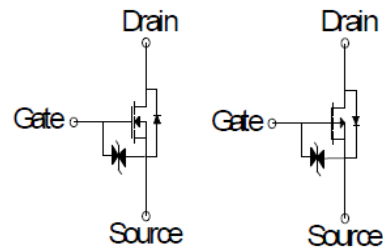
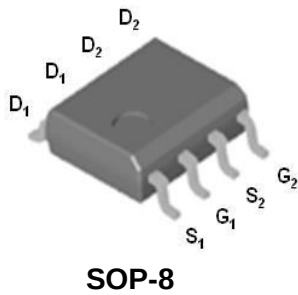


PZ5203QV

N&P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D	Channel
30V	22m Ω @ $V_{GS} = 10V$	7A	N
-30V	52m Ω @ $V_{GS} = -10V$	-5A	P



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

PARAMETERS/TEST CONDITIONS		SYMBOL	CH.	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	N	30	V
			P	-30	
Gate-Source Voltage		V_{GS}	N	± 20	
			P	± 20	
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	N	7	A
			P	-5	
	$T_A = 70^{\circ}\text{C}$		N	5	
			P	-4	
Pulsed Drain Current ¹		I_{DM}	N	28	
			P	-20	
Avalanche Current		I_{AS}	N	21	
			P	18	
Avalanche Energy	L = 0.1mH	E_{AS}	N	22	mJ
			P	17	
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	N	2	W
			P		
	$T_A = 70\text{ }^{\circ}\text{C}$		N	1.28	
			P		
Junction & Storage Temperature Range		T_j, T_{stg}		-55 to 150	$^{\circ}\text{C}$

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THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		90	°C / W

¹Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	CH.	LIMITS			UNITS
				MIN	TYP	MAX	
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	N	30			V
		$V_{GS} = 0V, I_D = -250\mu A$	P	-30			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	N	1	1.7	3	
		$V_{DS} = V_{GS}, I_D = -250\mu A$	P	-1	-1.7	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 16V$	N			± 30	μA
		$V_{DS} = 0V, V_{GS} = \pm 16V$	P			± 30	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$	N			1	μA
		$V_{DS} = -24V, V_{GS} = 0V$	P			-1	
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$	N			10	
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$	P			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	N	20			A
		$V_{DS} = -5V, V_{GS} = -10V$	P	-20			
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$	N		24	35	mΩ
		$V_{GS} = -4.5V, I_D = -5A$	P		55	92	
		$V_{GS} = 10V, I_D = 7A$	N		18	22	
		$V_{GS} = -10V, I_D = -5A$	P		34	52	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 7A$	N		10		S
		$V_{DS} = -10V, I_D = -5A$	P		10		

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DYNAMIC							
Input Capacitance	C_{iss}	N-Channel $V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	N		554		pF
			P		692		
Output Capacitance	C_{oss}	P-Channel $V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$	N		149		
			P		152		
Reverse Transfer Capacitance	C_{rss}		N		89		
			P		108		
Total Gate Charge ²	Q_g	N-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V,$ $I_D = 7V,$	N		11.8		nC
			P		14.8		
Gate-Source Charge ²	Q_{gs}	P-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V,$ $I_D = -5A$	N		1.8		
			P		2.5		
Gate-Drain Charge ²	Q_{gd}		N		3.7		
			P		4.7		
Turn-On Delay Time ²	$t_{d(on)}$	N-Channel $V_{DS} = 20V$ $I_D \cong 7A, V_{GS} = 10V, R_{GEN} = 6\Omega$	N		8		nS
			P		10		
Rise Time ²	t_r	P-Channel $V_{DS} = -20V,$ $I_D \cong -5A, V_{GS} = -10V, R_{GEN} = 6\Omega$	N		5		
			P		3		
Turn-Off Delay Time ²	$t_{d(off)}$		N		23		
			P		54		
Fall Time ²	t_f		N		3		
			P		46		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S		N			2	A
			P			-2	
Forward Voltage ¹	V_{SD}	$I_F = 7A, V_{GS} = 0V$	N			1	V
		$I_F = -5A, V_{GS} = 0V$	P			-1	
Diode Reverse Recovery Time	t_{rr}	$I_F = 7A, di_F/dt = 100A / \mu S$ $I_F = -5A, di_F/dt = 100A / \mu S$	N		13		nS
			P		13		
Diode Reverse Recovery Charge	Q_{rr}		N		4		nC
			P		5		

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

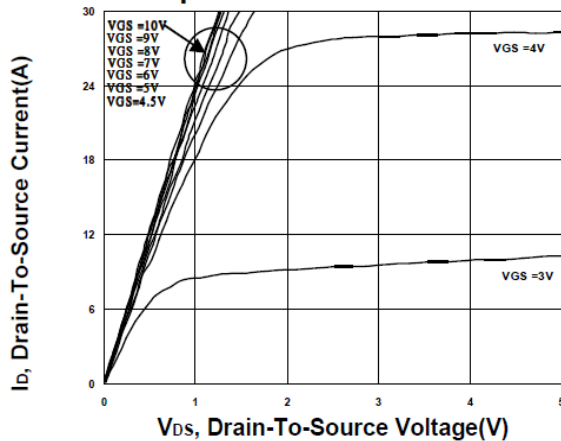
²Independent of operating temperature.

PZ5203QV

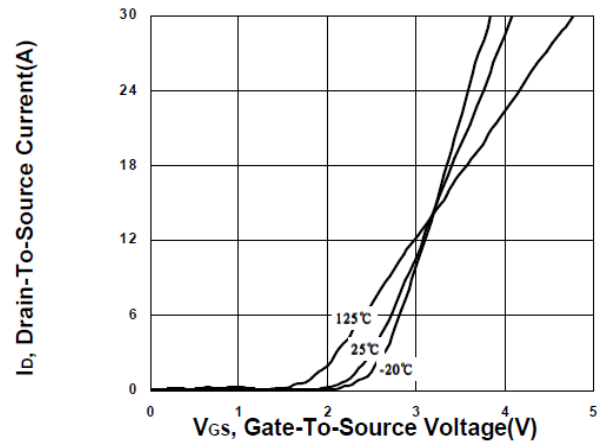
N&P-Channel Enhancement Mode MOSFET

N-CHANNEL

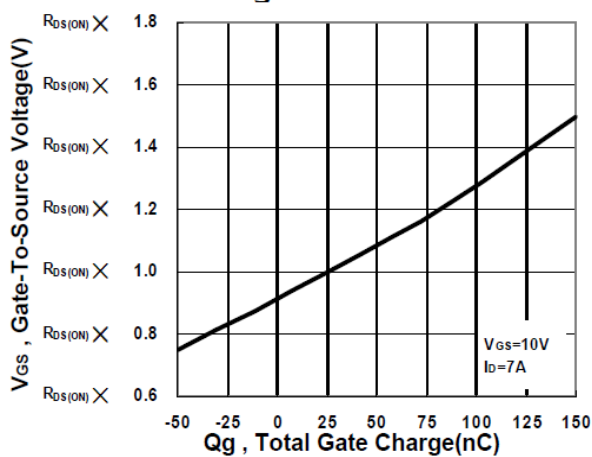
Output Characteristics



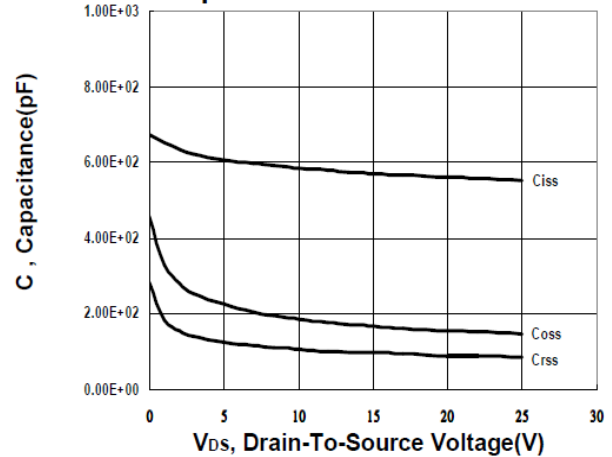
Transfer Characteristics



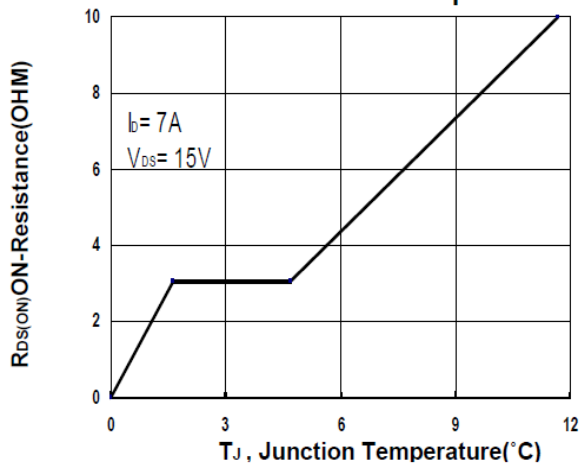
Gate charge Characteristics



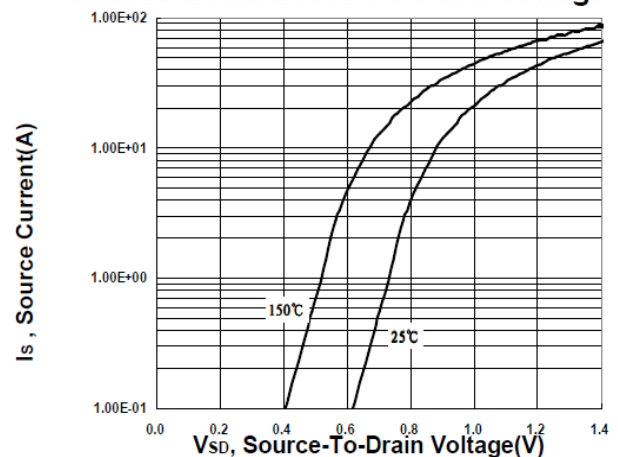
Capacitance Characteristic



On-Resistance VS Temperature



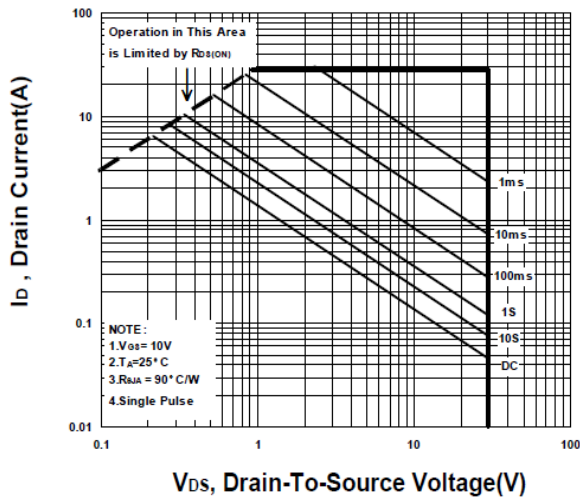
Source-Drain Diode Forward Voltage



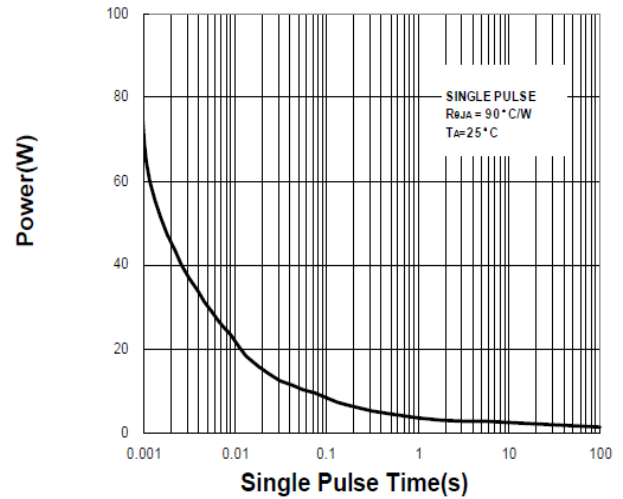
PZ5203QV

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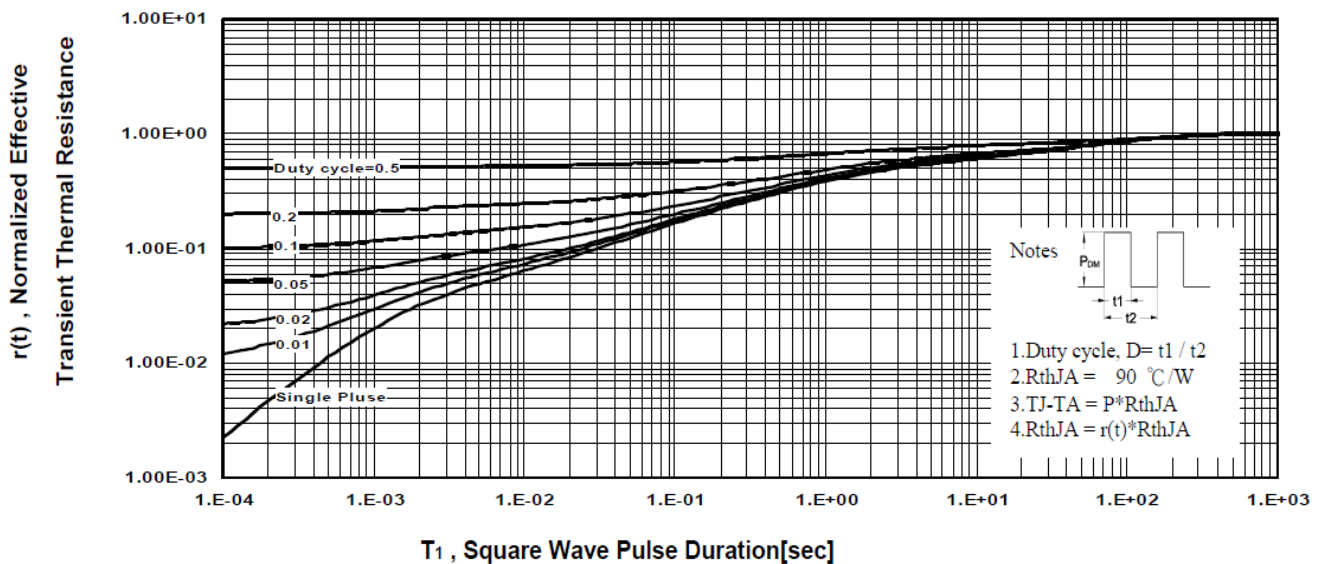
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

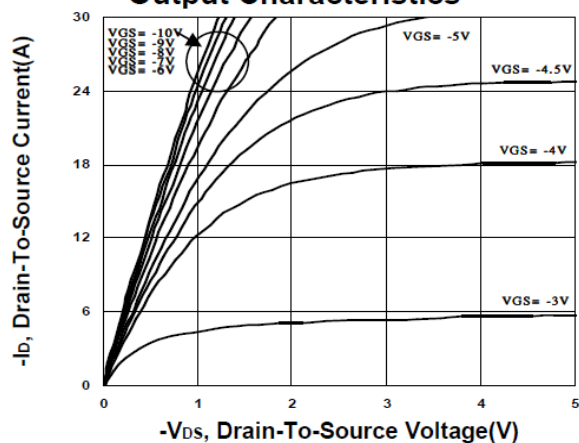


PZ5203QV

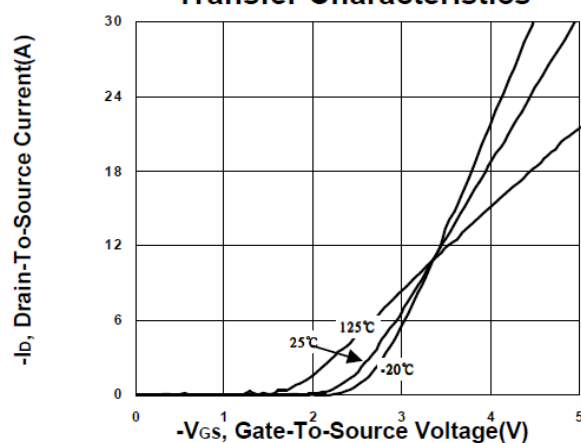
N&P-Channel Enhancement Mode MOSFET

P-CHANNEL

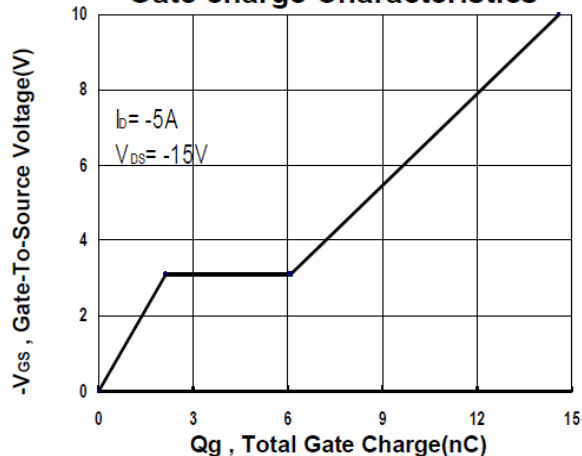
Output Characteristics



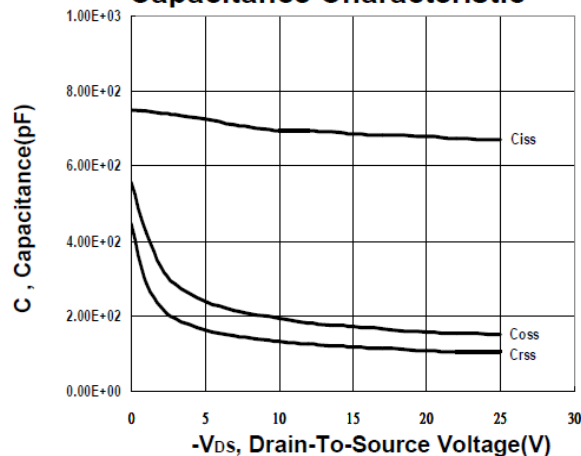
Transfer Characteristics



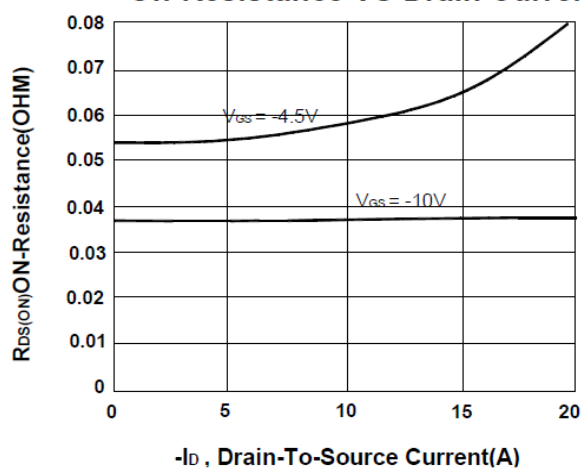
Gate charge Characteristics



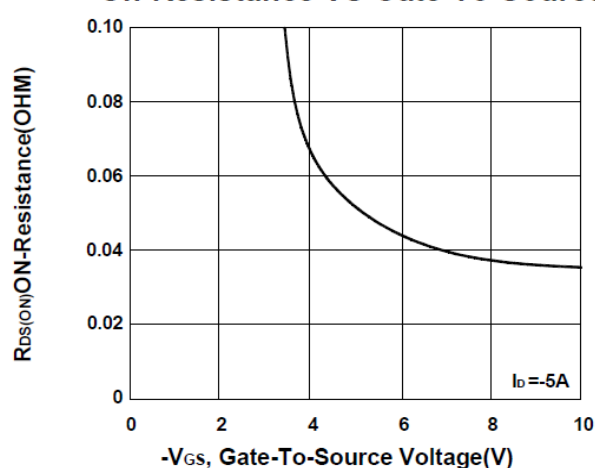
Capacitance Characteristic



On-Resistance VS Drain Current



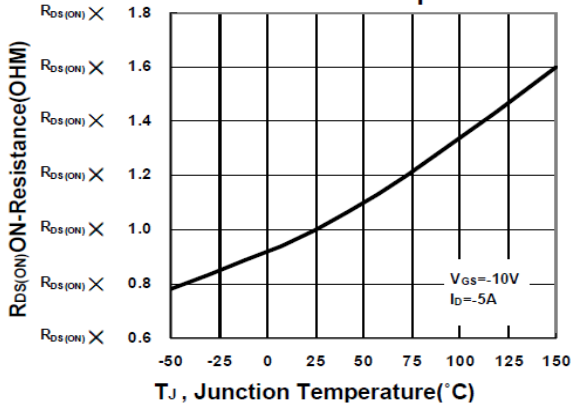
On-Resistance VS Gate-To-Source



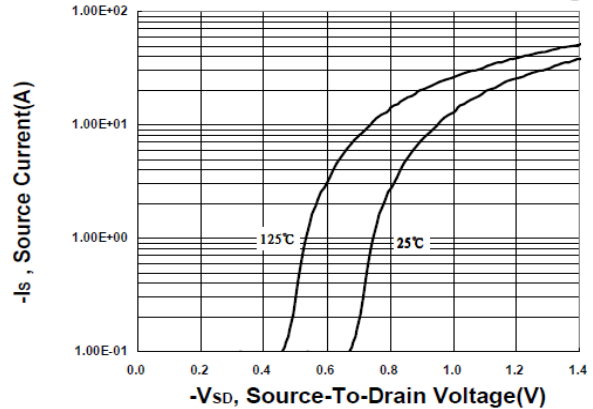
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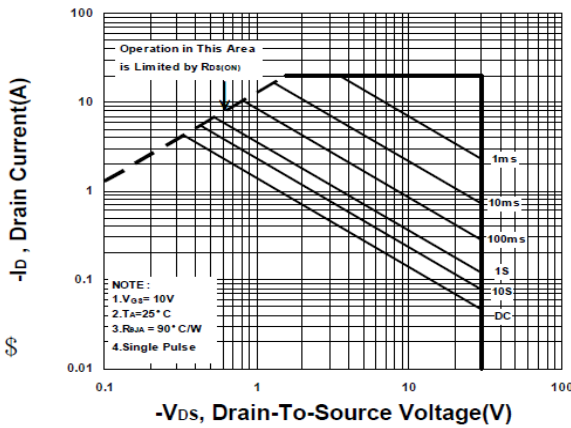
On-Resistance VS Temperature



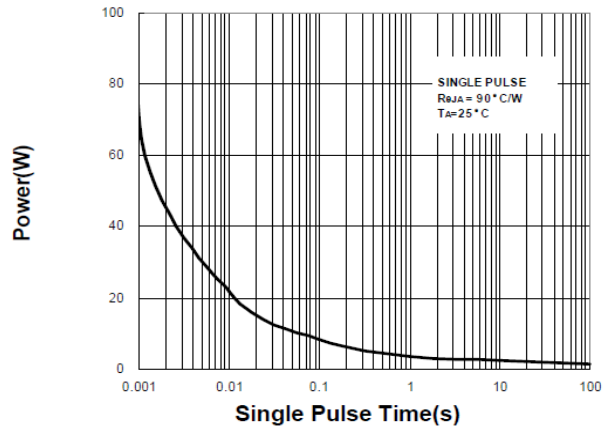
Source-Drain Diode Forward Voltage



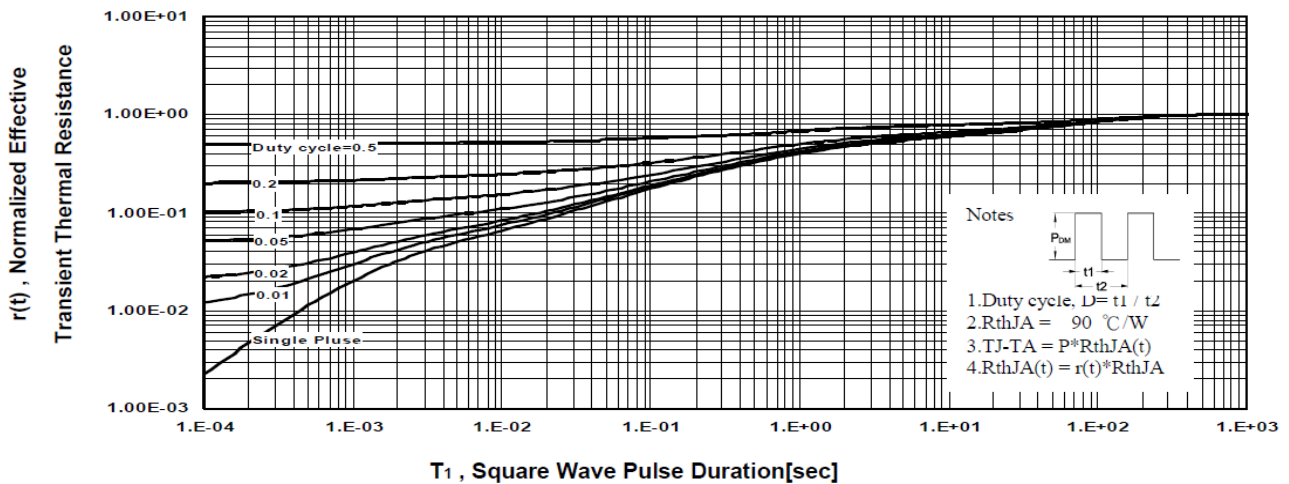
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



PZ5203QV

N&P-Channel Enhancement Mode MOSFET

Package Dimension

SOP-8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				

