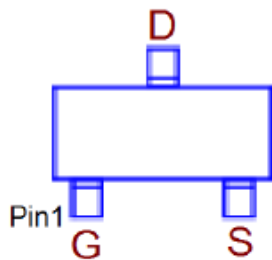


PZ513BA

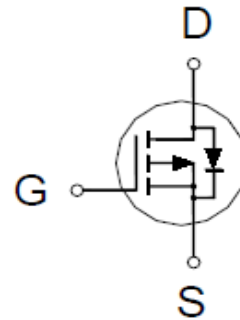
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-20V	115m Ω @ $V_{GS} = -4.5V$	-1.3A



SOT-323



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	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	-1.3	A
	$T_A = 70\text{ }^\circ\text{C}$		-1	
Pulsed Drain Current ¹		I_{DM}	-10	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	0.3	W
	$T_A = 70\text{ }^\circ\text{C}$		0.2	
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	$R_{\theta JA}$		360	$^\circ\text{C} / \text{W}$

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 $T_A = 25^\circ\text{C}$.

PZ513BA

P-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS		
			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	-0.65	-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			
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -1.8V, I _D = -1A		141	190	mΩ		
		V _{GS} = -2.5V, I _D = -1A		116	130			
		V _{GS} = -4.5V, I _D = -1.3A		97	115			
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -1.3A		7		S		
DYNAMIC								
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -10V, f = 1MHz		414		pF		
Output Capacitance	C _{oss}			47				
Reverse Transfer Capacitance	C _{rss}			36				
Total Gate Charge ²	Q _g (V _{GS} =-4.5V)	V _{DS} = -10V, I _D = -1.3A, V _{GS} = -4.5V		4.9		nC		
	Q _g (V _{GS} =-2.5V)			3				
Gate-Source Charge ²	Q _{gs}			0.6				
Gate-Drain Charge ²	Q _{gd}			1.3				
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = -10V, I _D ≅ -1.3A, 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 CHARACTERISTICS (T_J = 25 °C)								
Continuous Current	I _S				-0.25	A		
Forward Voltage ¹	V _{SD}	I _F = -1.3A, V _{GS} = 0V			-1.2	V		
Reverse Recovery Time	t _{rr}	I _F = -1.3A, dI _F /dt = 100A /μS		8		nS		
Reverse Recovery Charge	Q _{rr}			3		nC		

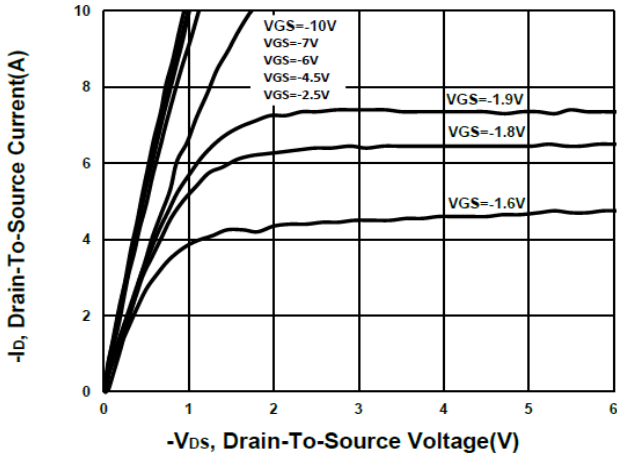
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

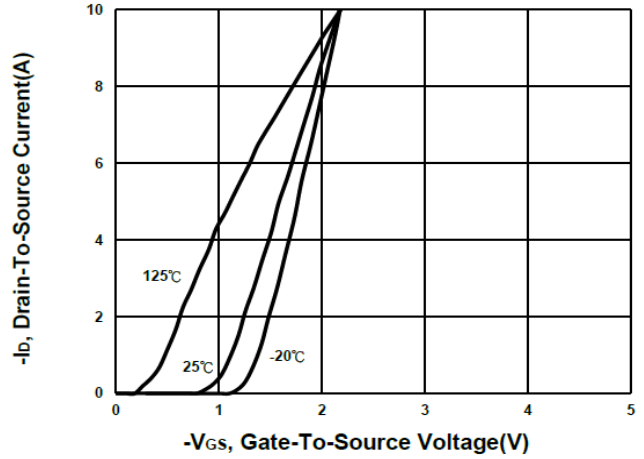
PZ513BA

P-Channel Enhancement Mode MOSFET

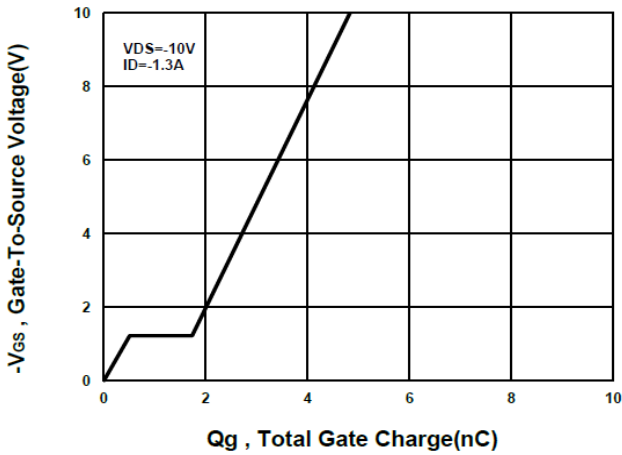
Output Characteristics



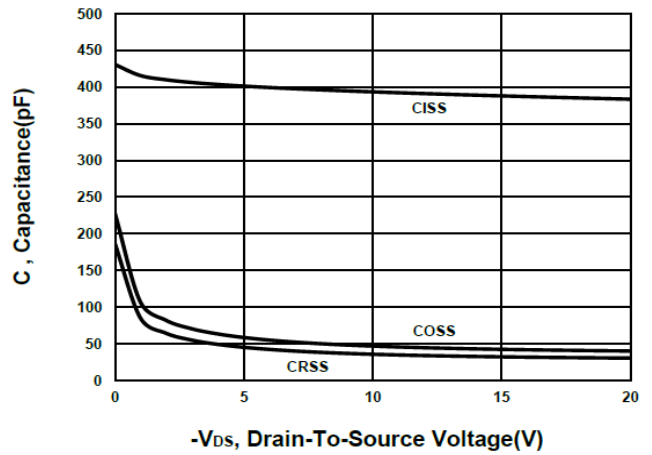
Transfer Characteristics



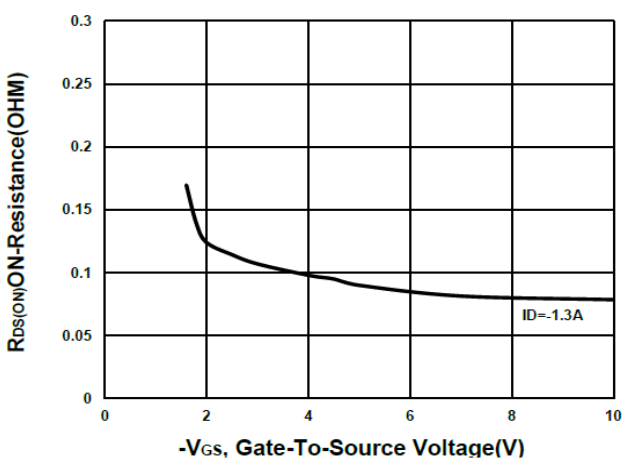
Gate charge Characteristics



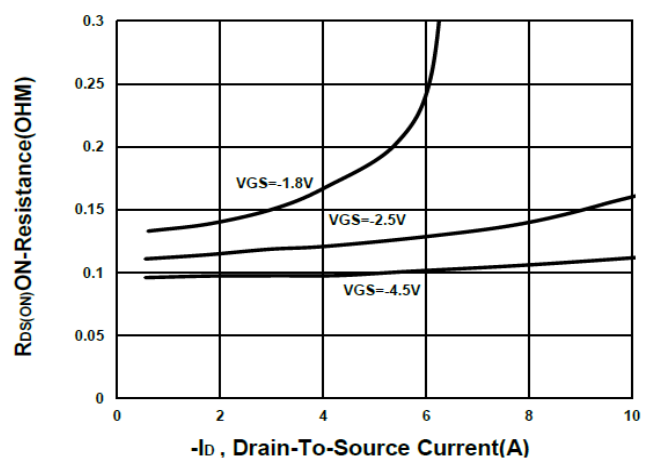
Capacitance Characteristic



On-Resistance VS Gate-To-Source



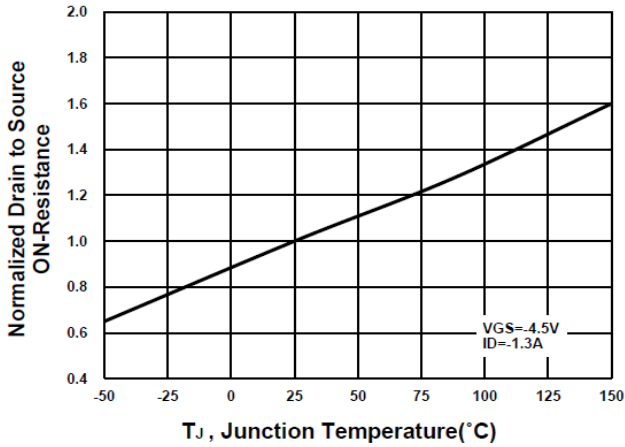
On-Resistance VS Drain Current



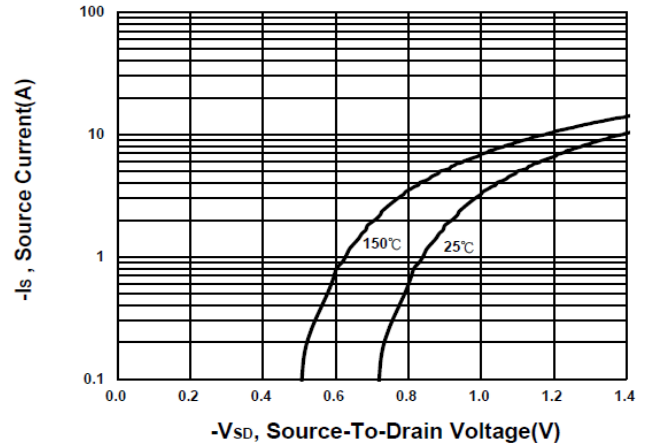
PZ513BA

P-Channel Enhancement Mode MOSFET

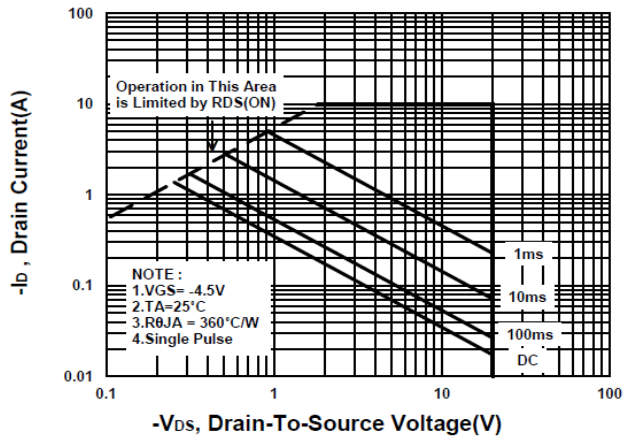
On-Resistance VS Temperature



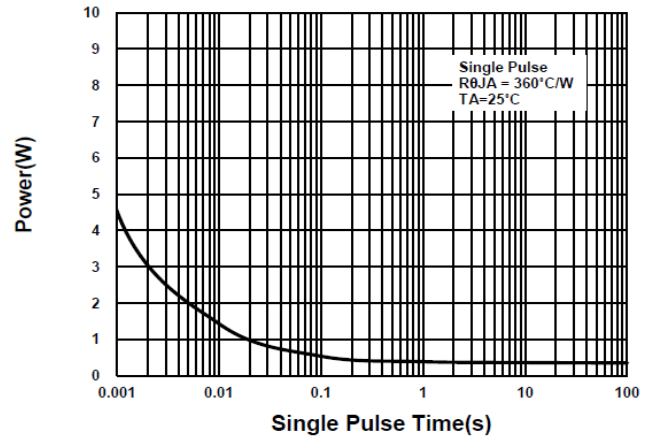
Source-Drain Diode Forward Voltage



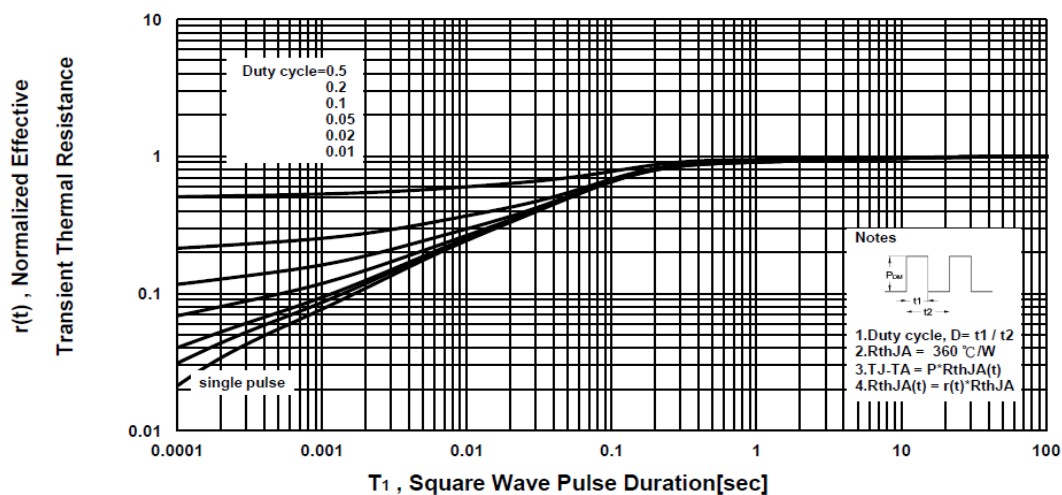
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



PZ513BA
P-Channel Enhancement Mode MOSFET

Package Dimension

SOT-323 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.65		H	0.08		0.25
B	1.80		2.45	I	0.15		0.46
C	1.15		1.35	J			
D	1.80		2.20	K			
E	0.80		1.00	L			
F	0.00		0.10	M			
G	0.20		0.40	N			

