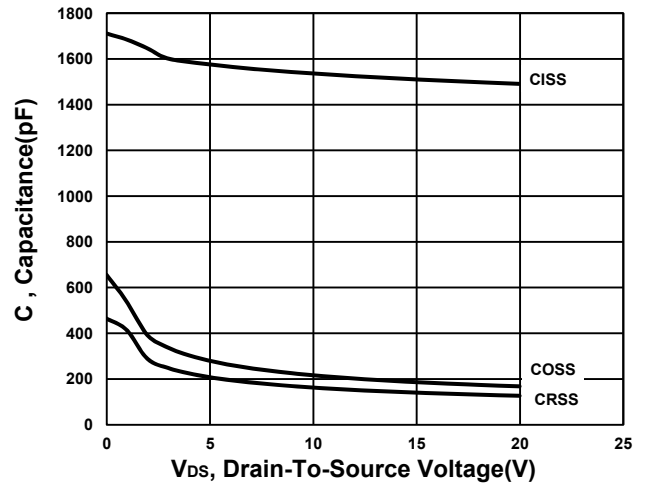
On-Resistance VS Drain Current



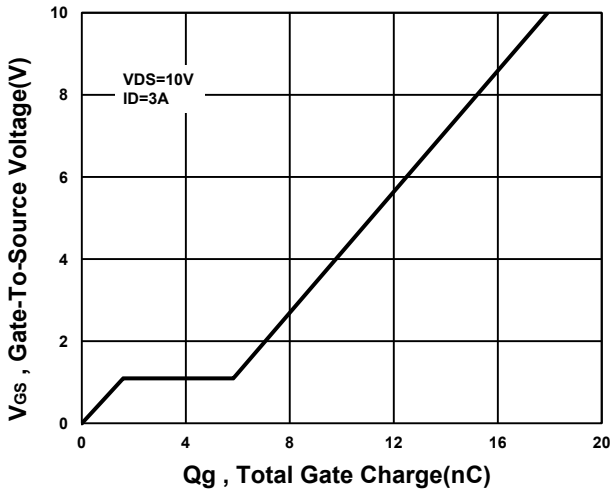
On-Resistance VS Temperature



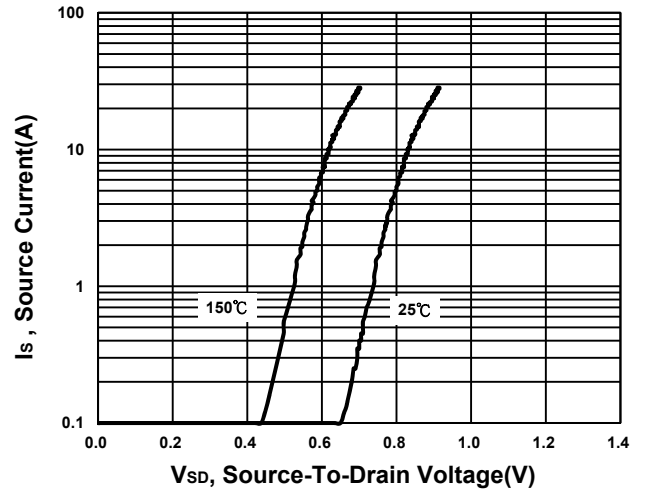
Capacitance Characteristic



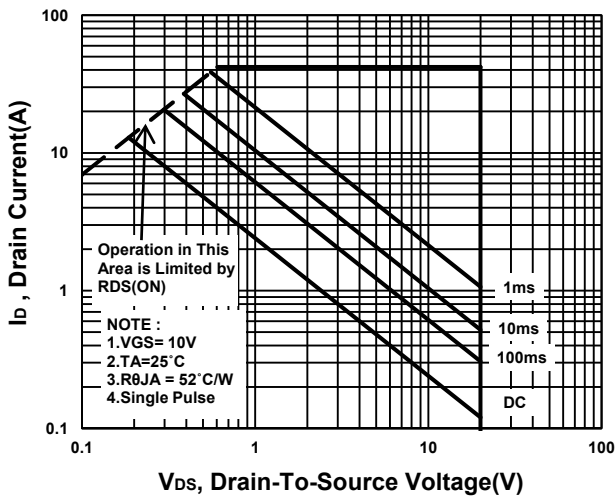
Gate charge Characteristics



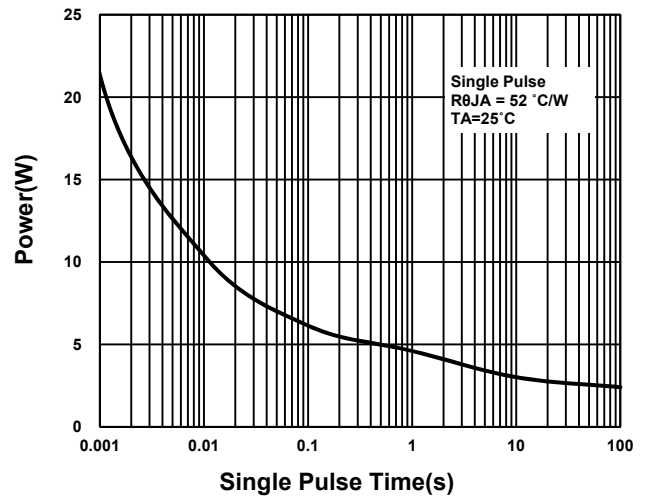
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

