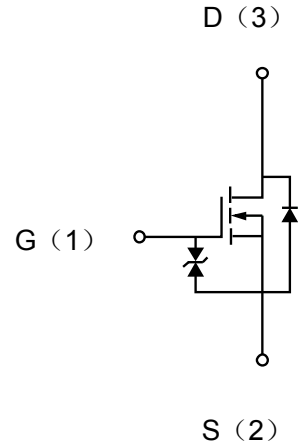


Description

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

MOSFET Product Summary		
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (mA)
20	0.5@ V _{GS} =4.0V	±300
	0.7@ V _{GS} =2.5V	
	0.9@ V _{GS} =1.8V	



Absolute maximum rating@25°C

Parameter	Symbol	Value	Units
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±8	V
Continuous Drain Current(T _J =150°C)	Continuous	I _D	±300
	Pulsed	I _{DP}	±600
Total power dissipation	P _D	140	mW
Channel temperature	T _{CH}	150	°C
Range of storage temperature	T _{STG}	-55 to +150	°C

Thermal resistance

Parameter	Symbol	Limits	Units
Channel to ambient	R _{th(ch-a)}	800	°C/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=1mA, V_{GS}=0V$	20		-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 8V$	-	-	± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10V, I_D=1mA$	0.5	-	1.1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.0V, I_D=300mA$	-	0.3	0.5	Ω
		$V_{GS}=2.5V, I_D=200mA$	-	0.45	0.7	Ω
		$V_{GS}=1.8V, I_D=150mA$		0.6	0.9	Ω
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=300mA$	395			ms
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=10V, f=1MHz$	-	30		pF
Output Capacitance	C_{OSS}		-	13		pF
Reverse Transfer Capacitance	C_{RSS}		-	13		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10V, V_{GS}=4.0V, R_G=10\Omega, R_L=67\Omega, I_D=150mA$	-	7		ns
Turn-Off Delay Time	$t_{d(off)}$		-	23		ns
Turn-On Rise Time	t_r		-	15		ns
Turn-On Fall Time	t_f		-	15		ns
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=100mA$		-	1.2	V

Typical Characteristics

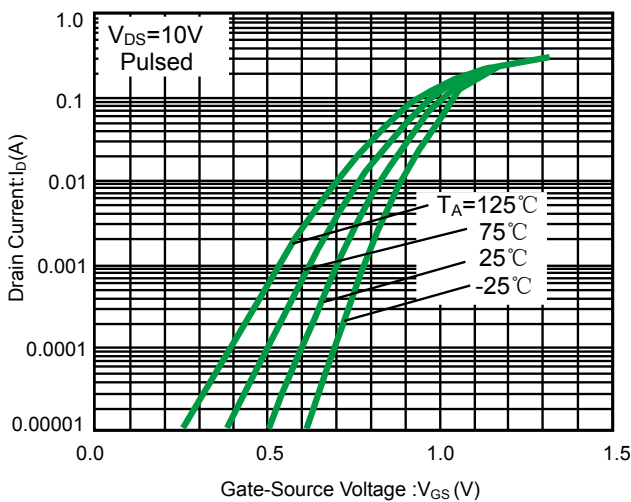


Fig 1. Typical transfer Characteristics

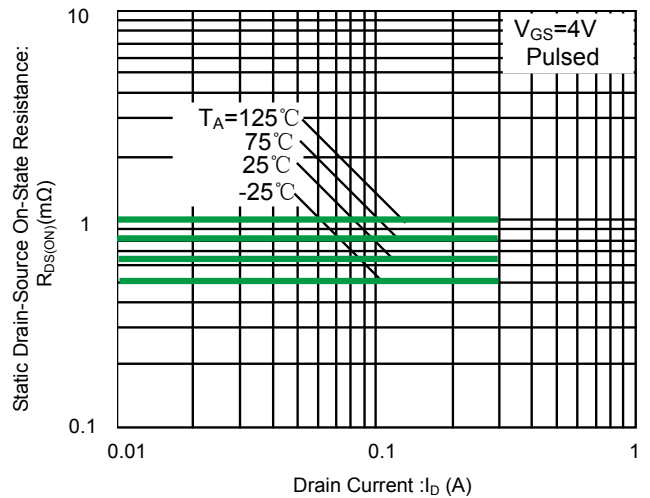


Fig 2. Static drain-source on-state resistance vs. drain current(I)

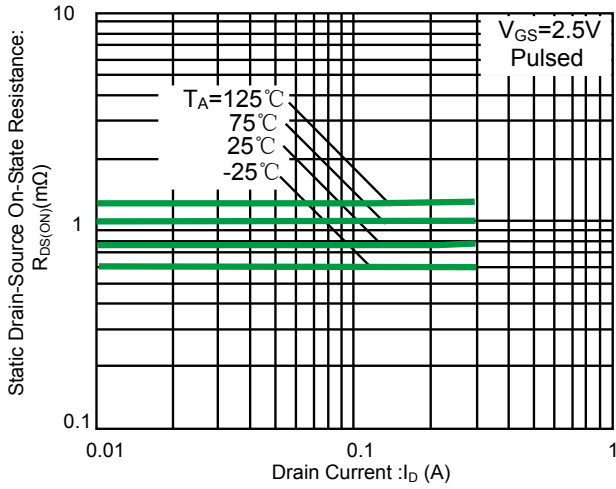


Fig 3. Static drain-source on-state resistance Vs. drain current (II)

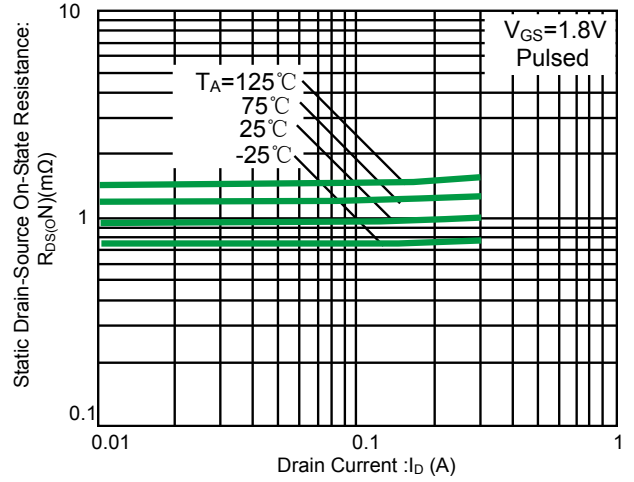


Fig 4. Static drain-source on-state resistance vs. drain current (III)

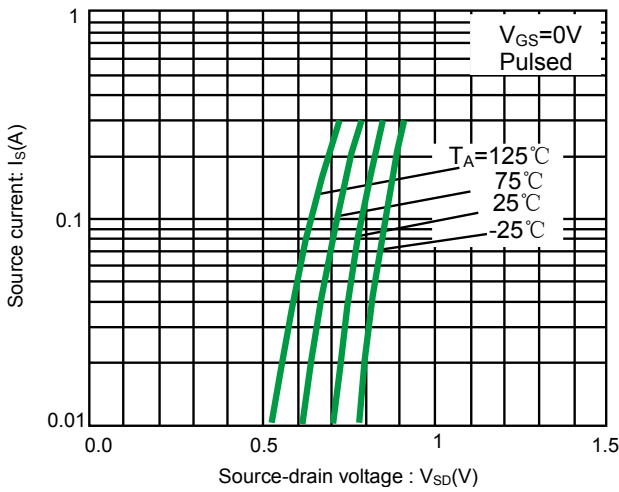


Fig 5. Source current vs. source-drain voltage

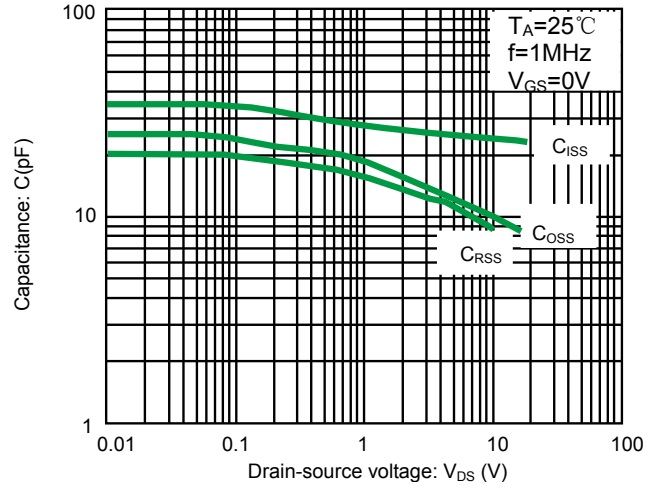


Fig 6. Typical capacitance vs. drain-source voltage

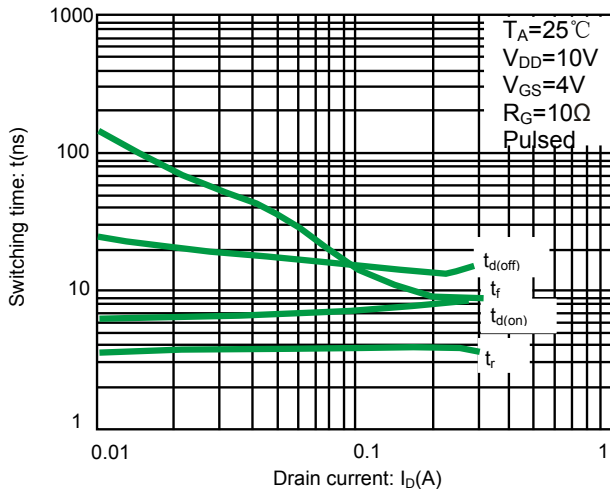


Fig 7. Switching characteristics

Switching characteristics measurement circuit

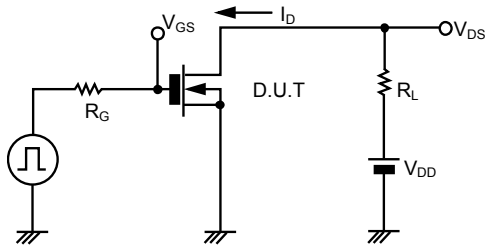


Fig.8 Switching time measurement circuit

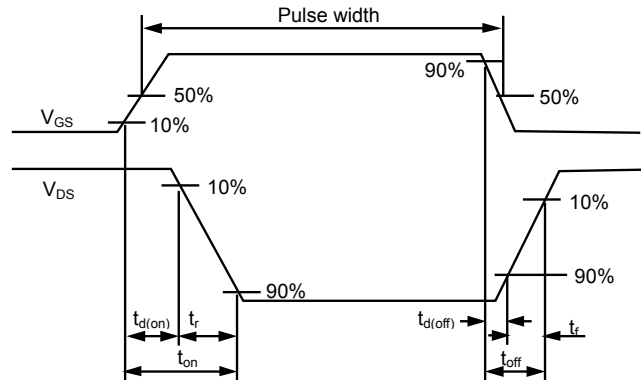
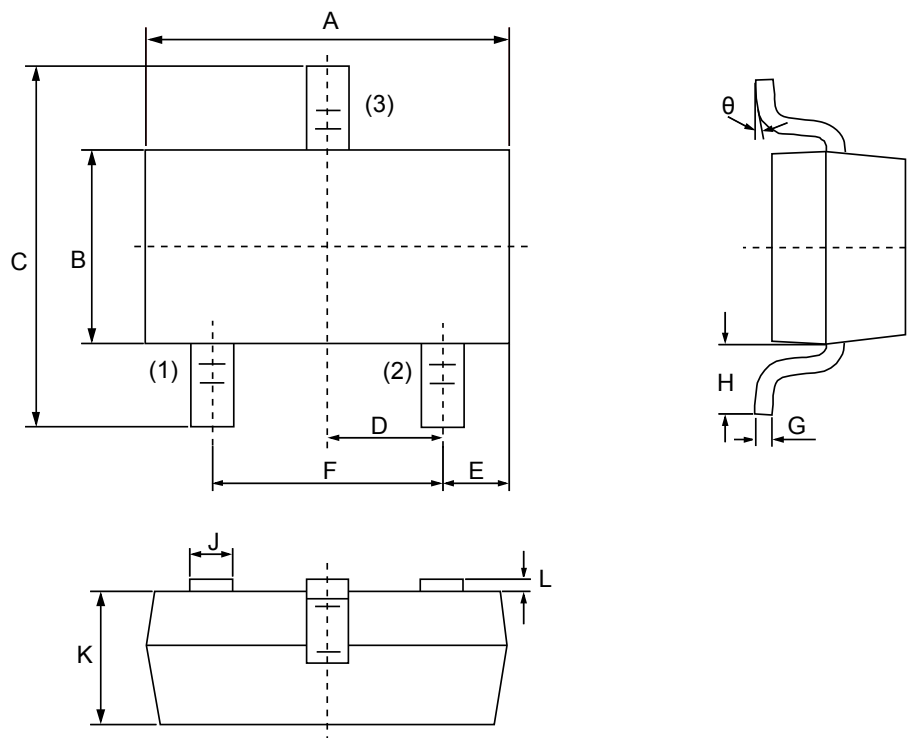
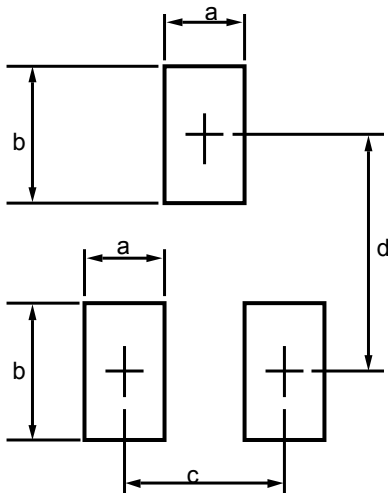


Fig.9 Switching time waveforms

Product dimension(SOT-523)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	0.75	0.85	0.030	0.033
C	1.450	1.750	0.057	0.069
D	0.50BSC		0.020BSC	
E	0.30	0.33	0.012	0.015
F	0.900	1.100	0.035	0.043
G	0.100	0.200	0.004	0.008
H	0.550		0.022	
J	0.150	0.250	0.006	0.010
K	0.700	0.900	0.028	0.038
L	0.024	0.027	0.600	0.700
θ	0°	4°	0°	4°




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

Ordering information

Device	Package	Shipping
PNM523T201E0	SOT-523 (Pb-Free)	3000 / Tape & Reel


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