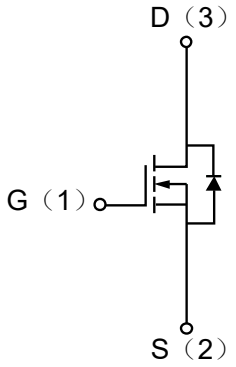
Description

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(A)
20	0.043@ V_{GS}=4.5V	3



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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF/ON CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =250μA,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}=±8V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.6	-	1.2	V
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	V_{GS}=4.5V, I_D =2.8A	-	0.043	0.060	Ω
		V_{GS}=2.5V, I_D =2.0A	-	0.052	0.115	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =10V, f=1MHz	-	450		pF
Output Capacitance	C_{OSS}		-	70		pF
Reverse Transfer Capacitance	C_{RSS}		-	43		pF
SWITCHING PARAMETERS						
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=10V, V_{GS} =4.5V, R_G=6Ω, I_D =1A	-	7	15	ns
Turn-Off Delay Time	$t_{d(off)}$		-	16	60	ns
Turn-On Rise Time	Tr		-	55	80	ns
Turn-On Fall Time	Tf		-	20	25	ns
Total Gate Charge	Qg(10)	V_{DS}=10V, V_{GS} =4.5V, I_D =3.6A		5.2	10	nC
Gate-Source Charge	Qgs			0.65		nC
Gate-Drain Charge	Qgd			1.5		nC
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=1.0A		0.76	1.2	V
Maximum Continuous rain-Source Diode Forward Current	I_S				1.6	A

Absolute maximum rating@25℃

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8	V
Drain Current	Continuous	I_D	3	A
	Pulsed	I_D	9	A
Total Power Dissipation		P_D	1.25	W
Operating Junction and Storage Temperature Range		T_J	-55 to 150	℃

Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient A	t≤10s	θ_{JA}	-	100	℃/W

Typical Characteristics

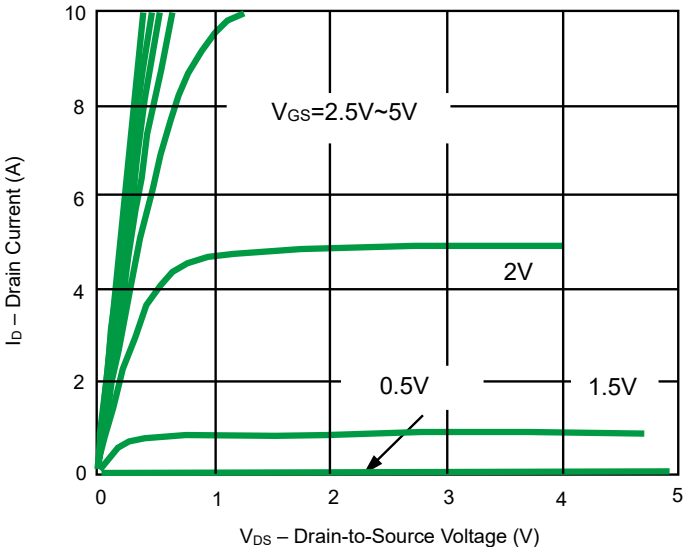


Fig 1. Output Characteristics

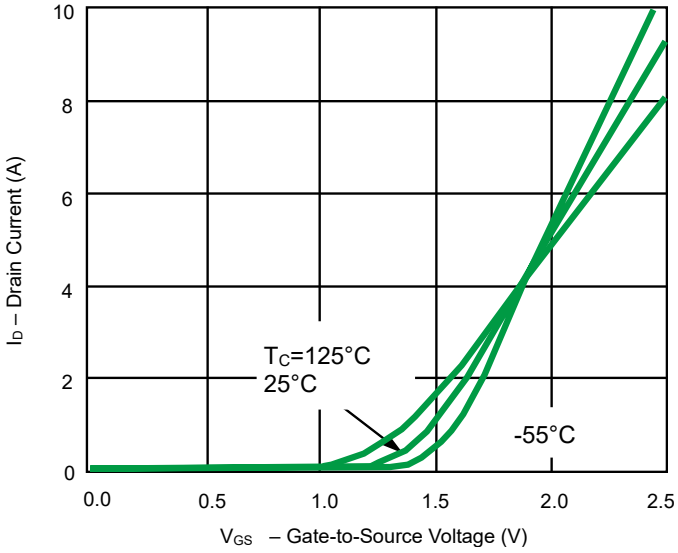


Fig 2. Transfer Characteristics

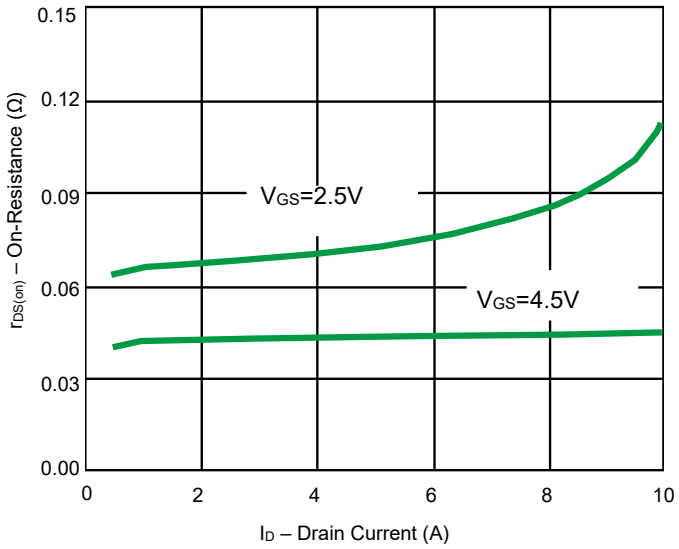


Fig 3. On-Resistance vs. Drain Current

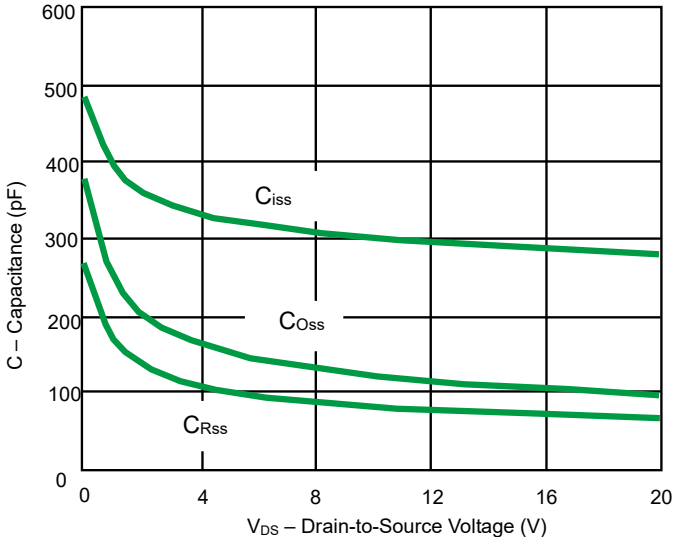


Fig 4. Capacitance Characteristics

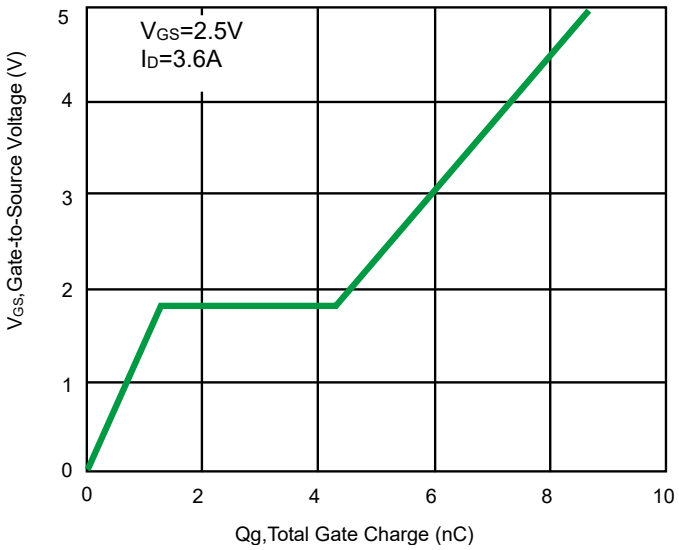


Fig 5. Gate Charge Characteristics

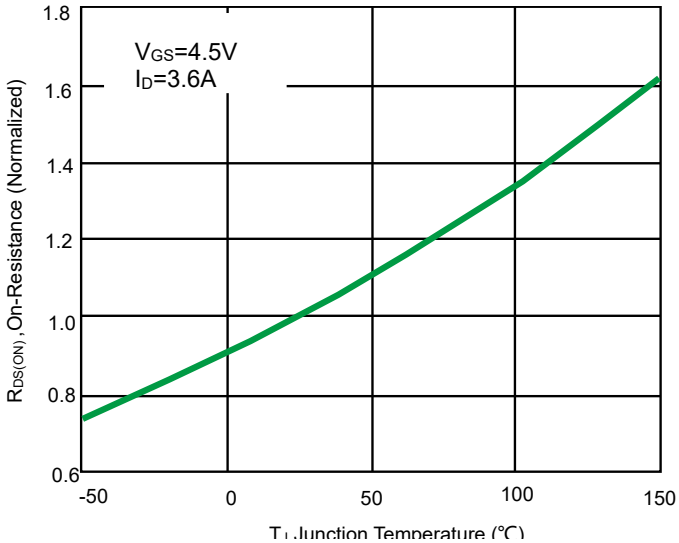


Fig 6. On-Resistance vs. Junction Temperature

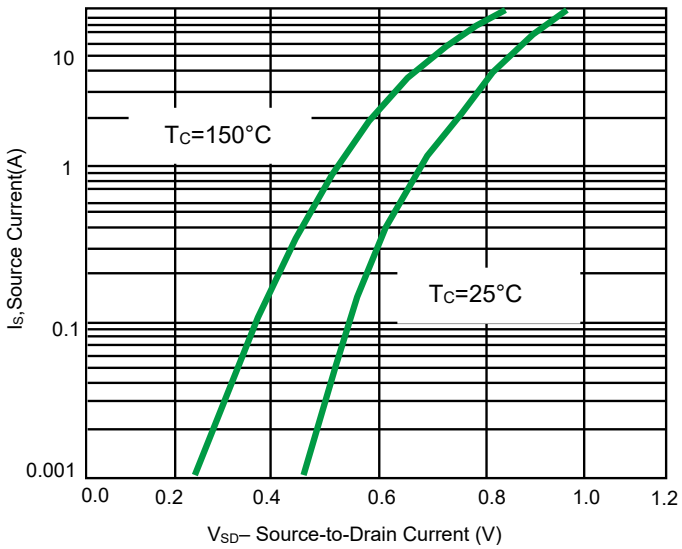


Fig 7. Source-Drain Diode Forward Voltage

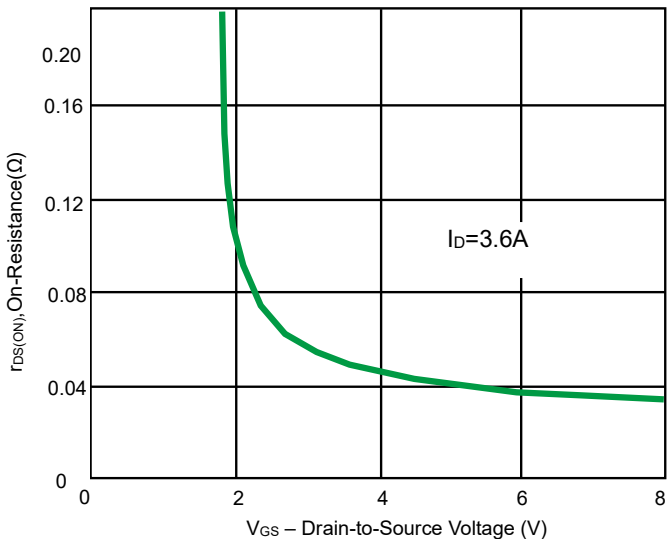


Fig 8. On-Resistance vs. Gate-to-Source Voltage

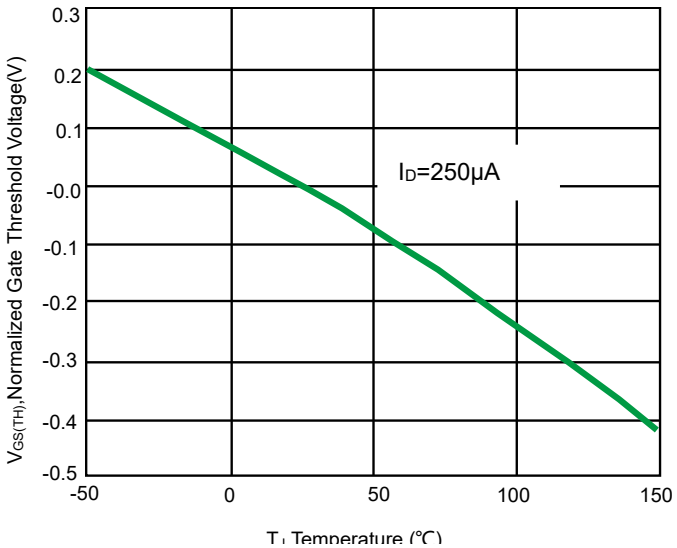


Fig 9. Normalized Gate Threshold Voltage vs. Temperature

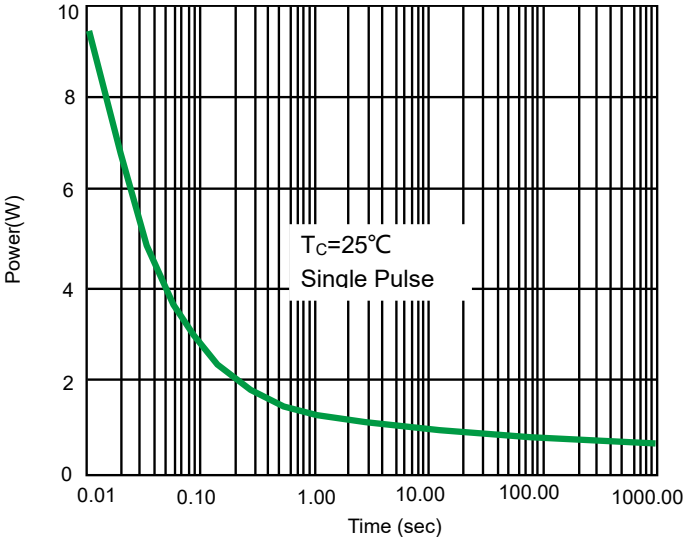
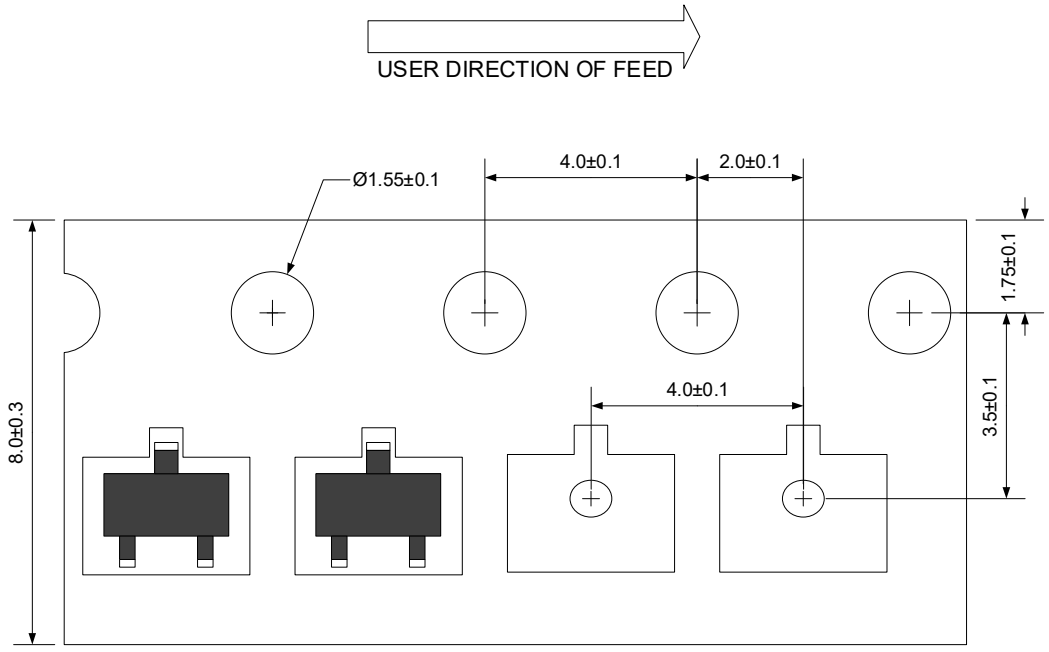


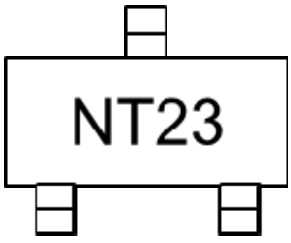
Fig 10. Single Pulse Power

Load with information

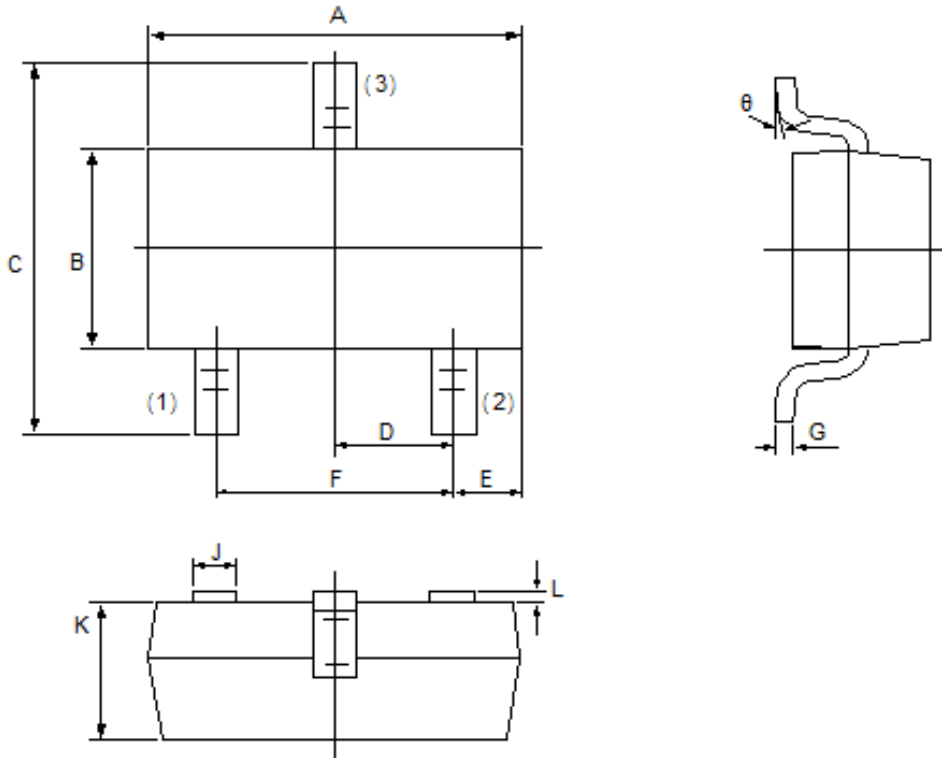


Unit:mm

Marking information



Product dimension(SOT-23)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.72	3.12	0.107	0.123
B	1.10	1.50	0.043	0.059
C	2.10	2.64	0.083	0.104
D	0.95 BSC		0.037 BSC	
E	0.50 BSC		0.020 BSC	
F	1.90 BSC		0.075 BSC	
G	0.08	0.21	0.003	0.008
J	0.30	0.50	0.012	0.020
K		1.35		0.053
L	0.013	0.15	0.001	0.006
θ	0°	10°	0°	10°

Ordering information

Device	Package	Reel	Shipping
PNMT20V3	SOT-23 (Pb-Free)	7"	3000 / Tape & Reel

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