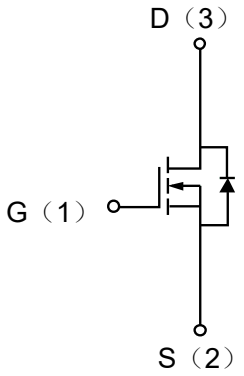
Description

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

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
45	100@ V_{GS}=10V	2
	110@ V_{GS}=4.5V	



Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	45	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current	Continuous	I_D	2.0	A
	Pulsed	I_D	8	A
Source current(Body diode)	Continuous	I_S	0.8	A
	Pulsed	I_{SP}	8	A
Total Power Dissipation		P_D	1.0	W
Channel temperature		Tch	150	°C
Range of storage temperature		Tstg	-55 to +150	°C

Thermal resistance

Parameter	Symbol	Limits	Units
Channel to ambient	Rth(ch-a)*	125	℃/W

Body diode characteristics(Source-drain)(Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Forward voltage	V_{SD}	--	--	1.2	V	I_S=0.8A,V_{GS}=0V

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =1mA,V_{GS}=0V	45		-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =45V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0V,V_{GS}=±12V	-	-	±1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =10V, I_D =1mA	0.5		1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D =2.0A	-	100	130	mΩ
		V_{GS}=4.5V, I_D =2.0A	-	110	150	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =10V, f=1MHz	-	240		pF
Output Capacitance	C_{DSS}		-	30		pF
Reverse Transfer Capacitance	C_{RSS}		-	20		pF
SWITCHING PARAMETERS						
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=25V, V_{GS} =4.5V, R_L=25Ω, R_G=10Ω, I_D =1.0A	-	6	--	ns
Rise time	tr		--	15	--	ns
Turn-Off Delay Time	$t_{d(off)}$		-	15	--	ns
Fall time	t_f		--	10	--	ns
Total gate charge	Q_g	V_{DS}=25V, V_{GS} =4.5V, R_L=12.5Ω, R_G=10Ω, I_D =2.0A	--	2.9	4.1	nC
Gate-source charge	Q_{gs}		--	0.7	--	nC
Gate-drain charge	Q_{gd}		--	0.9	--	nC

Typical Characteristics

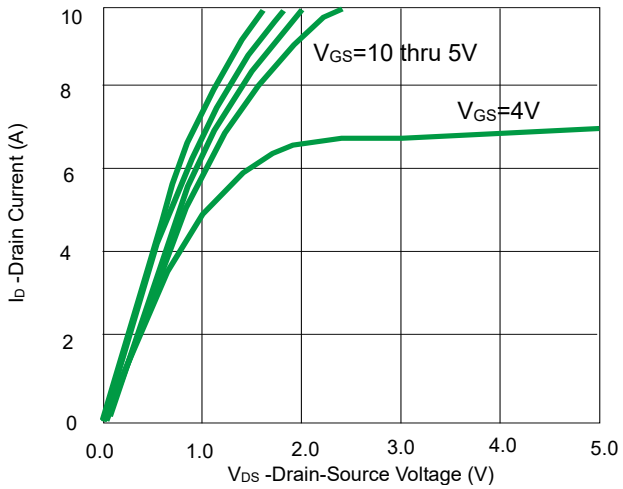


Fig 1. Output characteristics

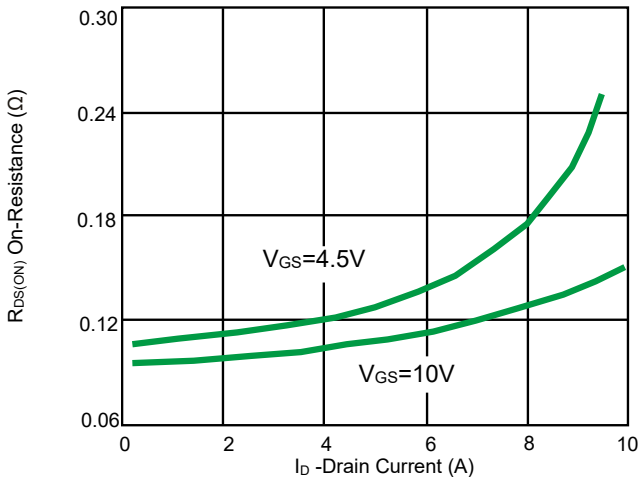


Fig 2. Drain-Source On-Resistance

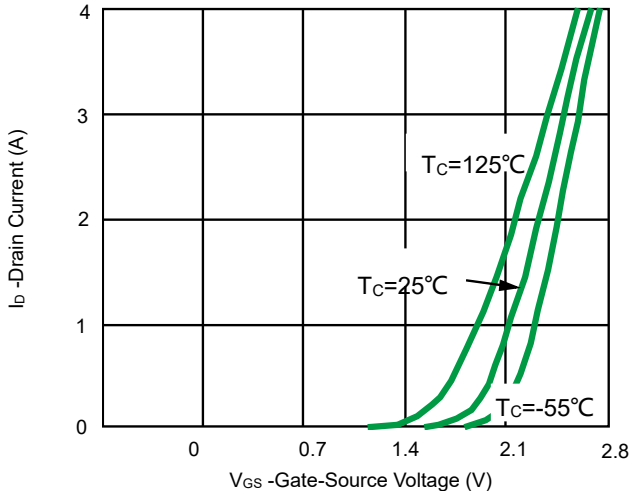


Fig 3. Transfer Characteristics

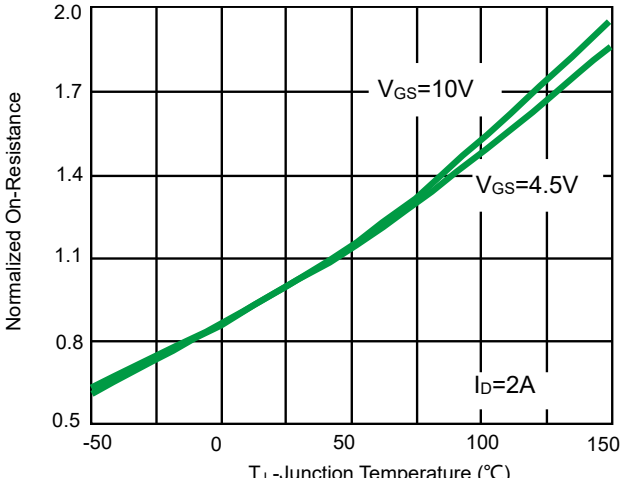


Fig 4. Drain-Source On-Resistance

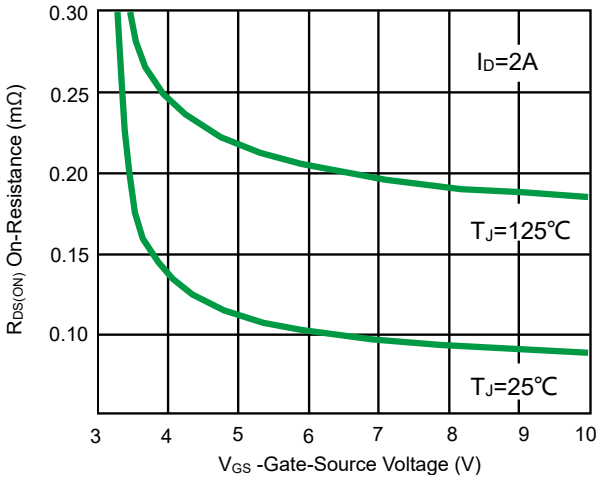


Fig 5. $R_{DS(ON)}$ vs. V_{GS}

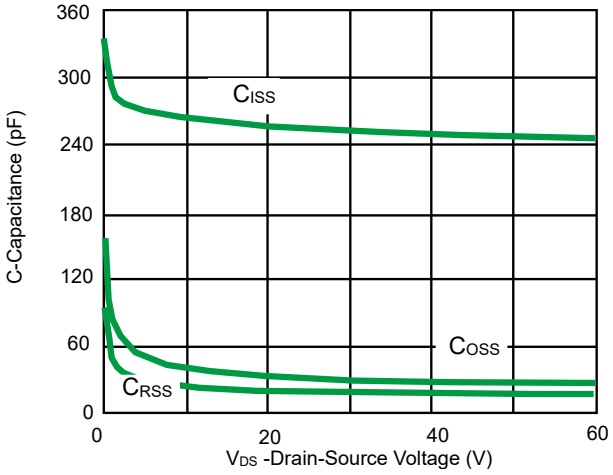


Fig 6. Capacitance vs. V_{DS}

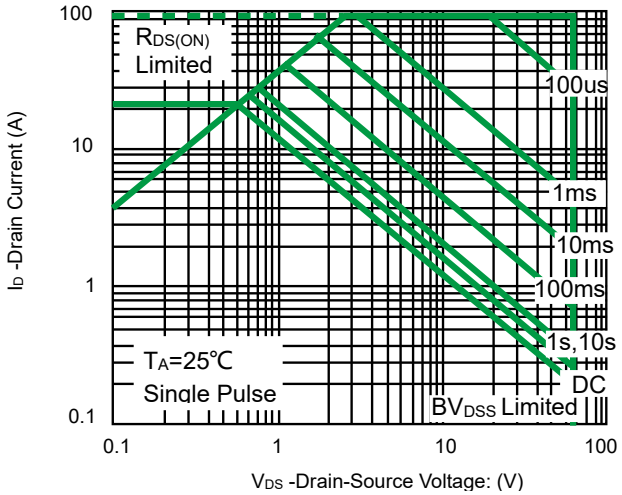


Figure 7. Safe Operation Area

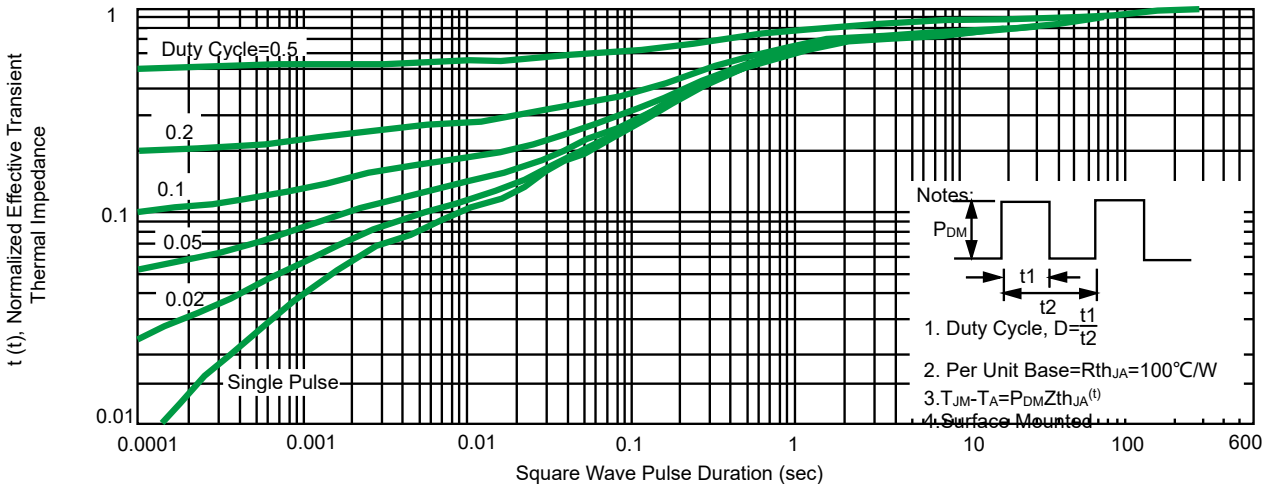
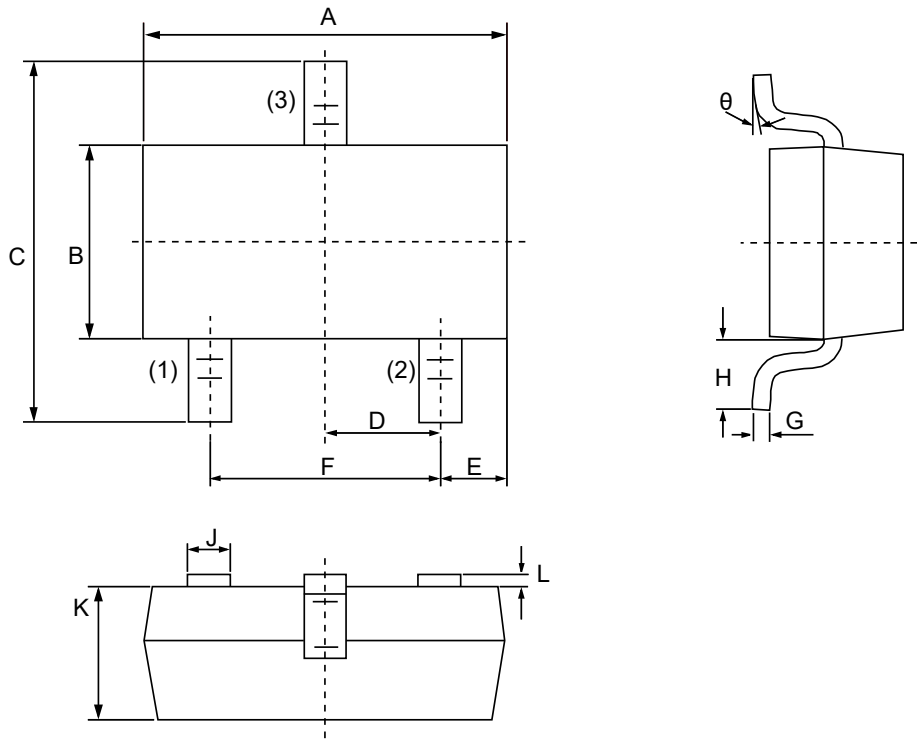
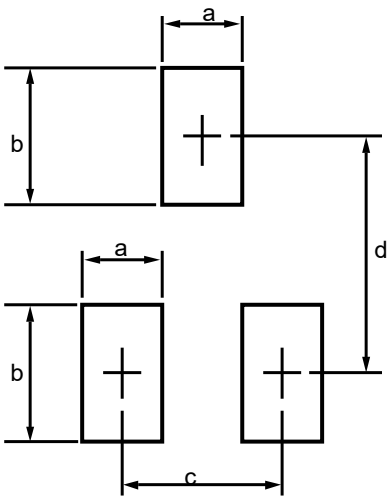


Fig 8.Normalized Maximum Transient Thermal Impedance

Product dimension(SOT-23)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	2.10	2.50	0.0830	0.0984
D	0.89	1.02	0.0350	0.0401
E	0.45	0.60	0.0177	0.0236
F	1.78	2.04	0.0701	0.0807
G	0.085	0.177	0.0034	0.0070
H	0.45	0.60	0.0180	0.0236
J	0.37	0.50	0.0150	0.0200
K	0.89	1.11	0.0350	0.0440
L	0.013	0.100	0.0005	0.0040
θ	0°	10°	0°	10°



Dim	Millimeters	
	MIN	MAX
a	--	0.7
b	--	1.2
c	--	2.04
d	--	2.2

Ordering information

Device	Package	Shipping
PNMT45V2	SOT-23 (Pb-Free)	3000 / Tape & Reel

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