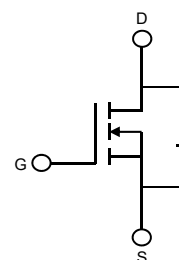
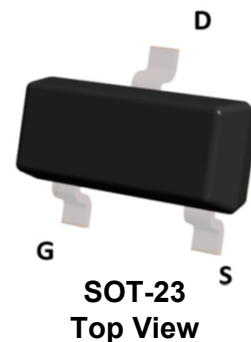


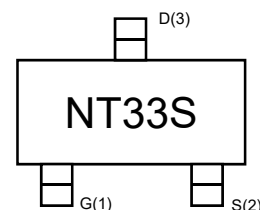
Description

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



Circuit Diagram



Marking (Top View)

Applications

- Battery operated systems
- Solid-state relays
- Direct logic-level interface: TTL/CMOS

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-source Voltage	V_{DS}	30	V
Gate-source Voltage	V_{GS}	± 12	V
Drain Current	I_D	3.0	A
Pulsed Drain Current	I_{DM}	15	A
Total Power Dissipation ¹⁾	P_D	0.8	W
Avalanche Energy, Single Pulse ²⁾	E_{AS}	9.25	mJ
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

Note

1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
2. Test Condition : $V_{DS}=30V, V_{GS}=10V, L=0.1mH$.

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V	-	-	1.0	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.6	-	1.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D = 3.6A	-	45	54	mΩ
		V _{GS} = 4.5V, I _D = 2A	-	47	58	
		V _{GS} = 2.5V, I _D = 1A	-	60	70	
Diode Forward Voltage	V _{SD}	-	-	0.71	1.0	V
Maximum Body-Diode Continuous Current	I _S	-	-	-	2.0	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz	-	327	-	pF
Output Capacitance	C _{oss}		-	41	-	
Reverse Transfer Capacitance	C _{rss}		-	32	-	
Switching Parameters						
Turn-on Delay Time	t _{d(on)}	V _{DD} = 15V, I _D = 3A, V _{GEN} = 4.5V, R _{GEN} = 3Ω	-	2.5	-	ns
Turn-on Rise Time	t _r		-	7.3	-	
Turn-Off Delay Time	t _{d(off)}		-	12.9	-	
Turn-Off Fall Time	t _f		-	5.6	-	
Total Gate Charge	Q _g	V _{DS} = 15V, I _D = 3A, V _{GS} = 4.5V	-	3.9	-	nC
Gate-Source Charge	Q _{gs}		-	0.6	-	
Gate-Drain Charge	Q _{gd}		-	1.1	-	
Reverse recovery time	t _{rr}	I _F =5A, dI/dt=100A/μs	-	13.2	-	nS
Reverse recovery charge	Q _{rr}		-	3.3	-	nC
Reverse recovery current	I _{rrm}		-	0.41	-	A

Typical Characteristics

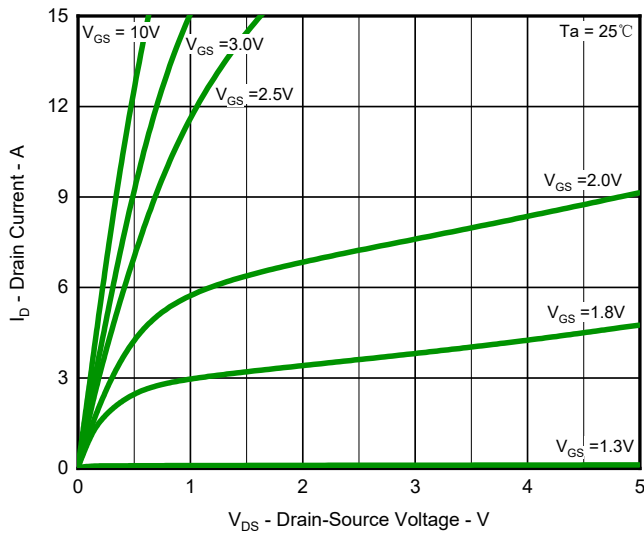


Fig.1 Output Characteristics

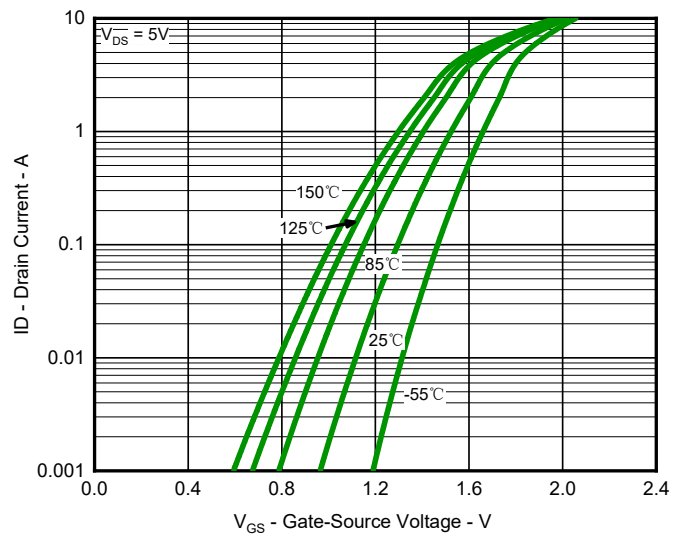


Fig.2 Typical Transfer Characteristic

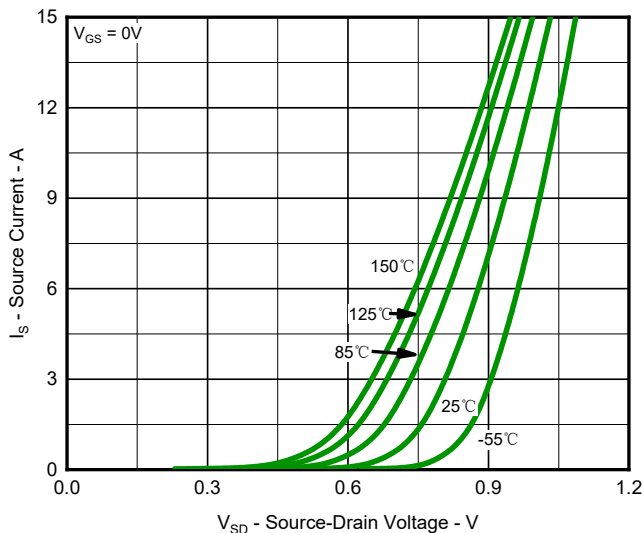


Fig.3 Diode Forward Voltage vs. Current

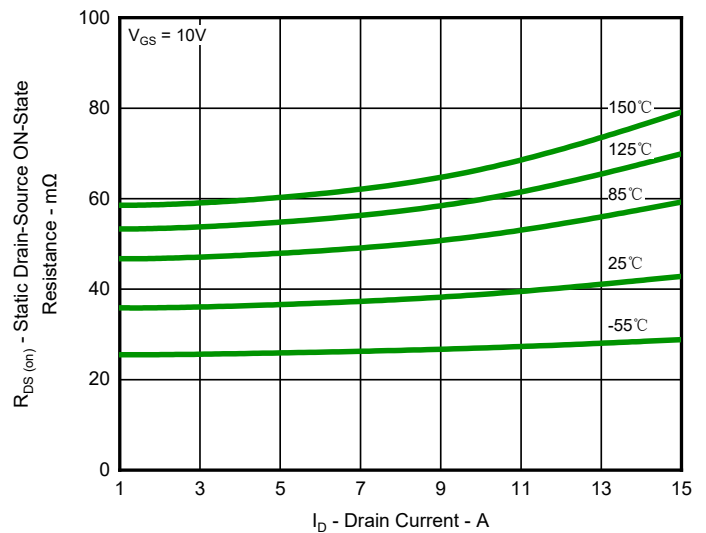


Fig.4 Typical On-Resistance vs Drain Current and Temperature

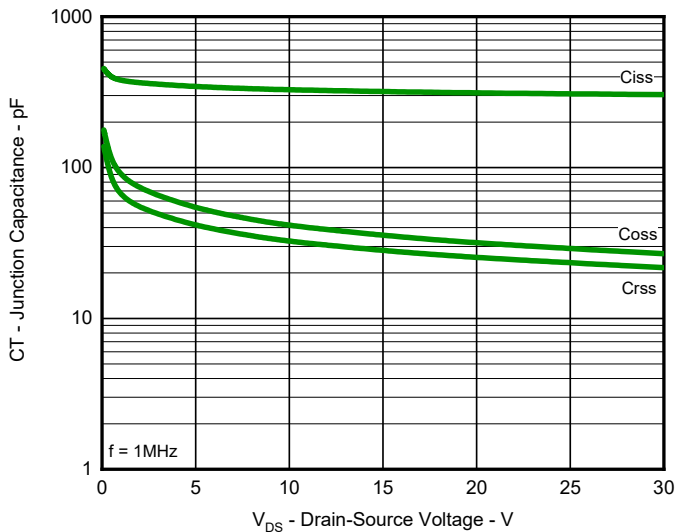


Fig.5 Typical Junction Capacitance

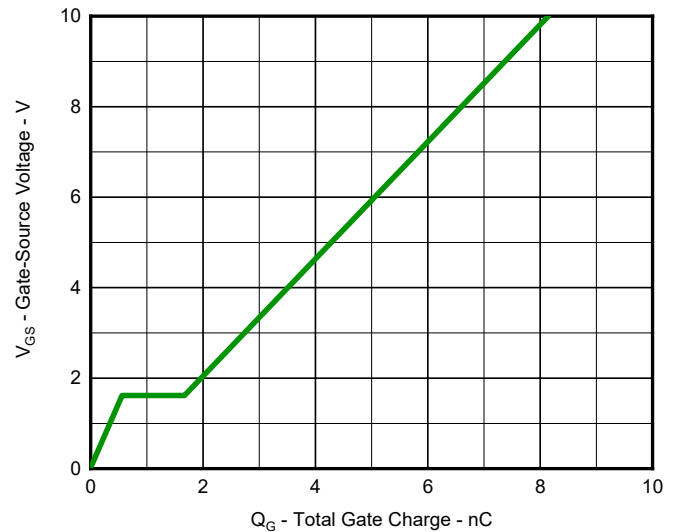


Fig.6 Gate Charge Characteristics

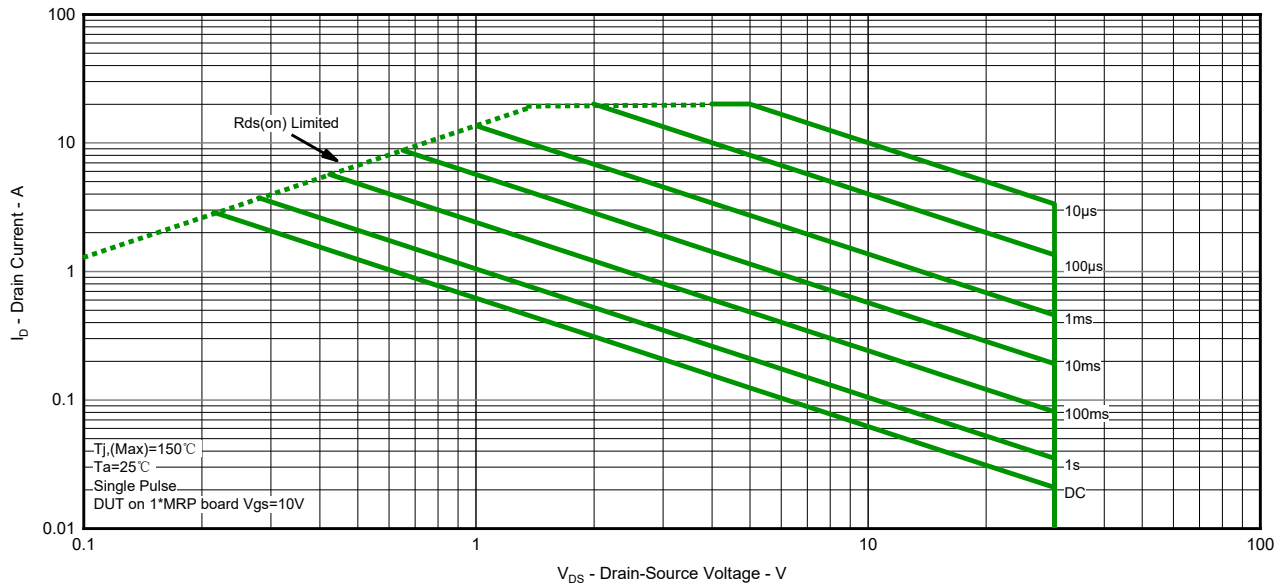


Fig.7 Safe Operation Area

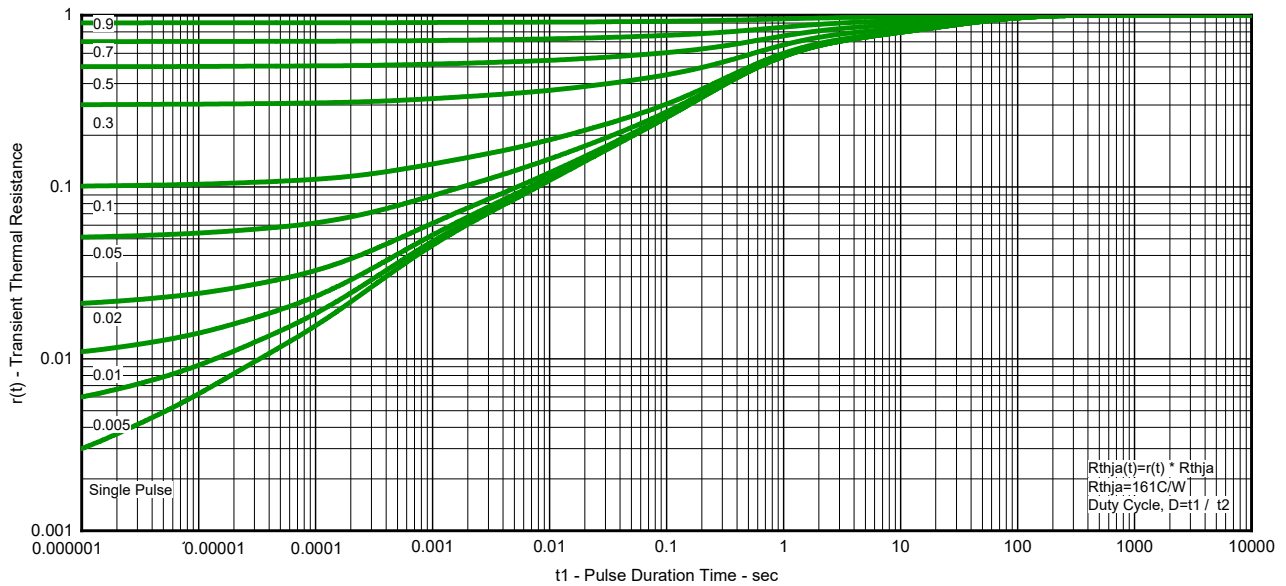
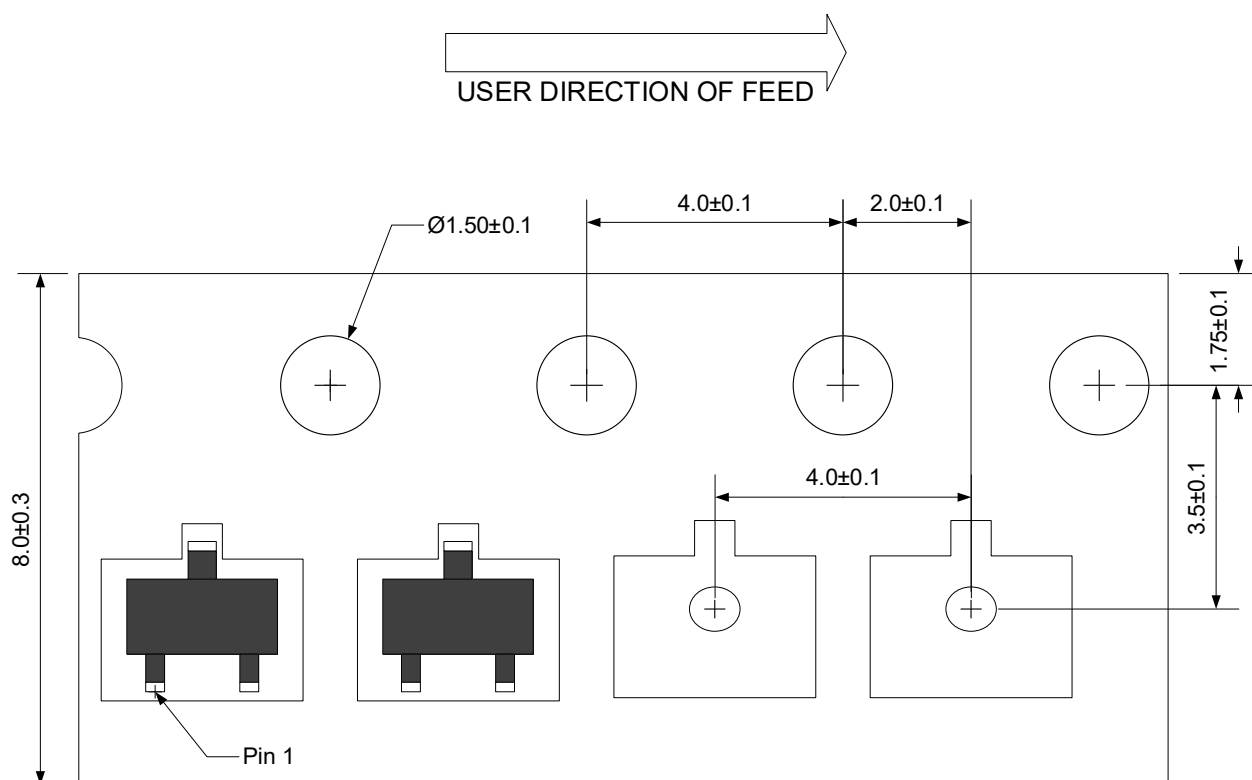


Fig.8 Transient Thermal Resistance

Ordering information

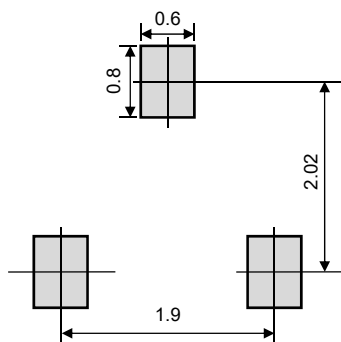
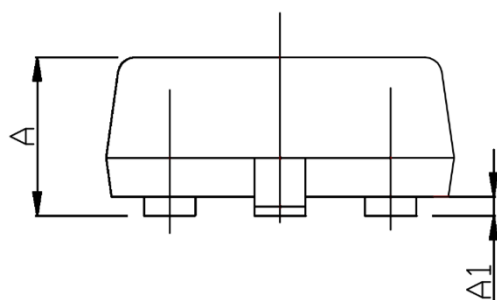
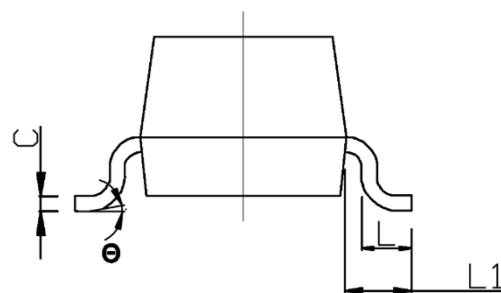
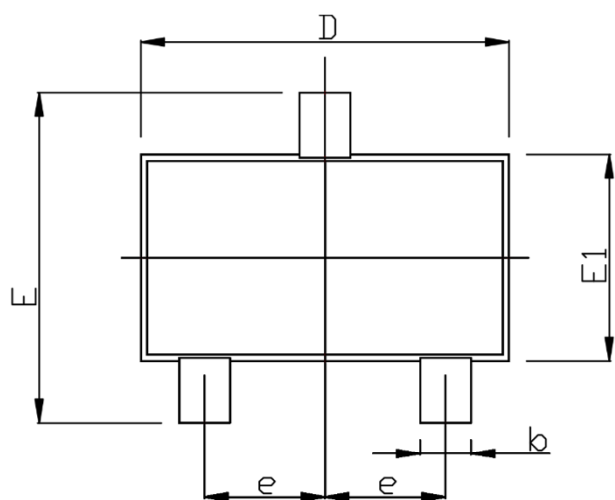
Device	Package	Reel	Shipping
PNMT30V3SA	SOT-23	7"	3000 / Tape & Reel

Load with information



Unit:mm

Product dimension (SOT-23)



Suggested PCB Layout

Unit:mm

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	-	1.35	-	0.053
A1	0.04	0.15	0.002	0.006
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	2.10	2.64	0.083	0.104
E1	1.10	1.50	0.043	0.059
e	0.95 BSC		0.037 BSC	
L	0.20	0.48	0.008	0.019
L1	0.50	0.60	0.020	0.024
θ	0°	8°	0°	8°

IMPORTANT NOTICE

 and **Prisemi**[®] are registered trademarks of **Prisemi Electronics Co., Ltd** (Prisemi), Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Website: <http://www.prisemi.com>

For additional information, please contact your local Sales Representative.

©Copyright 2009, Prisemi Electronics

 **Prisemi**[®] is a registered trademark of Prisemi Electronics.

All rights are reserved.