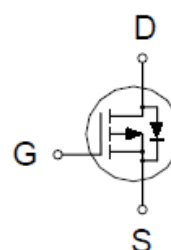
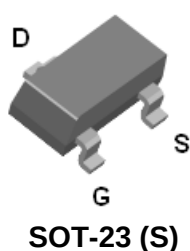


PM513BA

P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-20V	100m Ω @ $V_{GS} = -4.5V$	-3A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	-3	A
	$T_A = 70\text{ }^{\circ}\text{C}$		-2.4	
Pulsed Drain Current ¹		I_{DM}	-20	
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	0.9	W
	$T_A = 70\text{ }^{\circ}\text{C}$		0.6	
Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$R_{\theta JA}$		130	$^{\circ}\text{C} / \text{W}$

¹limited 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 $T_A=25^{\circ}\text{C}$

PM513BA

P-Channel Enhancement Mode MOSFET

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	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.3	-0.5	-1	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16V, V _{GS} = 0V			-1	μA
		V _{DS} = -10V, V _{GS} = 0V , T _J = 70 °C			-10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = -5V, V _{GS} = -4.5V	-20			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -1.8V, I _D = -1A		140	190	mΩ
		V _{GS} = -2.5V, I _D = -2A		109	130	
		V _{GS} = -4.5V, I _D = -2.5A		80	100	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -2.5A		8.1		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -10V, f = 1MHz		434		pF
Output Capacitance	C _{oss}			56		
Reverse Transfer Capacitance	C _{rss}			54		
Total Gate Charge ²	Q _g	V _{DS} = -10V, V _{GS} = -4.5V, I _D = -2.5A		6.3		nC
Gate-Source Charge ²	Q _{gs}			2		
Gate-Drain Charge ²	Q _{gd}			0.7		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -10V I _D ≅ -2.5A, V _{GS} =-4.5V, R _{GEN} = 6Ω		9.4		nS
Rise Time ²	t _r			38		
Turn-Off Delay Time ²	t _{d(off)}			60		
Fall Time ²	t _f			66		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICE (T _J = 25 °C)						
Continuous Current	I _S				-3	A
Forward Voltage ¹	V _{SD}	I _F = -2.5A, V _{GS} = 0V			-1.2	V
Reverse Recovery Time	t _{rr}	I _F = -2.5A, dI _F /dt=100A/μS		11		nS
Reverse Recovery Charge	Q _{rr}			3		nC

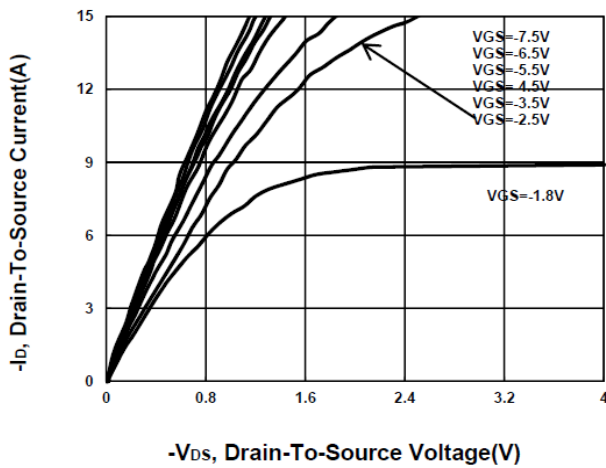
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

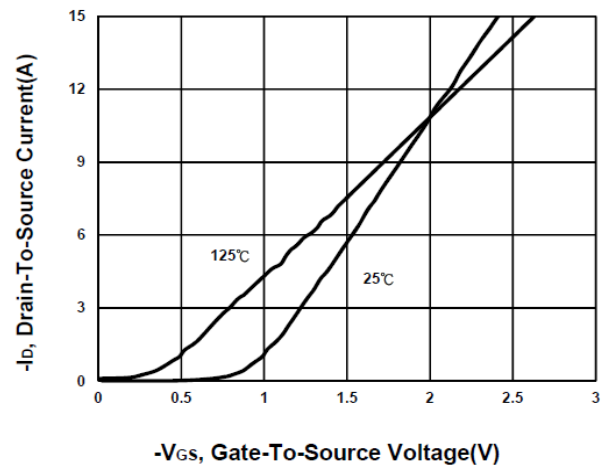
PM513BA

P-Channel Enhancement Mode MOSFET

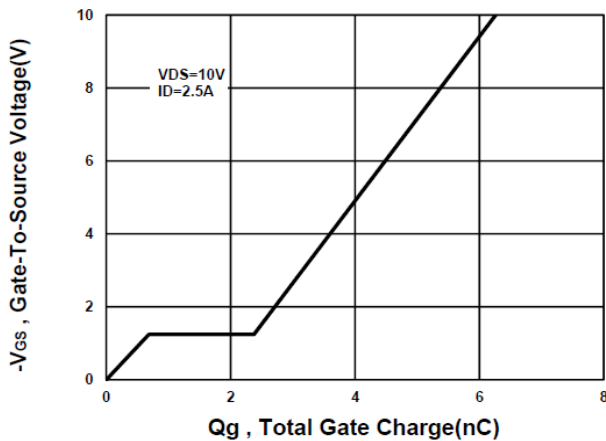
Output Characteristics



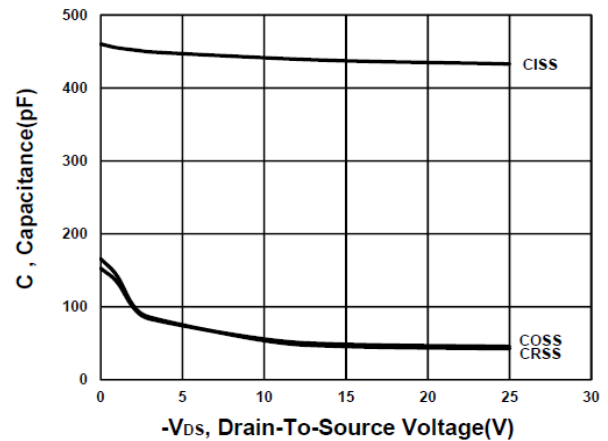
Transfer Characteristics



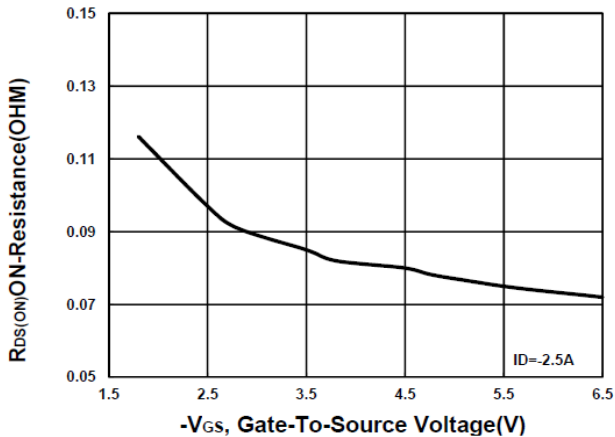
Gate charge Characteristics



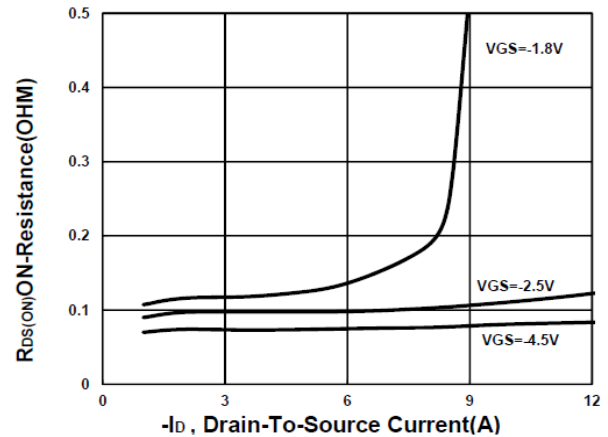
Capacitance Characteristic



On-Resistance VS Gate-To-Source



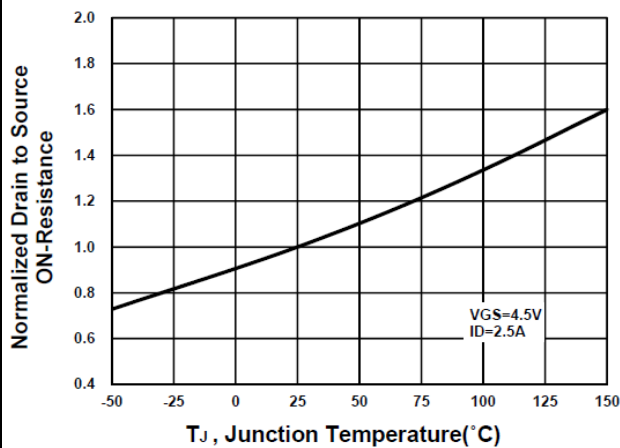
On-Resistance VS Drain Current



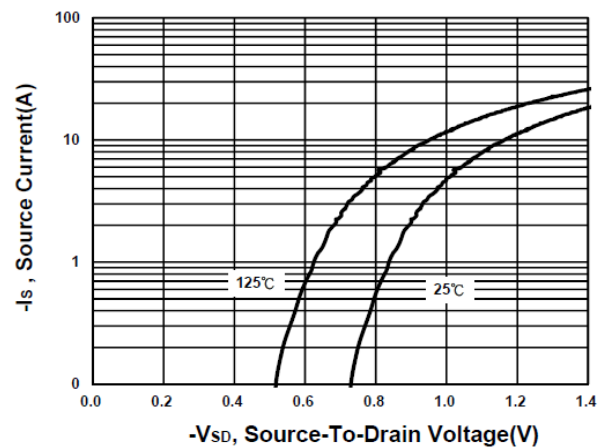
PM513BA

P-Channel Enhancement Mode MOSFET

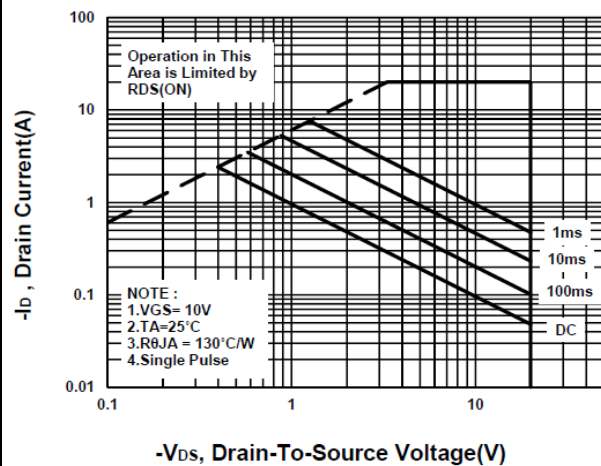
On-Resistance VS Temperature



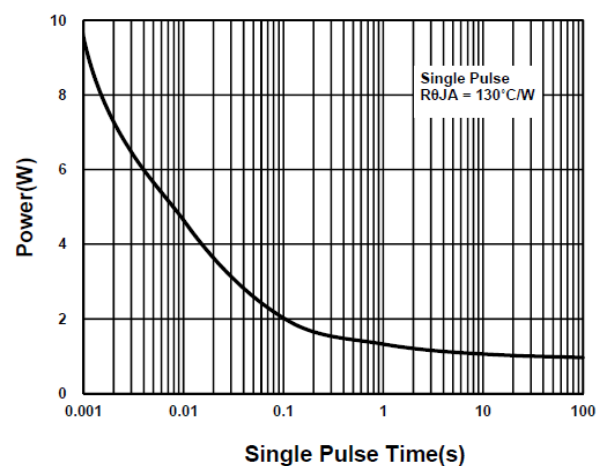
Source-Drain Diode Forward Voltage



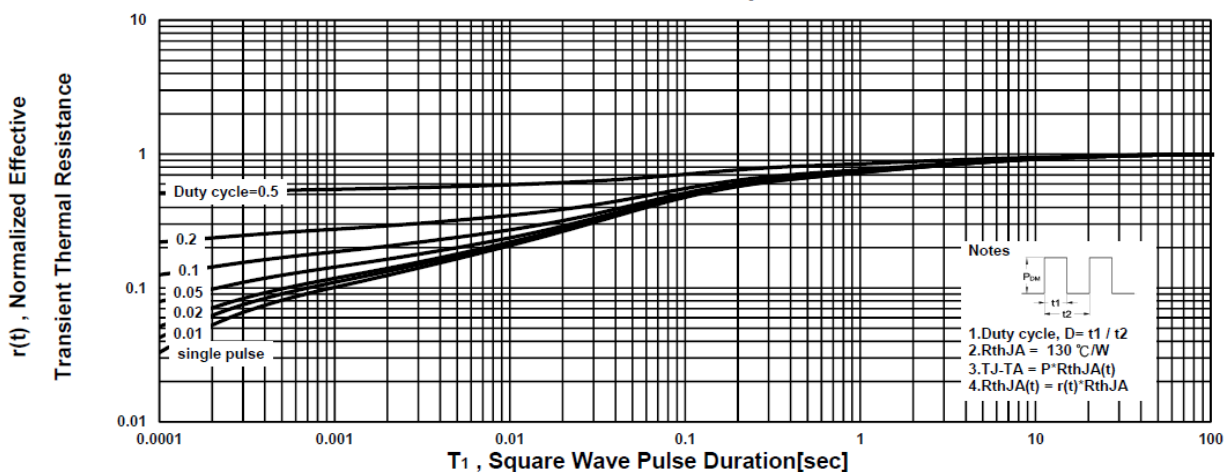
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



PM513BA

P-Channel Enhancement Mode MOSFET

Package Dimension

SOT-23 (S) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.9		1	H	0.08		0.2
B	2.25		2.85	I	0.15		0.6
C	1.2		1.4				
D	2.8		3.04				
E	0.89		1.2				
F	0		0.1				
G	0.3		0.5				

