

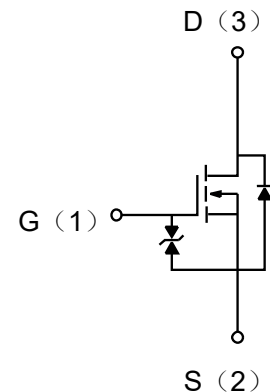
**Description**

PNM523T30V01 is designed for high speed switching applications

The enhancement mode MOS is extremely high density cell and low on-resistance.

**MOSFET Product Summary**

$V_{DS}(V)$	$R_{DS(on)}(\Omega)$	$V_{GS(th)}(V)$	$I_D(A)$
30	7@ $V_{GS}=2.5V, I_D=10mA$	0.5 to 1.5	0.1


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

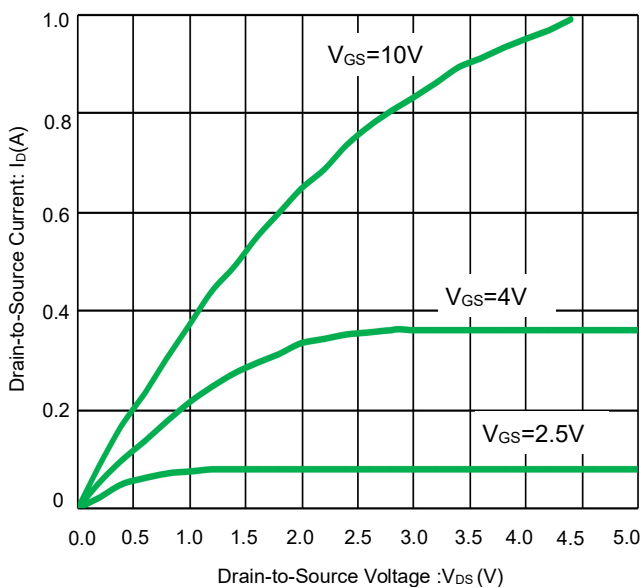
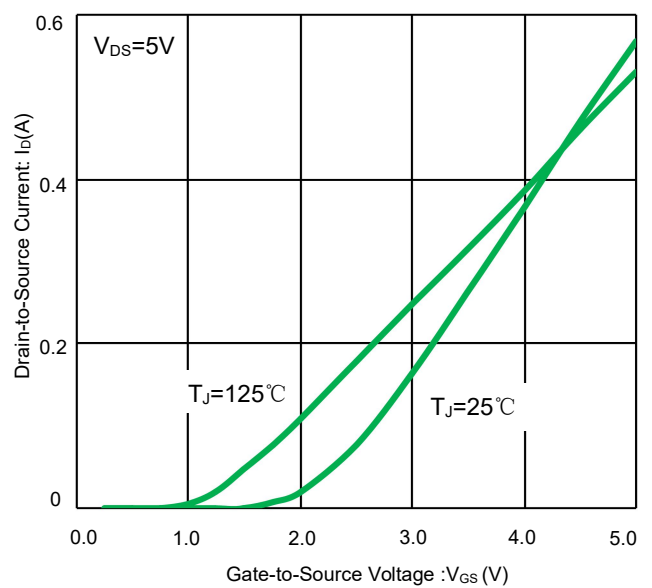
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$V_{DSS}$	$I_D = 10\mu A, V_{GS} = 0V$	30	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	$\pm 1$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	-	1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 2.5V, I_D = 1mA$		6.5	9	$\Omega$
		$V_{GS} = 2.5V, I_D = 10mA$		7	9	$\Omega$
		$V_{GS} = 4V, I_D = 10mA$	-	4	6	$\Omega$
		$V_{GS} = 10V, I_D = 100mA$	-	3	5	$\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = 5V, I_D = 0.1A$	-	0.2	-	S
Source-Drain Diode Forward Voltage	$V_{FSD}(V)$	$I_D = 100mA, V_{GS} = 0V$		0.75	1	V
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{GS} = 0V, V_{DS} = 25V,$ $f = 1MHz$	-	-	40	pF
Output Capacitance	$C_{OSS}$		-	-	10	pF
Reverse Transfer Capacitance	$C_{RSS}$		-	-	5	pF

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge	Qg	$V_{GS}=4.5V, V_{DS}=6V,$ $I_D=0.1A$			0.5	nC
Gate-Source Charge	Qgs				0.2	nC
Gate-Drain Charge	Qgd				0.2	nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=30V, V_{GS}=10V,$ $R_G=25\Omega, R_L=150\Omega, I_D=0.1A$	-	3		ns
Turn-On Rise Time	$t_r$		-	3.5		ns
Turn-Off Delay Time	$t_{d(off)}$		-	5		ns
Turn-On Fall Time	$t_f$		-	2.5		ns

**Absolute maximum rating@25°C**

Rating	Symbol	Value	Units
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	Continuous	$I_D$	0.10 A
	Pulsed	$I_D$	0.36 A
Total Power Dissipation	$T_A=25^\circ C$	$P_D$	150 mW

**Typical Characteristics**

**Fig 1. On-Region Characteristics**

**Fig 2. Transfer Characteristics**

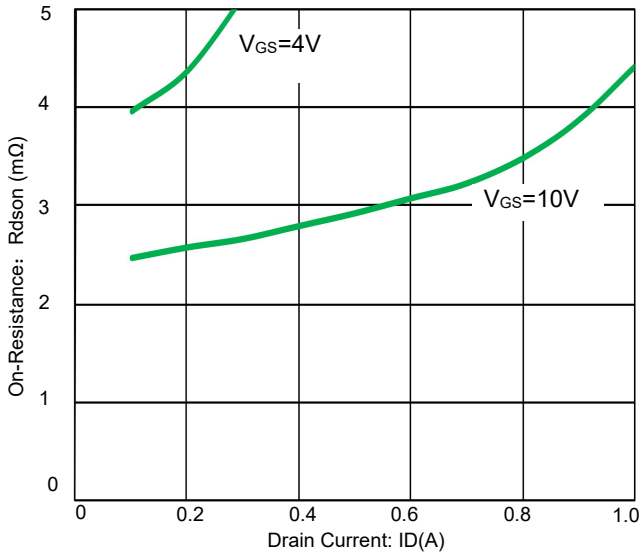


Fig 3. On-Resistance v.s. Drain Current and Gate Voltage

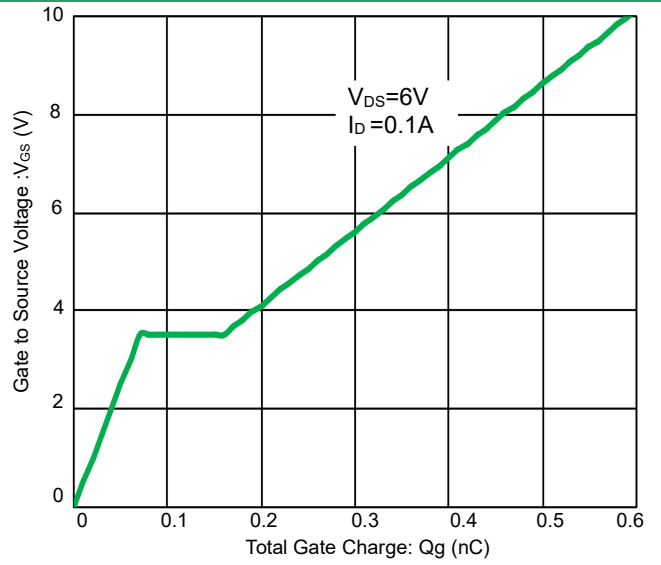


Fig 4. Gate Charge Characteristics

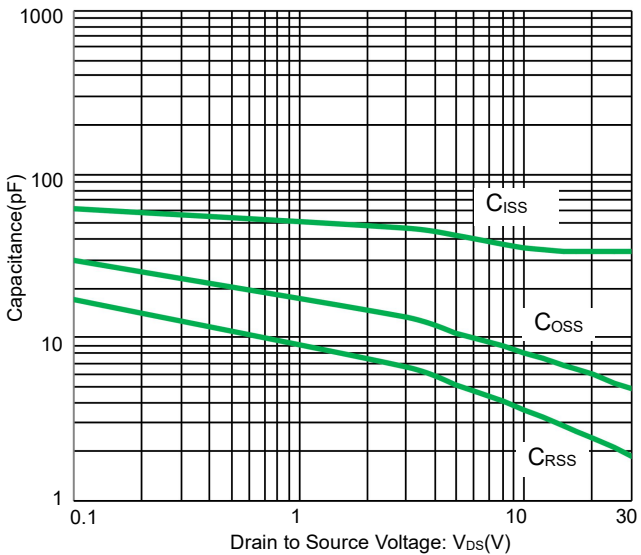


Fig 5. Capacitance Characteristic

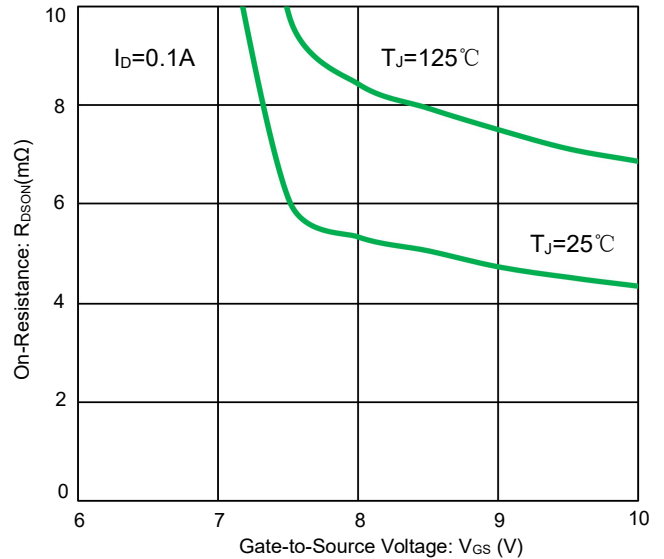


Fig 6. On-Resistance vs. Gate-to-Source Voltage

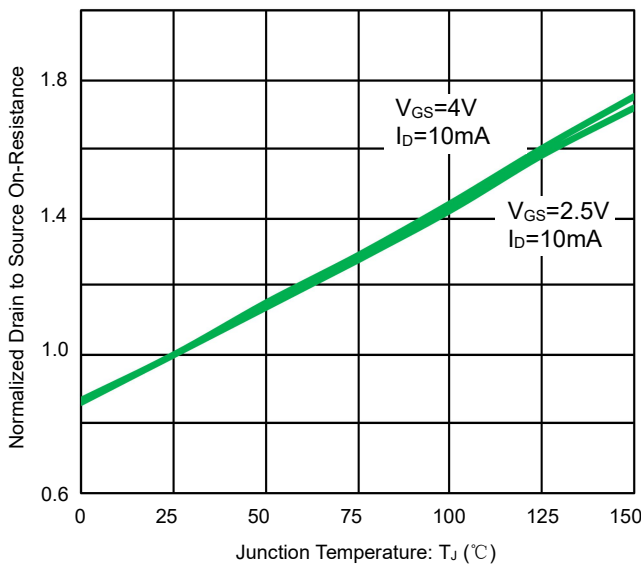


Fig 7. Normalized On-Resistance vs. Junction Temperature

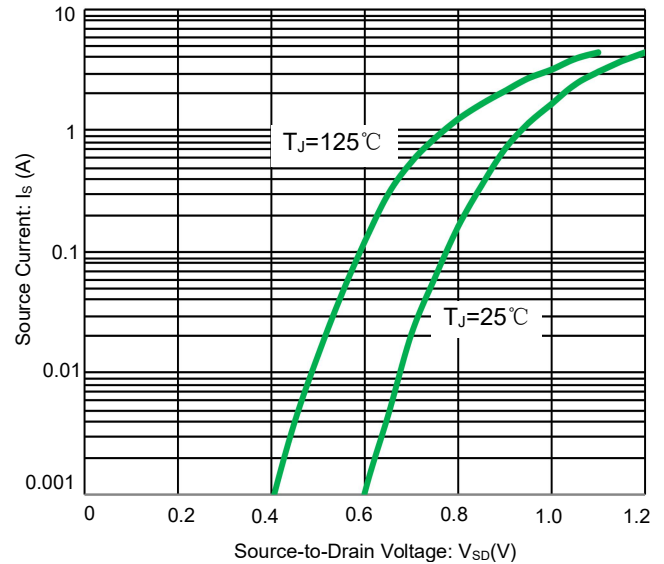
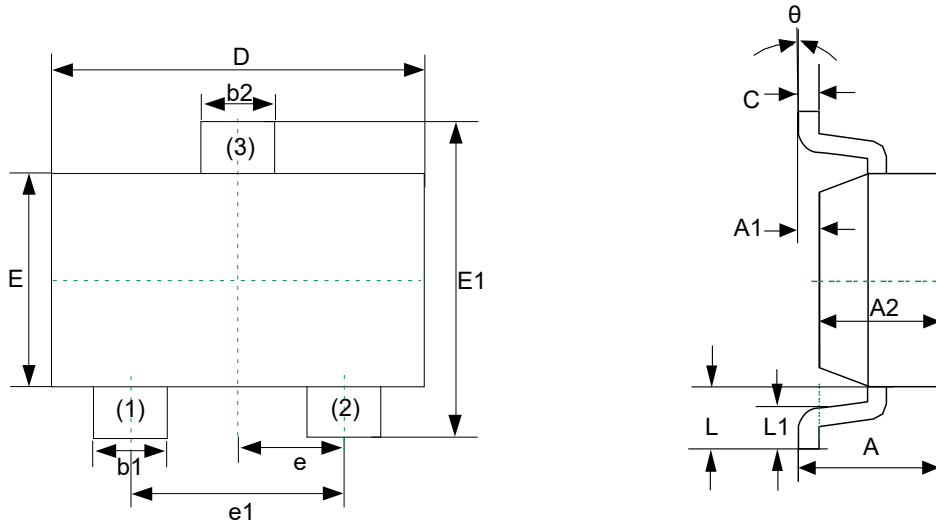
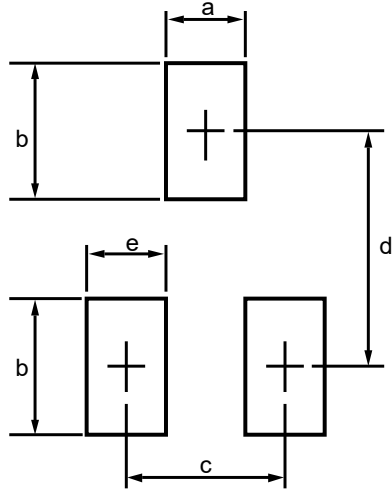


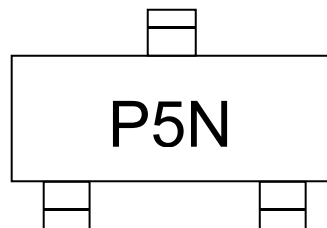
Fig 8. Body diode forward voltage

**Product dimension (SOT-523)**


Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
$\theta$	0°	8°	0°	8°


**Product dimension (SOT-523)**


Dim	Millimeters	
	MIN	MAX
a	--	0.5
b	--	0.6
c	--	1.0
d	--	1.24
e	--	0.4

**Suggested PCB Layout**
**Marking information**

**Ordering information**

Device	Package	Reel	Shipping
PNM523T30V01	SOT-523 (Pb-Free)	7"	3000 / Tape & Reel


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