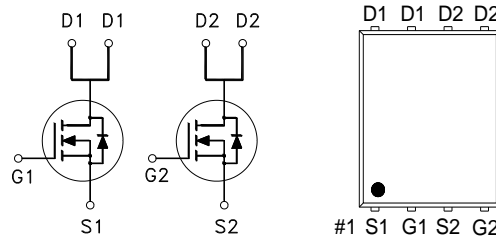


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	22.5mΩ	23A



G. GATE
D. DRAIN
S. SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current ³	$T_C = 25\text{ °C}$	I_D	23	A
	$T_C = 100\text{ °C}$		15	
Pulsed Drain Current ¹		I_{DM}	100	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	6	
	$T_A = 70\text{ °C}$		4.8	
Avalanche Current		I_{AS}	25	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	31.2	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	27	W
	$T_C = 100\text{ °C}$		11	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	1.8	W
	$T_A = 70\text{ °C}$		1.1	
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	$R_{\theta JA}$		68	°C / W
Junction-to-Case	$R_{\theta JC}$		4.5	

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 $T_A = 25\text{ °C}$.

³Package limitation current is 16A.

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	60			V	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.3	1.75	2.3		
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA	
		V _{DS} = 40V, V _{GS} = 0V, T _J = 55 °C			10		
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 8A		21.4	30	mΩ	
		V _{GS} = 10V, I _D = 8A		18.7	22.5		
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 8A		34		S	
DYNAMIC⁴							
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz	822	1028	1233	pF	
Output Capacitance	C _{oss}		98	123	147		
Reverse Transfer Capacitance	C _{riss}		51	85	119		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz	0.4	0.8	1.2	Ω	
Total Gate Charge ²	Q _g	V _{GS} = 10V	19	24	29	nC	
		V _{GS} = 4.5V	10.8	13.6	16.3		
Gate-Source Charge ²	Q _{gs}	V _{DS} = 30V, V _{GS} = 10V, I _D = 8A	2.2	2.8	3.4		
Gate-Drain Charge ²	Q _{gd}		4.4	7.4	10.4		
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = 30V, I _D ≅ 8A, V _{GS} = 10V, R _{GEN} = 6Ω		14		
Rise Time ²	t _r				32		
Turn-Off Delay Time ²	t _{d(off)}			38			
Fall Time ²	t _f			53			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS⁴							
Continuous Current ³	I _S				20	A	
Forward Voltage ¹	V _{SD}	I _F = 8A, V _{GS} = 0V			1.3	V	
Reverse Recovery Time	t _{rr}	I _F = 8A, dI _F /dt = 100A / μS	11	22	33	nS	
Reverse Recovery Charge	Q _{rr}		9.5	19	28	nC	

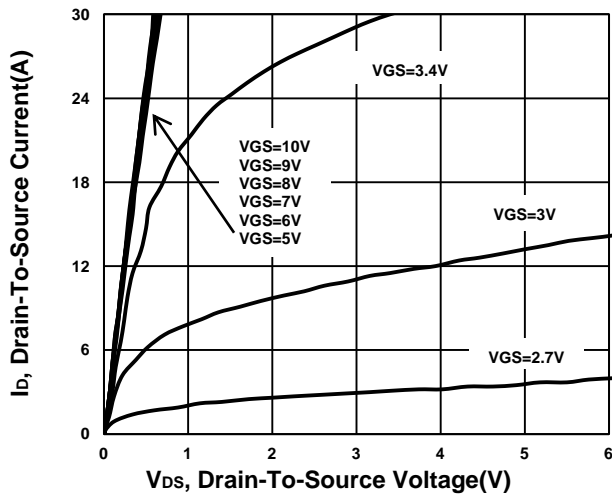
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

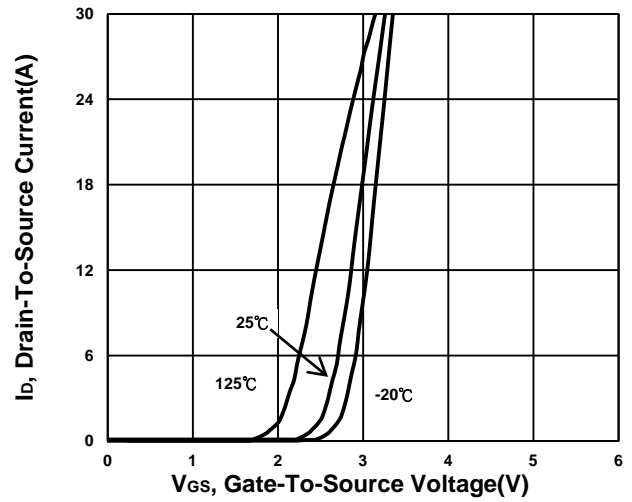
³Package limitation current is 16A.

⁴Guaranteed by design, not subject to production testing.

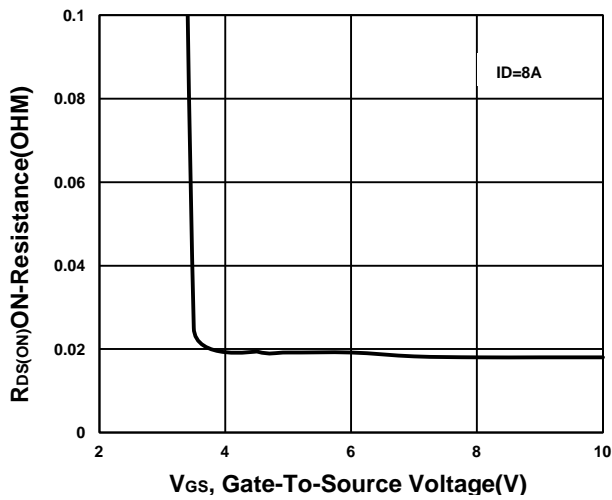
Output Characteristics



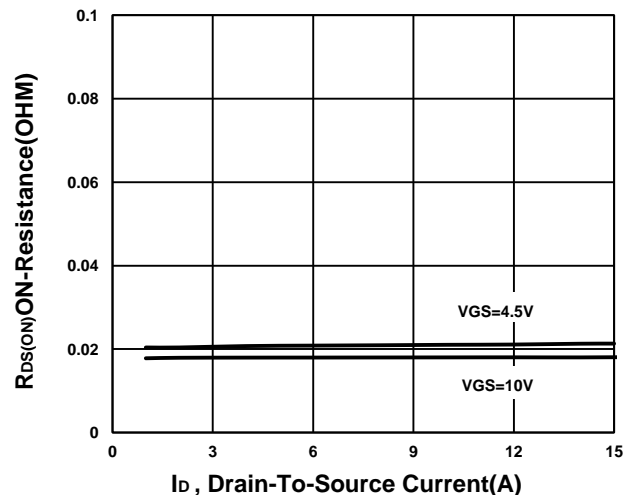
Transfer Characteristics



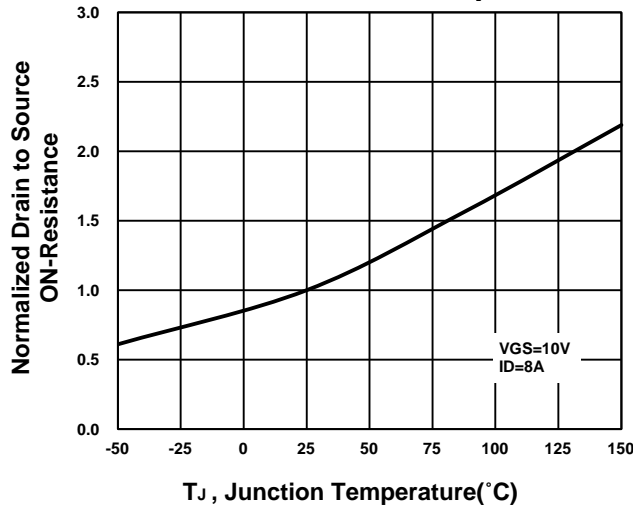
On-Resistance VS Gate-To-Source Voltage



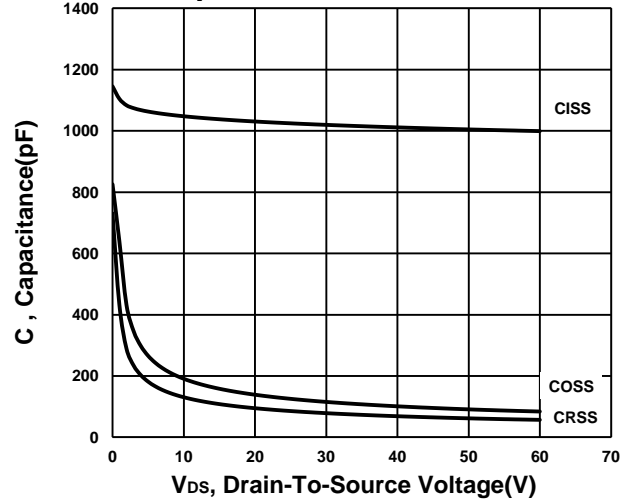
On-Resistance VS Drain Current



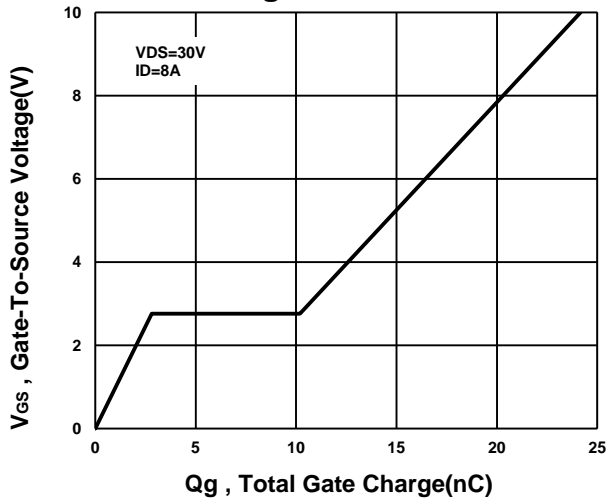
On-Resistance VS Temperature



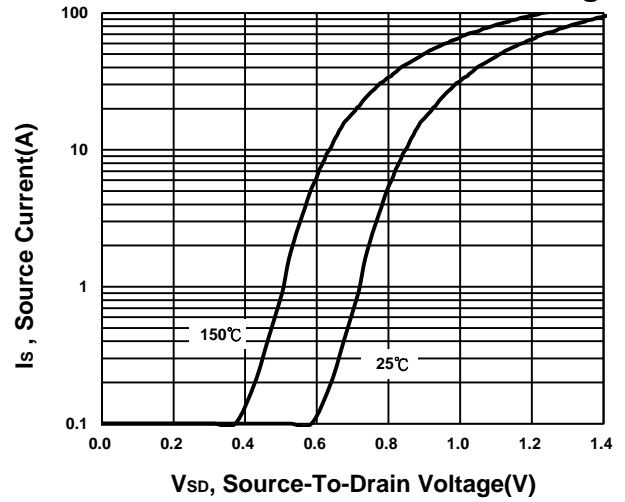
Capacitance Characteristic



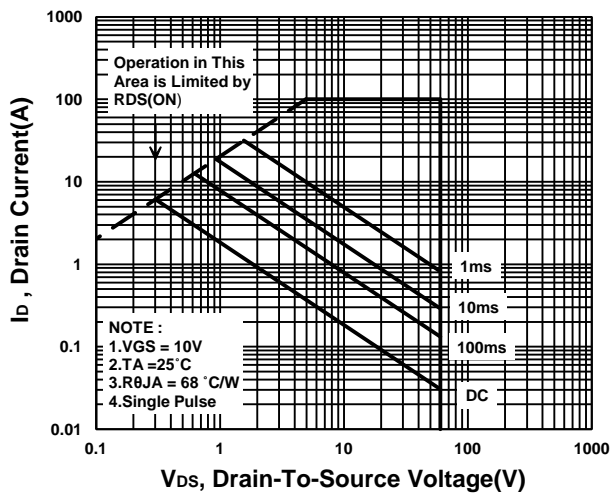
Gate charge Characteristics



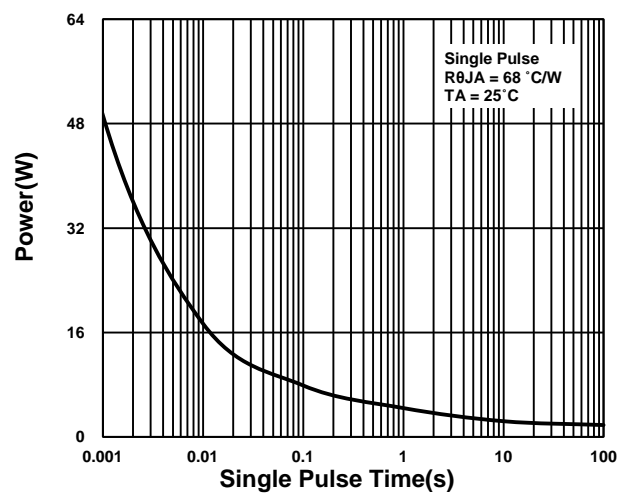
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

