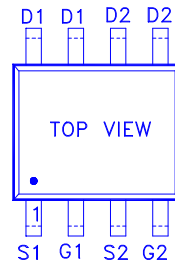
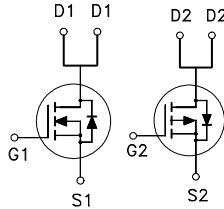




**PRODUCT SUMMARY**

	$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
N-Channel	30	21mΩ	8A
P-Channel	-30	34mΩ	-6A



G : GATE  
D : DRAIN  
S : SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	N-Channel	P-Channel	UNITS
Drain-Source Voltage		$V_{DS}$	30	-30	V
Gate-Source Voltage		$V_{GS}$	±20	±20	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	8	-6	A
	$T_A = 70\text{ }^\circ\text{C}$		6	-5	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	36	-27	
Avalanche Current		$I_{AS}$	26	-27	
Avalanche Energy	L = 0.1mH	$E_{AS}$	35	38	mJ
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	2		W
	$T_A = 70\text{ }^\circ\text{C}$		1.3		
Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150		°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		62.5	°C / W

<sup>1</sup>Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
<b>STATIC</b>							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	N-Ch	30		V	
		$V_{GS} = 0V, I_D = -250\mu A$	P-Ch	-30			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	N-Ch	1	1.7		2.5
		$V_{DS} = V_{GS}, I_D = -250\mu A$	P-Ch	-1	-1.6		-2.5

Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$	N-Ch			$\pm 100$	nA
		$V_{DS} = 0V, V_{GS} = \pm 20V$	P-Ch			$\pm 100$	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$	N-Ch			1	$\mu A$
		$V_{DS} = -24V, V_{GS} = 0V$	P-Ch			-1	
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^\circ C$	N-Ch			10	
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 55^\circ C$	P-Ch			-10	
On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	N-Ch	36			A
		$V_{DS} = -5V, V_{GS} = -10V$	P-Ch	-27			
Drain-Source On-State esistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$	N-Ch		19	31	$m\Omega$
		$V_{GS} = -4.5V, I_D = -5A$	P-Ch		40	56	
		$V_{GS} = 10V, I_D = 7A$	N-Ch		14	21	
		$V_{GS} = -10V, I_D = -6A$	P-Ch		28	34	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 10V, I_D = 5A$	N-Ch		14		S
		$V_{DS} = -10V, I_D = -5A$	P-Ch		8		

DYNAMIC							
Input Capacitance	$C_{iss}$	N-Channel	N-Ch		659		$pF$
			P-Ch		983		
Output Capacitance	$C_{oss}$	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$	N-Ch		218		$pF$
			P-Ch		216		
Reverse Transfer Capacitance	$C_{rss}$	$V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$	N-Ch		138		$pF$
			P-Ch		157		
Total Gate Charge <sup>2</sup>	$Q_g$	N-Channel	N-Ch		16		$nC$
			P-Ch		21		
Gate-Source Charge <sup>2</sup>	$Q_{gs}$	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V, I_D = 7A$	N-Ch		2		$nC$
			P-Ch		3		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V, I_D = -6A$	N-Ch		5		$nC$
			P-Ch		4		

Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	N-Channel	N-Ch		9		nS
			P-Ch		10		
Rise Time <sup>2</sup>	$t_r$	$V_{DS} = 15V$	N-Ch		11		
		$I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6\Omega$	P-Ch		15		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$	P-Channel	N-Ch		18		
			P-Ch		68		
Fall Time <sup>2</sup>	$t_f$	$V_{DS} = -15V,$	N-Ch		20		
		$I_D \cong -1A, V_{GS} = -10V, R_{GEN} = 6\Omega$	P-Ch		34		

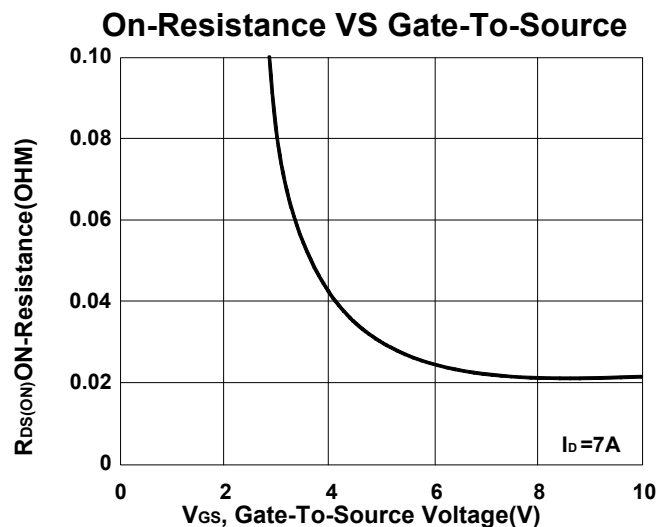
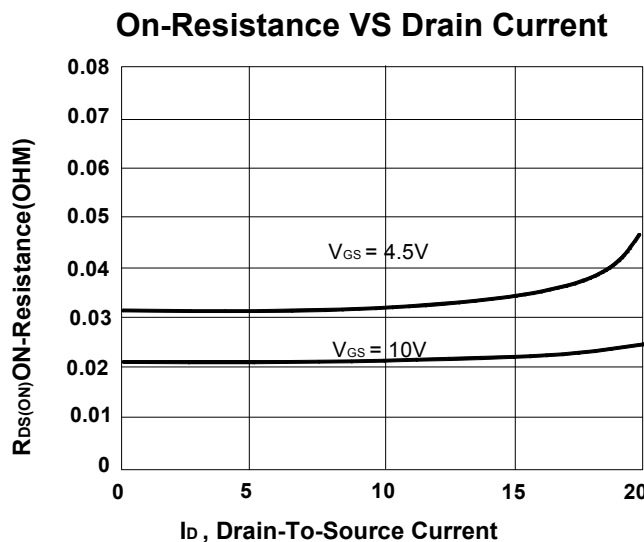
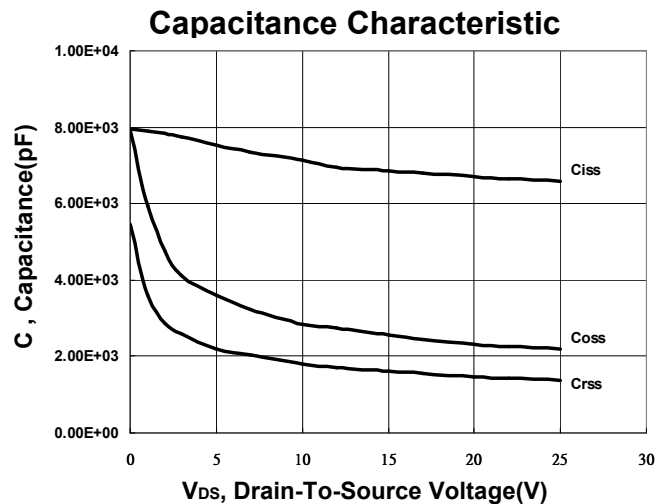
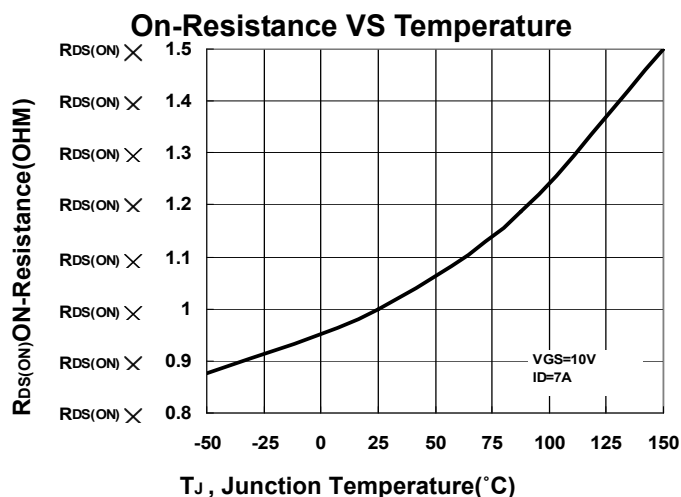
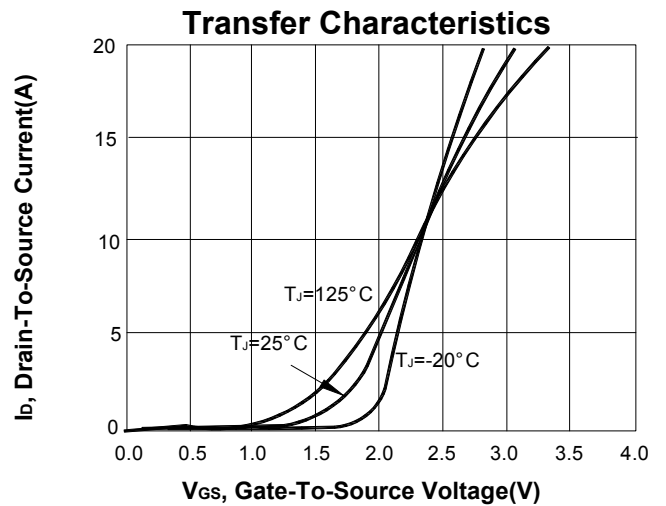
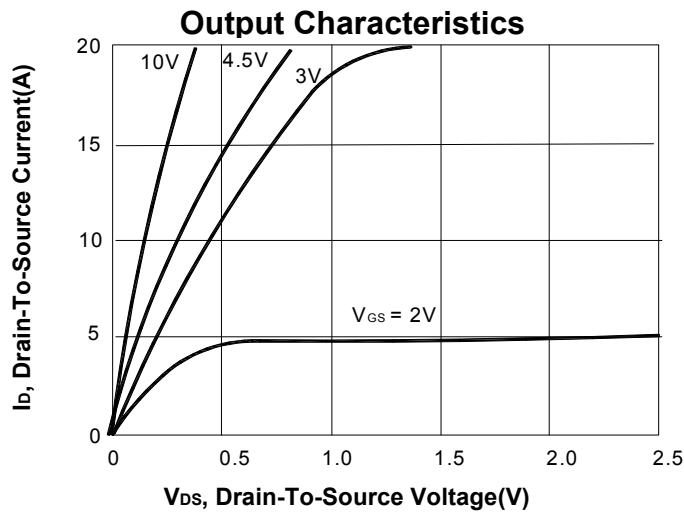
**SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)**

Continuous Current	$I_S$		N-Ch			2	A
			P-Ch			-2	
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 5A, V_{GS} = 0V$	N-Ch			1	V
		$I_F = -5A, V_{GS} = 0V$	P-Ch			-1	
Reverse Recovery Time	$t_{rr}$	$I_F = 5A, di_F/dt = 100A / \mu S$	N-Ch			15.5	nS
		$I_F = -5A, di_F/dt = 100A / \mu S$	P-Ch			15.5	
Reverse Recovery Charge	$Q_{rr}$		N-Ch			7.9	nC
			P-Ch			7.9	

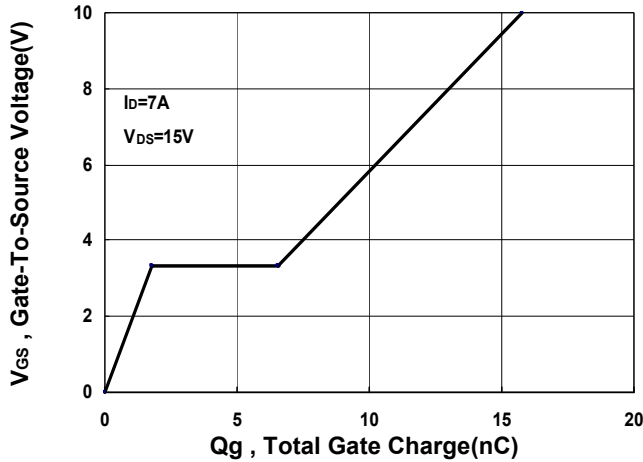
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

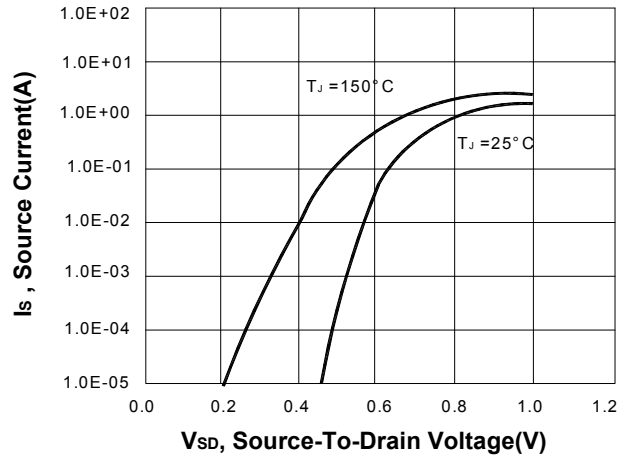
**TYPICAL PERFORMANCE CHARACTERISTICS  
N-CHANNEL**



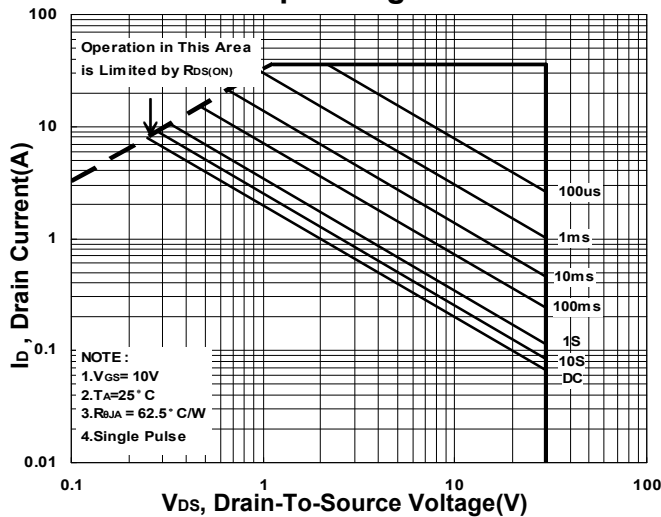
**Gate charge Characteristics**



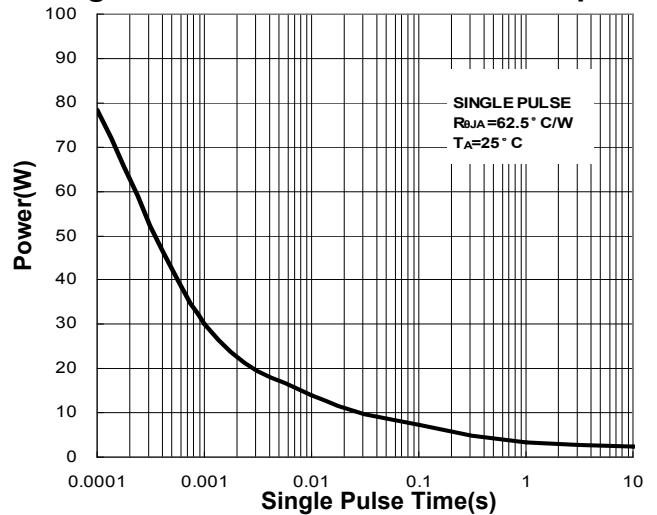
**Source-Drain Diode Forward Voltage**



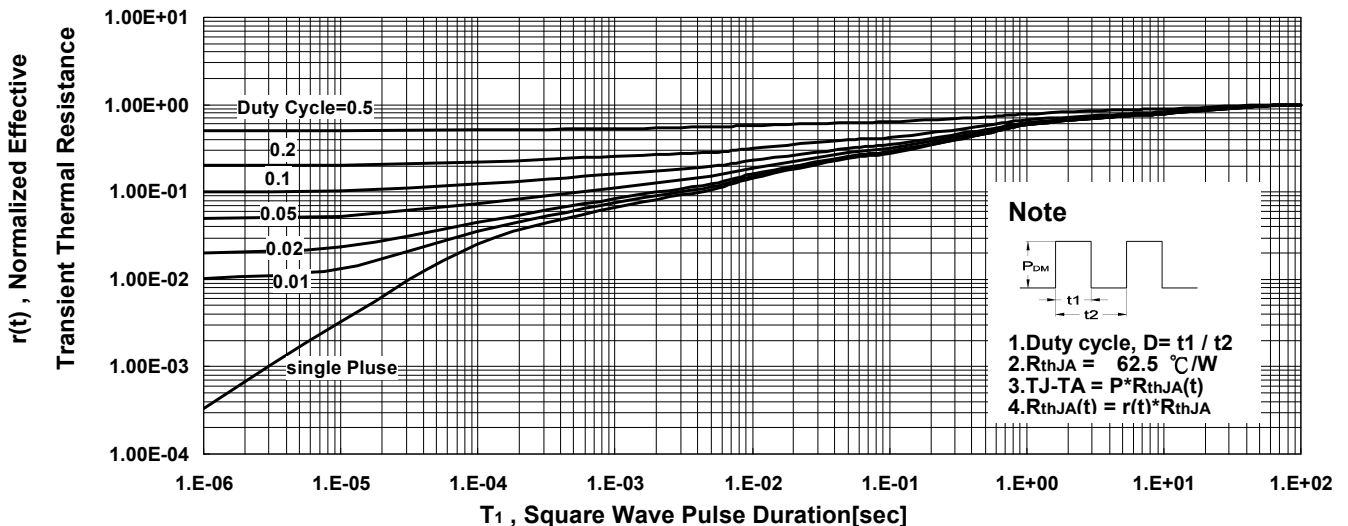
**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**



**TYPICAL PERFORMANCE CHARACTERISTICS  
P-CHANNEL**

