Prisemi®

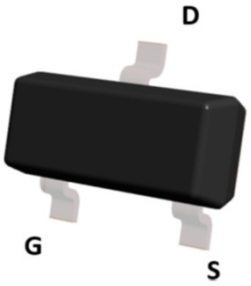
PNMT100V2

N-Channel MOSFET

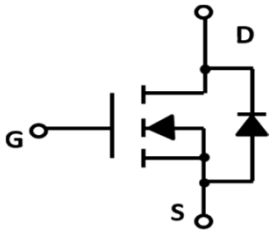
Description

The MOSFET provide the best combination of fast switching , low on-resistance and cost-effectiveness.

- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Low input Capacitance
- Fast Switching Speed
- Low Input / Output Leakage



Top View

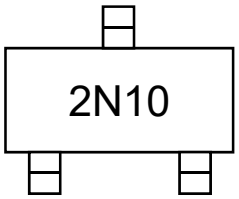


Circuit Diagram

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
100	280@V_{GS} = 10V	2
	400@V_{GS} = 4.5V	

Mechanical Data

- SOT-23 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.



Marking (Top View)

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Drain-source Voltage	V_{DS}	100	V
Gate-source Voltage	V_{GS}	±20	V
Drain Current	I_D	2.0	A
Continuous Source-Drain Diode Current	I_S	1.1	A
Pulsed Source Current	I_{SM}	7.0	A
Total Power Dissipation	P_D	400	mW
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	312.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃

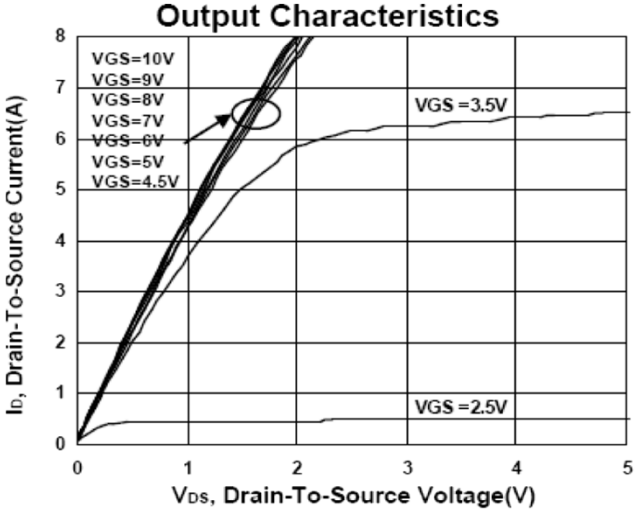
Electrical characteristics per line@25℃ (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250μA	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 80V,V_{GS} = 0V	-	-	1.0	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.8	0.95	1.6	V
Static Drain-Source On-Resistance[1)]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 1.5A	-	220	280	mΩ
		V_{GS} = 4.5V, I_D = 1A	-	300	400	
Forward Transconductance[1)]	g_{fs}	V_{DS} = 50V, I_D = 1.6A	5.7	-	-	S
Diode Forward Voltage	V_{SD}	I_S = 1.1A,V_{GS} = 0V	-	-	1.3	V
Dynamic Parameters						
Input Capacitance[2)]	C_{iss}	V_{DS} = 25V,V_{GS} = 0V, f = 1MHz	-	290	-	pF
Output Capacitance[2)]	C_{oss}		-	27	-	
Reverse Transfer Capacitance[2)]	C_{rss}		-	13	-	
Total Gate Charge	Q_g	V_{DS}= 50V,I_D= 1.6A, V_{GS}= 4.5V	-	2.5	-	nC
Gate-Source Charge	Q_{gs}		-	0.5	-	
Gate-Drain Charge	Q_{gd}		-	1.2	-	
Switching Parameters[2)]						
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 50V, V_{GS} = 4.5V, R_G = 6.8Ω,I_D = 1A	-	2.2	-	ns
Turn-on Rise Time	t_r		-	2.1	-	
Turn-Off Delay Time	$t_{d(off)}$		-	9.0	-	
Turn-Off Fall Time	t_f		-	3.6	-	

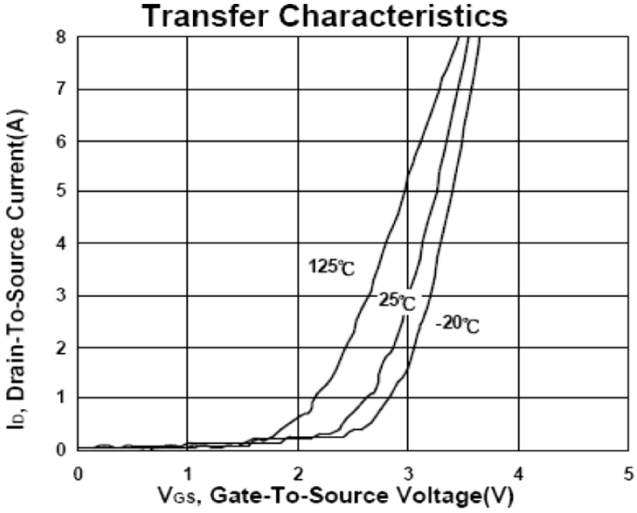
Notes:
1. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
2. These parameters have no way to verify.

Typical Characteristics

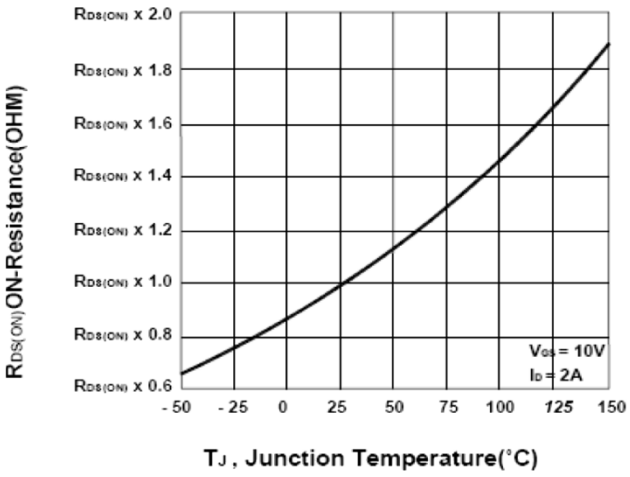
Output Characteristics



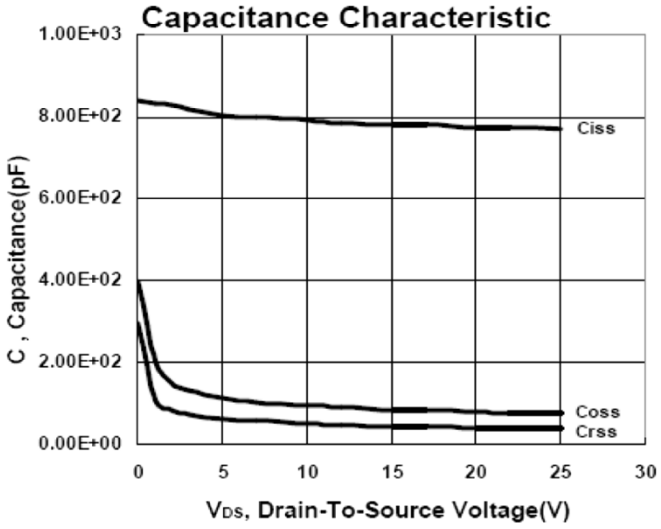
Transfer Characteristics



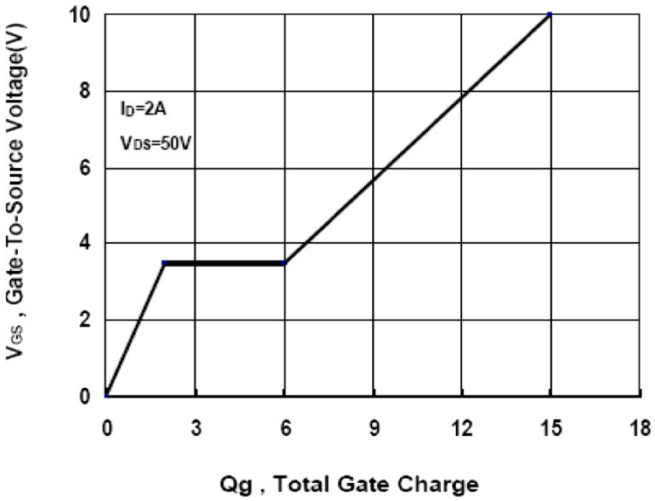
On-Resistance VS Temperature



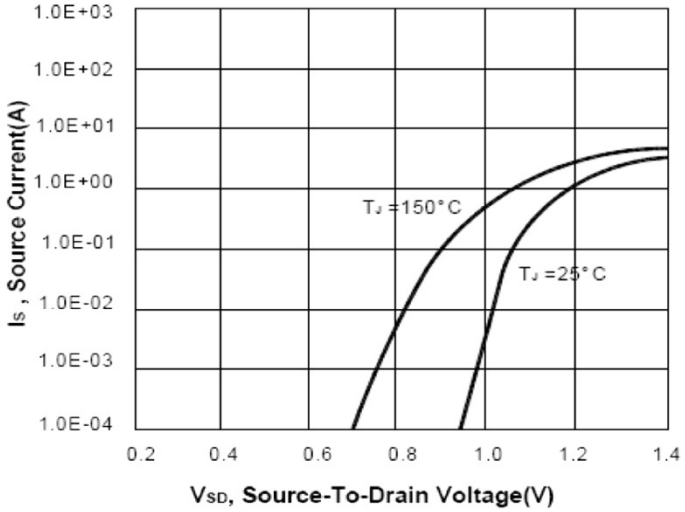
Capacitance Characteristic



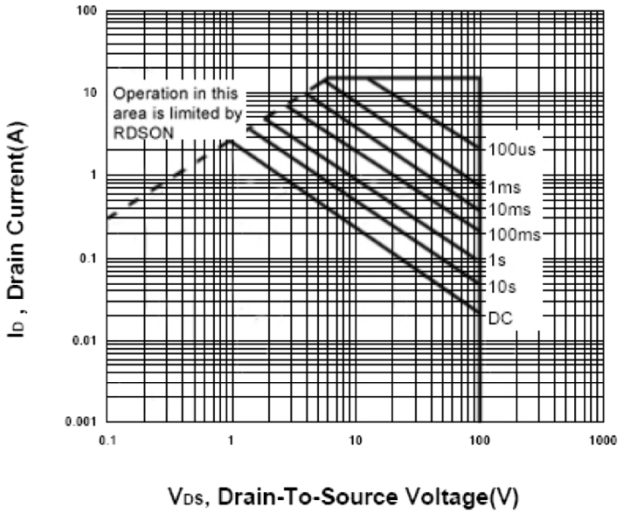
Gate charge Characteristics



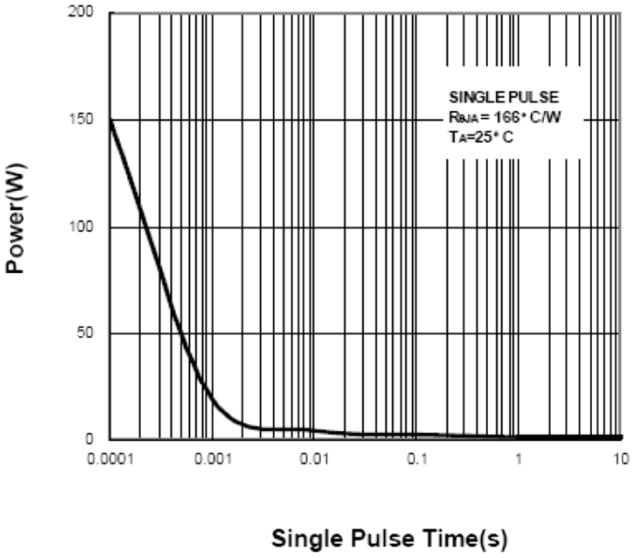
Source-Drain Diode Forward Voltage



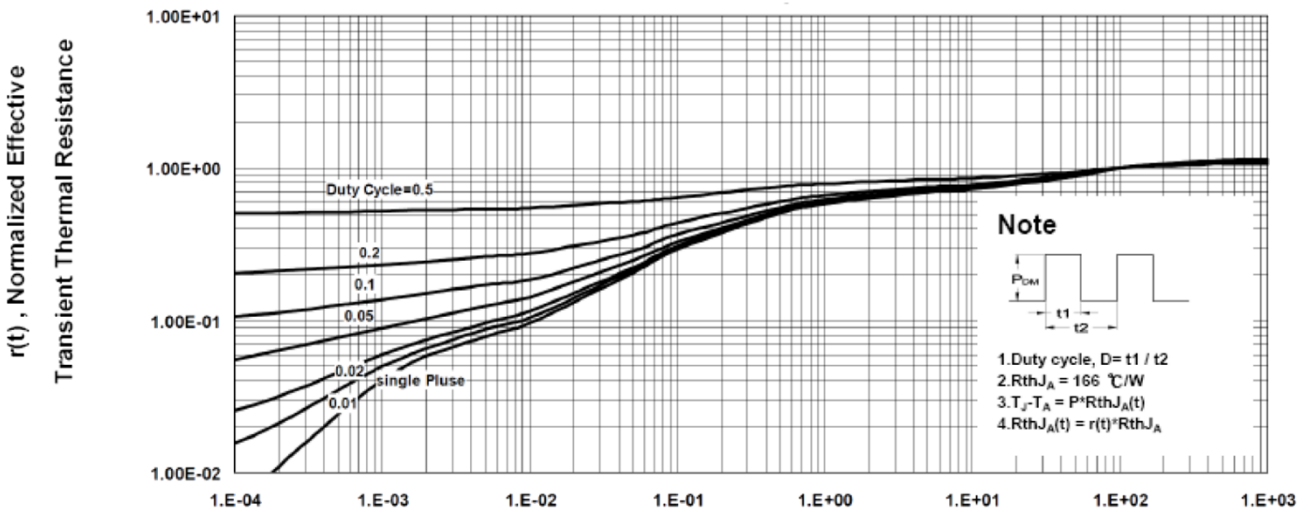
Safe Operating Area



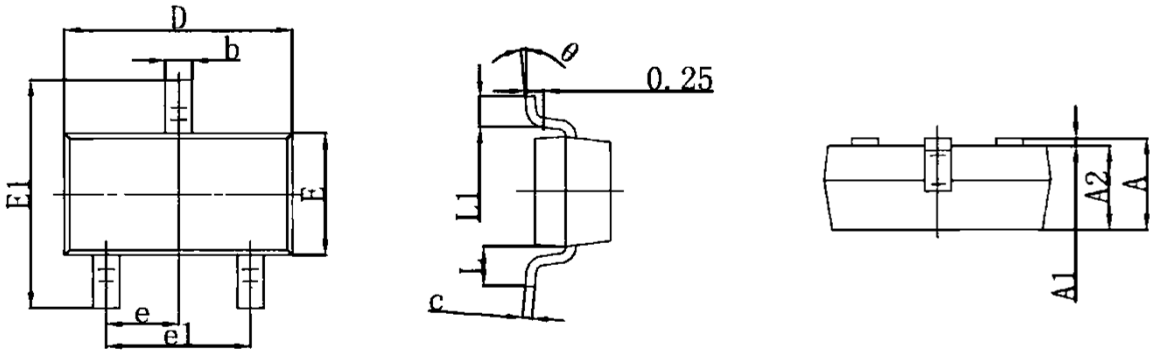
Single Pulse Maximum Power Dissipation



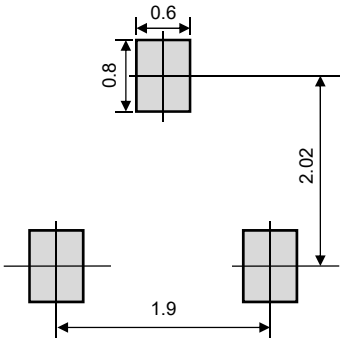
Transient Thermal Response Curve



Product Dimension (SOT-23)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	-	1.50	-	0.059
A1	0.04	0.15	0.002	0.006
A2	-	1.35	-	0.053
b	0.30	0.50	0.012	0.020
c	0.08	0.21	0.003	0.008
D	2.72	3.12	0.107	0.123
E	1.10	1.50	0.043	0.059
E1	2.10	2.64	0.083	0.104
e	0.95 Typ.		0.037 Typ.	
e1	1.80	2.00	0.071	0.079
L	0.65 Ref.		0.026 Ref.	
L1	0.20	0.60	0.008	0.024
θ	0°	8°	0°	8°



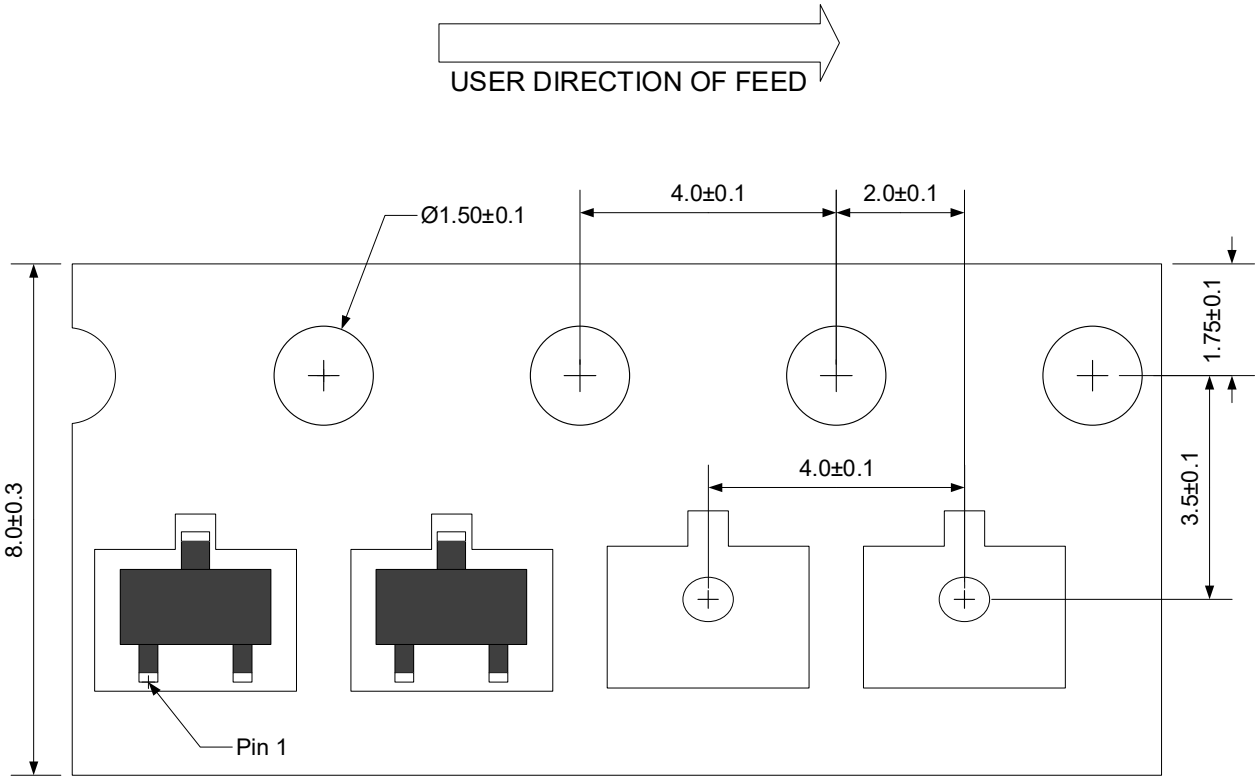
Suggested PCB Layout

Unit: mm

Ordering information

Device	Package	Reel	Shipping
PNMT100V2	SOT-23	7"	3000 / Tape & Reel

Load with information



Unit:mm

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