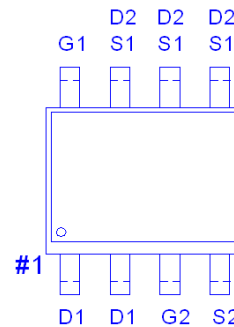
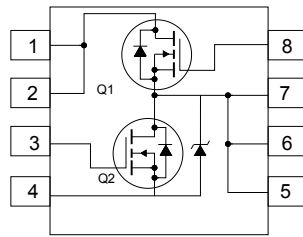


PRODUCT SUMMARY

	$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
Q2	30V	15.8mΩ	9A
Q1	30V	21mΩ	8A



G : GATE
D : DRAIN
S : SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	Q2	Q1	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	9	8	A
	$T_A = 70\text{ }^\circ\text{C}$		7	6	
Pulsed Drain Current ¹		I_{DM}	35	30	
Avalanche Current		I_{AS}	29	21	
Avalanche Energy	L = 0.1mH	E_{AS}	43	23	mJ
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	2		W
	$T_A = 70\text{ }^\circ\text{C}$		1.28		
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150		$^\circ\text{C}$

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

PARAMETERS/TEST CONDITIONS		SYMBOL	Schottky	UNITS
Reverse Current	$V_R = 25\text{V}$	I_R	0.05	mA
Forward Voltage	$I_F = 1\text{A}$	V_F	0.45	V

THERMAL RESISTANCE RATINGS

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

¹Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	Q2	30			V
			Q1	30			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	Q2	1	1.7	3	V
			Q1	1	2	3	

Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	Q2 Q1			± 100 ± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$	Q2 Q1			1 -1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125^\circ C$	Q2 Q1			10 -10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	Q2 Q1	35 30			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 7A$	Q2		14.2	20	$m\Omega$
		$V_{GS} = 10V, I_D = 9A$			10.5	15.8	
		$V_{GS} = 4.5V, I_D = 6A$	Q1		25.6	32	
		$V_{GS} = 10V, I_D = 7A$			15.8	21	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 9A$	Q2		25		S
		$V_{GS} = 10V, I_D = 7A$	Q1		15		

DYNAMIC

Input Capacitance	C_{iss}	N-Channel $V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	Q2 Q1		1040 560		pF
Output Capacitance	C_{oss}		Q2 Q1		295 160		
Reverse Transfer Capacitance	C_{rss}		Q2 Q1		139 84		
Gate Resistance	R_g		$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	Q2 Q1		1.5 2	
Total Gate Charge ²	Q_g ($V_{GS}=10V$)	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V,$ $I_D = 9A$	Q2 Q1		20 11		nC
Total Gate Charge ²	Q_g ($V_{GS}=4.5V$)		Q2 Q1		9 5.5		
Gate-Source Charge ²	Q_{gs}		Q2 Q1		3.5 2.5		
Gate-Drain Charge ²	Q_{gd}		Q2 Q1		3.5 2.5		

Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V$ $I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6\Omega$	Q2		18		nS
			Q1		19		
Rise Time ²	t_r		Q2		12		
			Q1		8		
Turn-Off Delay Time ²	$t_{d(off)}$		Q2		40		nS
			Q1		39		
Fall Time ²	t_f		Q2		8		nS
			Q1		6		

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$)

Continuous Current	I_S		Q2			2.8	A
			Q1			2	
Forward Voltage ¹	V_{SD}	Q2: $I_F = 9A, V_{GS} = 0V$ Q1: $I_F = 7A, V_{GS} = 0V$	Q2			0.7	V
			Q1			1	
Reverse Recovery Time	t_{rr}	Q2: $I_F = 9A, di_F/dt = 100\text{ A}/\mu\text{s}$ Q1: $I_F = 7A, di_F/dt = 100\text{ A}/\mu\text{s}$	Q2		15		nS
			Q1		20		
Reverse Recovery Charge	Q_{rr}		Q2		6		nC
			Q1		12		

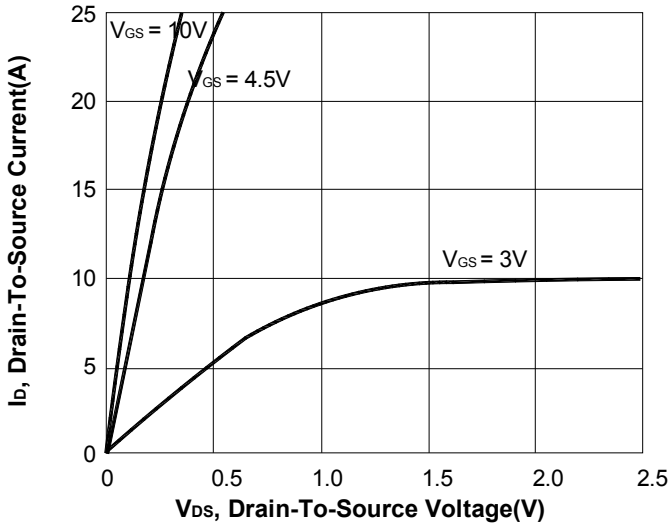
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

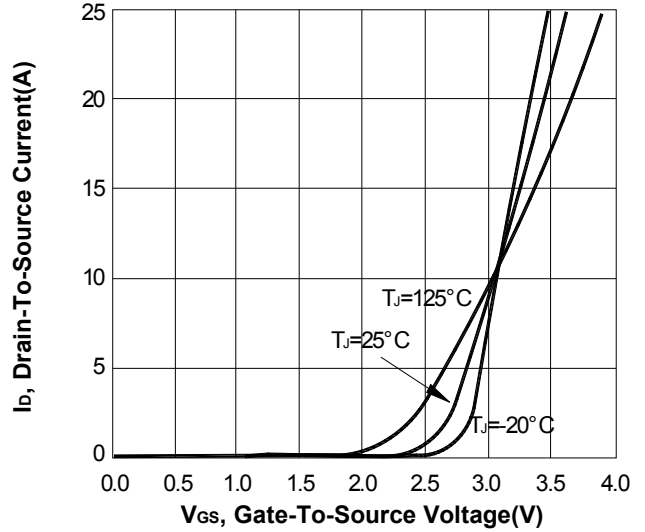
REMARK: THE PRODUCT MARKED WITH "PD1503YVS", DATE CODE or LOT #

Typical Characteristics: Q2

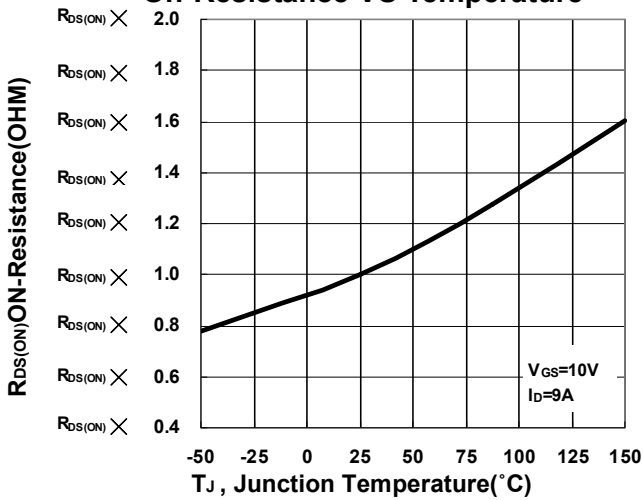
Output Characteristics



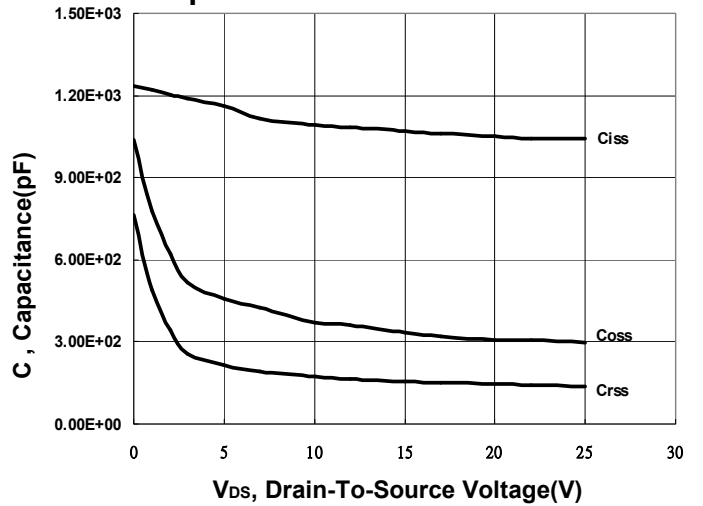
Transfer Characteristics



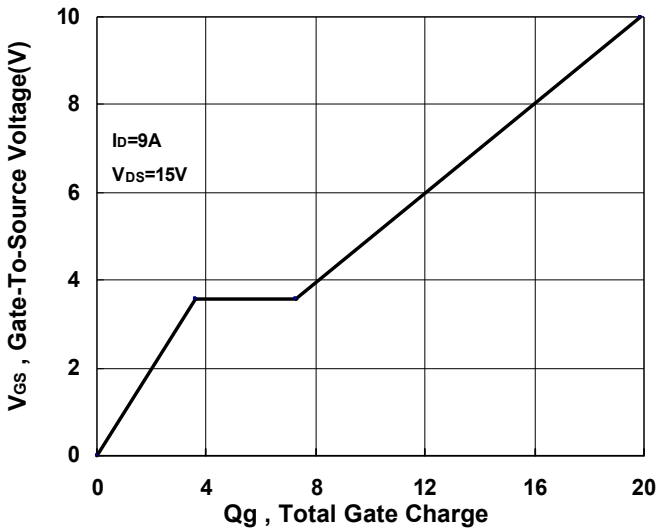
On-Resistance VS Temperature



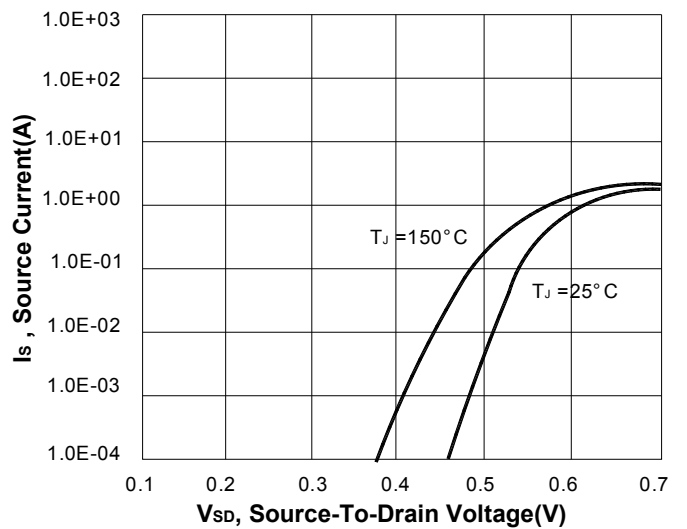
Capacitance Characteristic



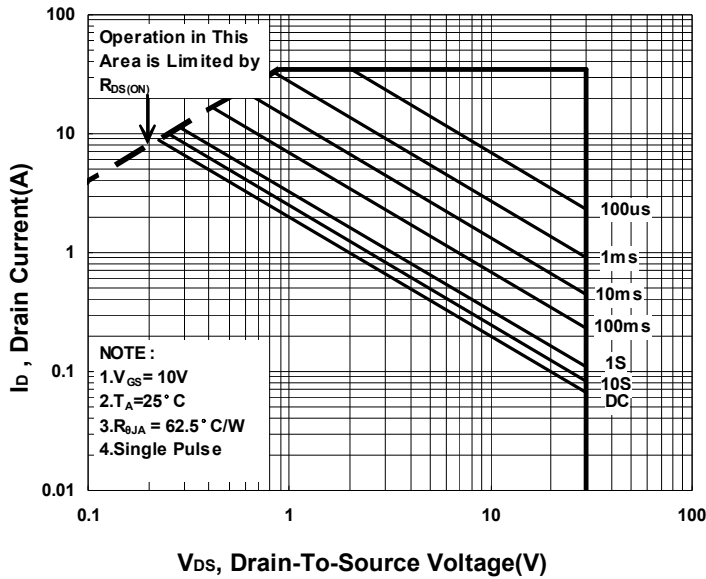
Gate charge Characteristics



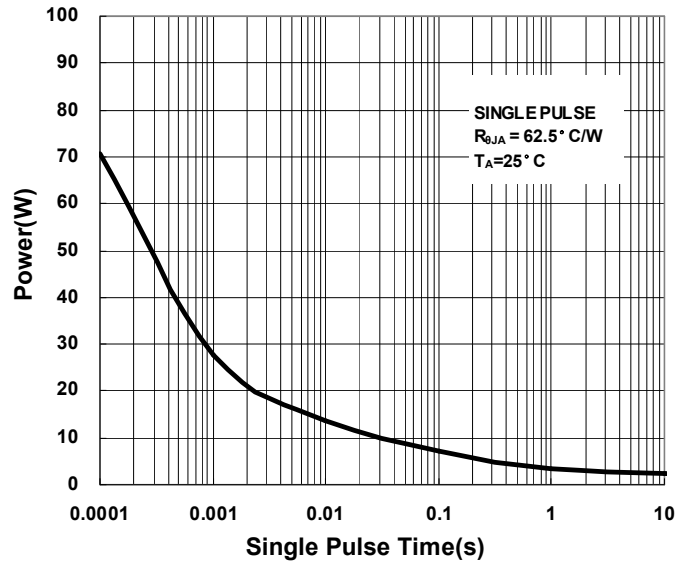
Source-Drain Diode Forward Voltage



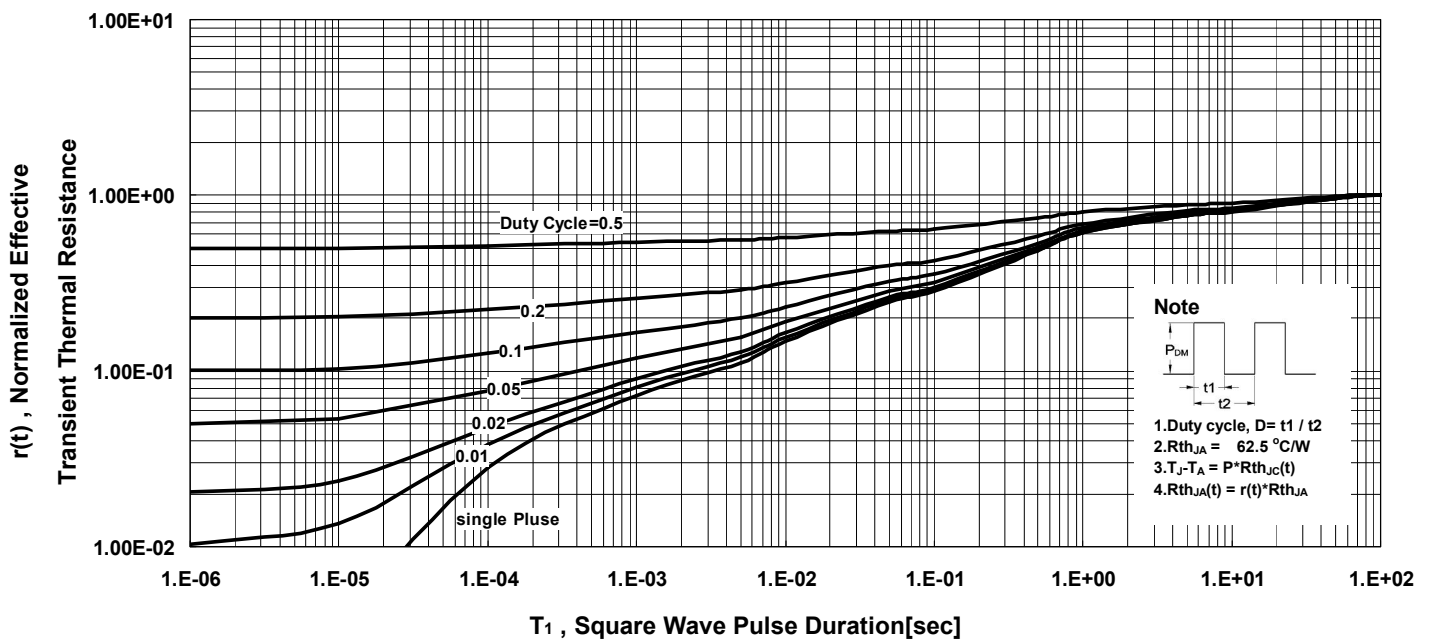
Safe Operating Area



Single Pulse Maximum Power Dissipation

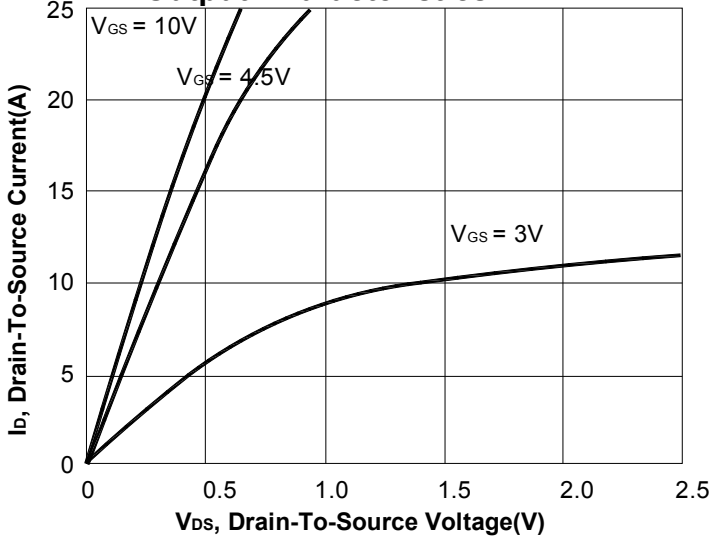


Transient Thermal Response Curve

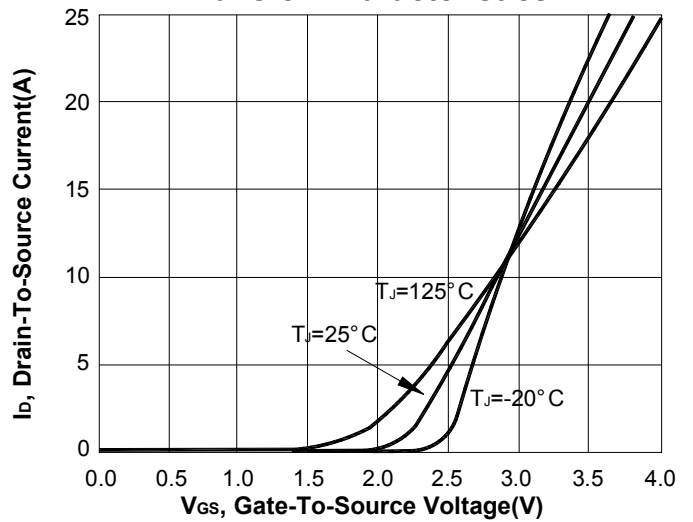


Typical Characteristics: Q1

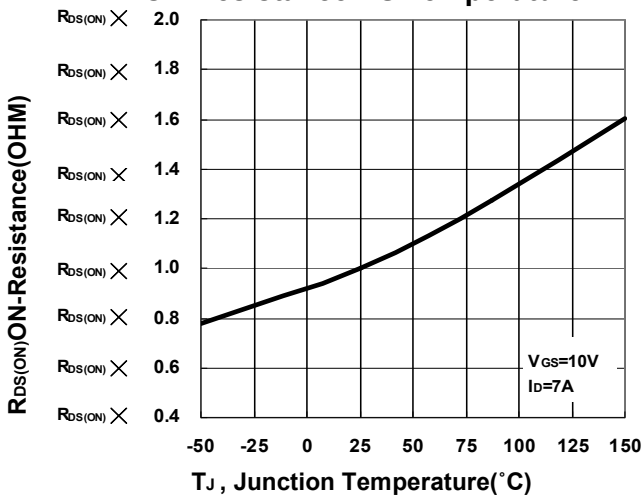
Output Characteristics



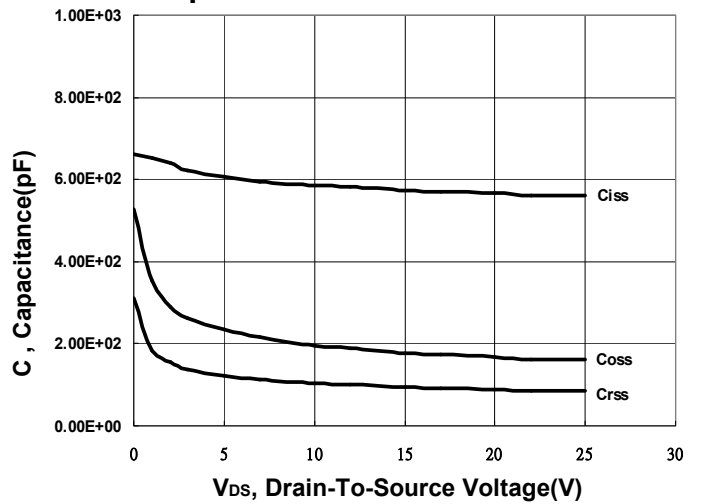
Transfer Characteristics



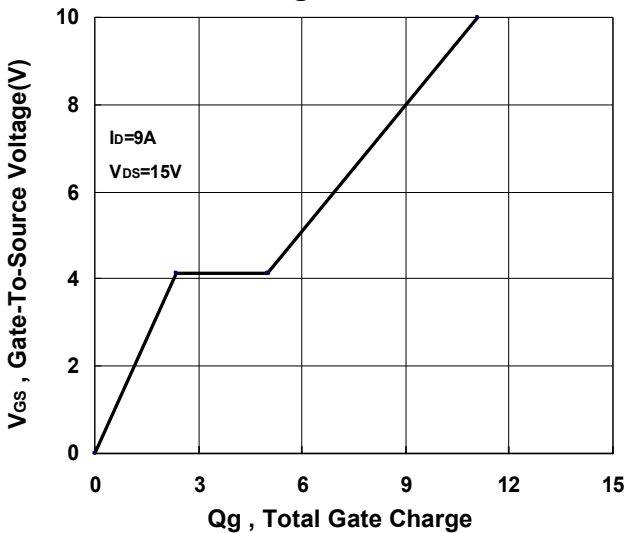
On-Resistance VS Temperature



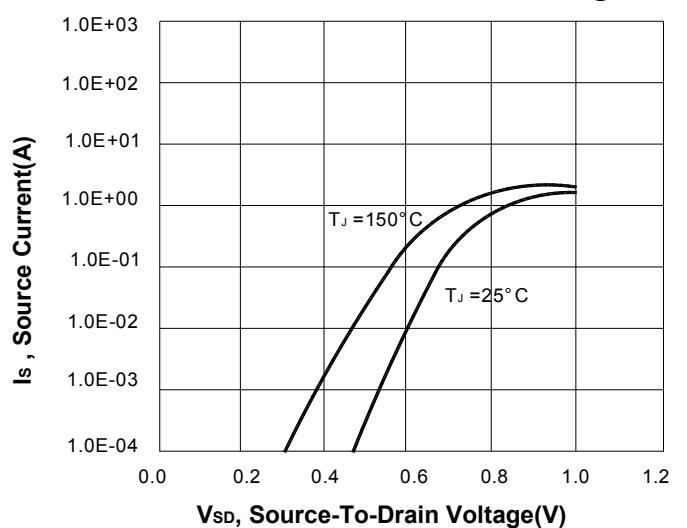
Capacitance Characteristic



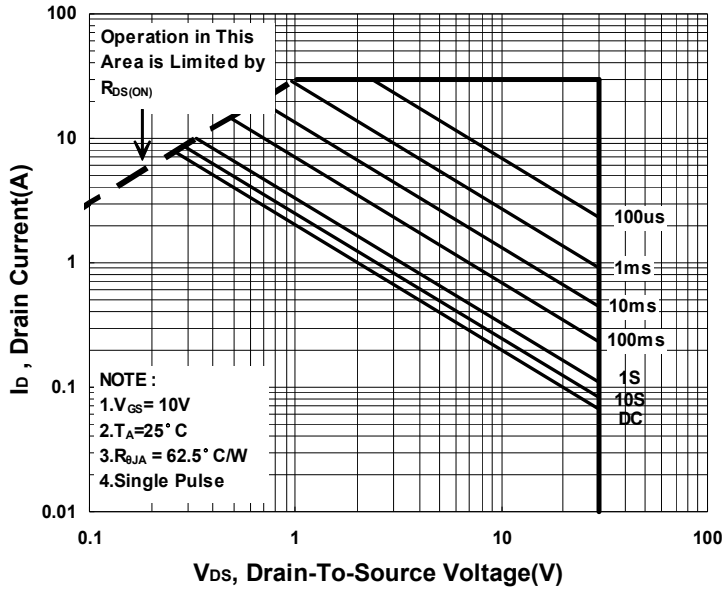
Gate charge Characteristics



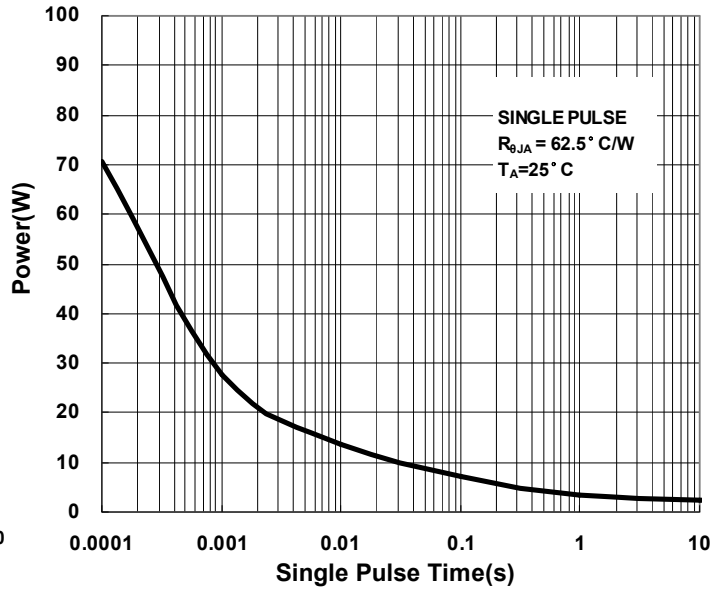
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

