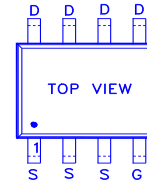
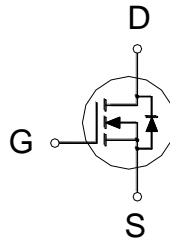


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	55mΩ	4.5A



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	$T_A = 25\text{ °C}$	I_D	4.5	A
	$T_A = 70\text{ °C}$		3.6	
Pulsed Drain Current ¹		I_{DM}	16	
Avalanche Current		I_{AS}	14	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	9.8	mJ
Power Dissipation ³	$T_A = 25\text{ °C}$	P_D	2.5	W
	$T_A = 70\text{ °C}$		1.6	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$t \leq 10\text{s}$	$R_{\theta JA}$		50	°C / W
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		86	

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 $T_A = 25\text{ °C}$.

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

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

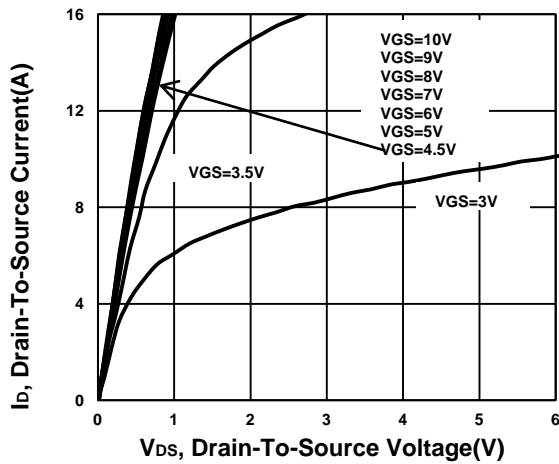
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.3	1.75	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 48\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 40\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ °C}$			10	

Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 3A$	49	72	mΩ
		$V_{GS} = 10V, I_D = 3A$	41	55	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 3A$	13		S
DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$	381		pF
Output Capacitance	C_{oss}		53		
Reverse Transfer Capacitance	C_{rss}		37		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	1.7		Ω
Total Gate Charge ²	Q_g	$V_{DS} = 30V, V_{GS} = 10V, I_D = 3A$	10.3		nC
Gate-Source Charge ²	Q_{gs}		1.1		
Gate-Drain Charge ²	Q_{gd}		3.5		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 30V, I_D \cong 3A, V_{GS} = 10V, R_{GEN} = 6\Omega$	9.6		nS
Rise Time ²	t_r		14		
Turn-Off Delay Time ²	$t_{d(off)}$		22		
Fall Time ²	t_f		12		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)					
Continuous Current	I_S			1.1	A
Forward Voltage ¹	V_{SD}	$I_F = 3A, V_{GS} = 0V$		1.2	V
Diode Reverse Recovery Time	t_{rr}	$I_F = 3A, di/dt=100A/\mu s$	15.7		nS
Diode Reverse Recovery Charge	Q_{rr}		5.8		nC

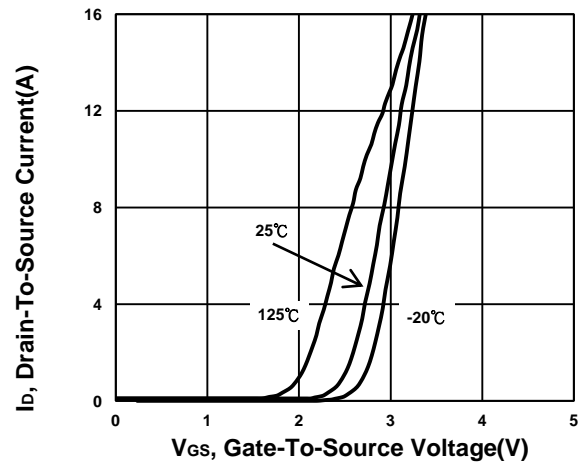
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

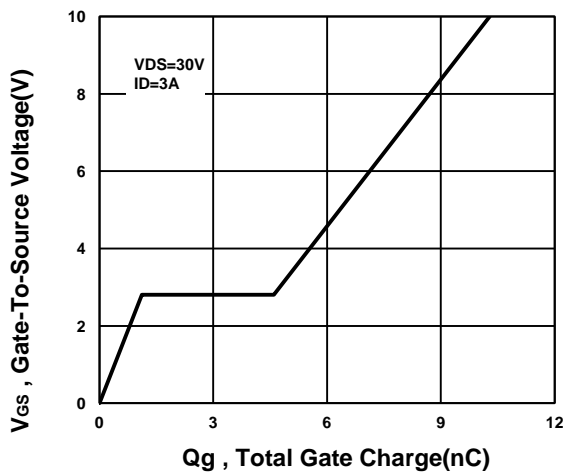
Output Characteristics



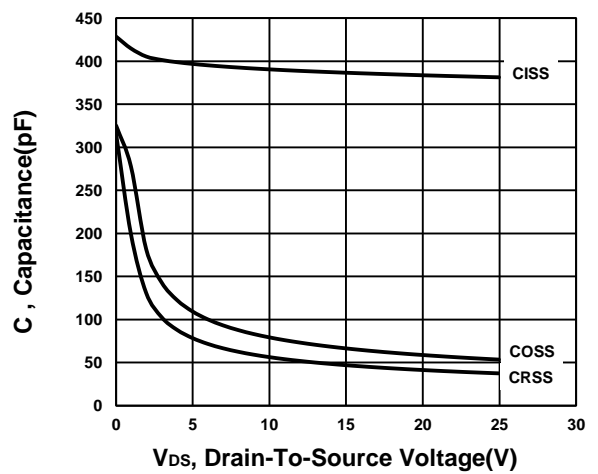
Transfer Characteristics



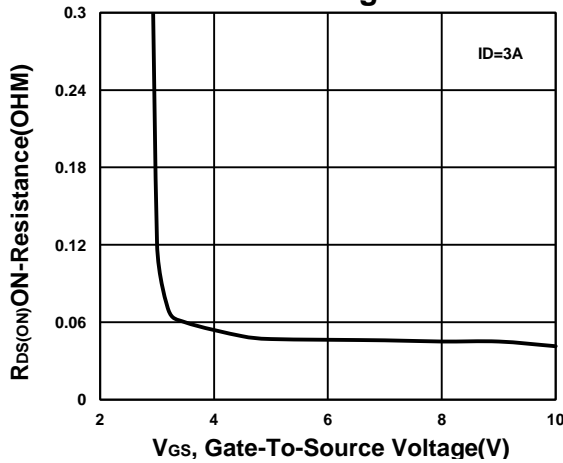
Gate charge Characteristics



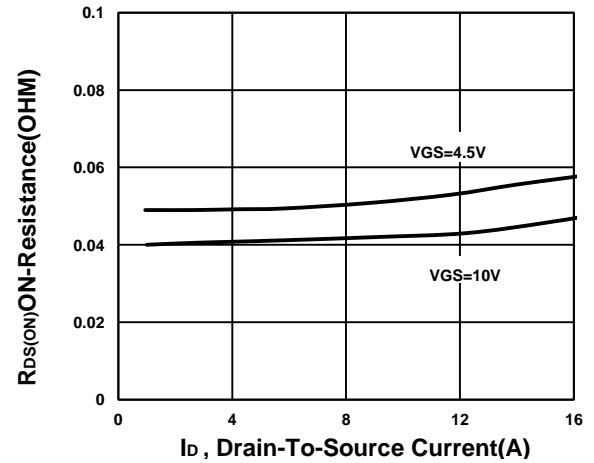
Capacitance Characteristic



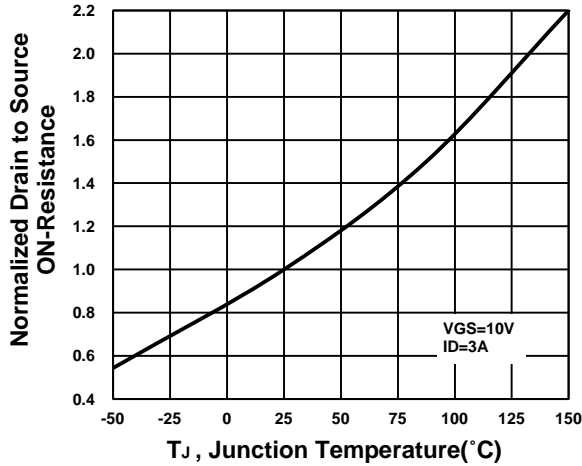
On-Resistance VS Gate-To-Source Voltage



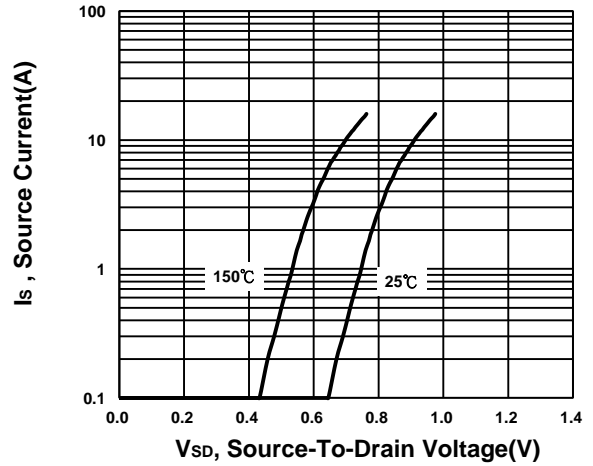
On-Resistance VS Drain Current



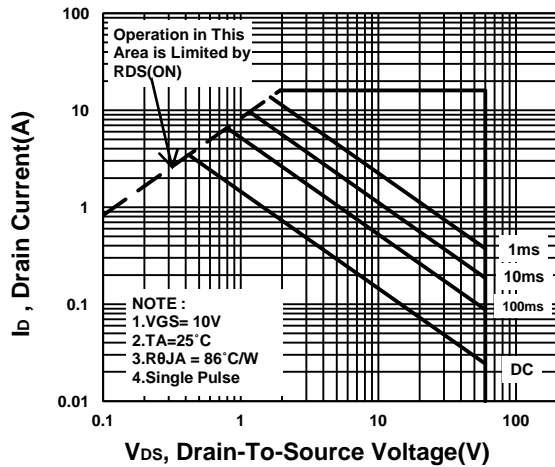
On-Resistance VS Temperature



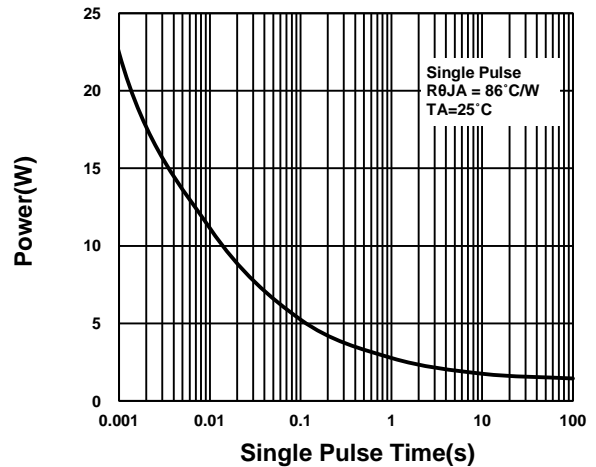
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

