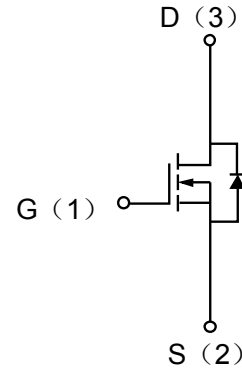


Description

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	
	160@ V _{GS} =2.5V	


Absolute maximum rating@25°C

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
	Pulsed	I _D	8
Source current(Body diode)	Continuous	I _S	0.8
	Pulsed	I _{SP}	8
Total Power Dissipation	P _D	1.0	W
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)*}	125	°C/W

Body diode characteristics(Source-drain)(T_a=25°C)

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°C (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	m Ω
		$V_{GS}=4.5V, I_D=2.0A$	-	110	150	m Ω
		$V_{GS}=2.5V, I_D=2.0A$	-	160	220	m Ω
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	$t_{d(on)}$	$V_{DS}=25V, V_{GS}=4.5V,$ $R_L=25\Omega, R_G=10\Omega,$ $I_D=1.0A$	-	6	--	ns
Rise time	t_r		--	15	--	ns
Turn-Off Delay Time	$t_{d(off)}$		-	15	--	ns
Fall time	t_f		--	10	--	ns
Total gate charge	Q_g	$V_{DS}=25V, V_{GS}=4.5V,$ $R_L=12.5\Omega, R_G=10\Omega,$ $I_D=2.0A$	--	2.9	4.1	nC
Gate-source charge	Q_{gs}		--	0.7	--	nC
Gate-drain charge	Q_{gd}		--	0.9	--	nC

Typical Characteristics

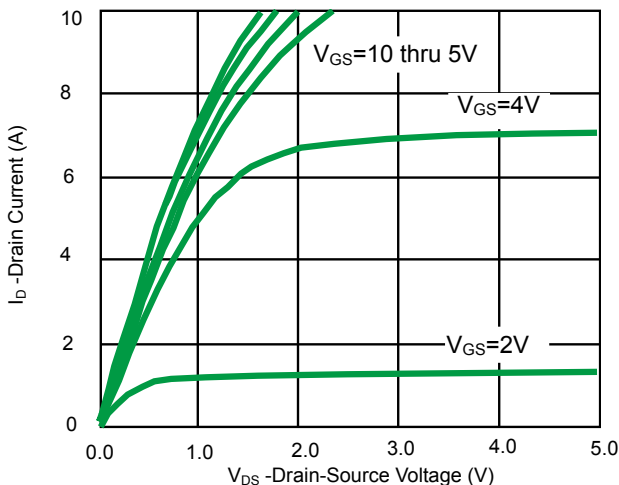


Fig 1. Output characteristics

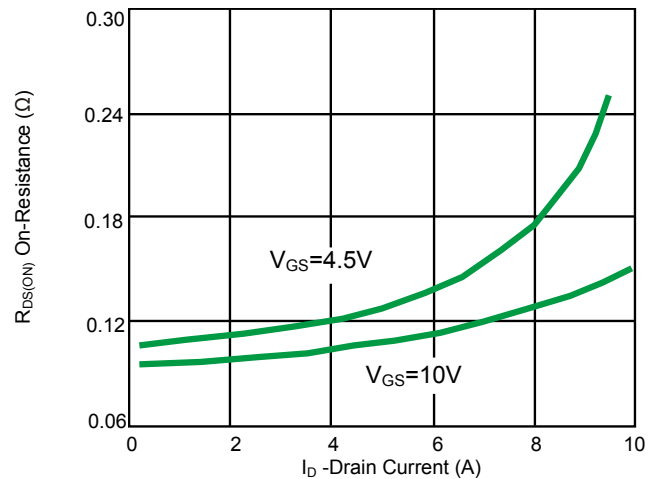


Fig 2. Drain-Source On-Resistance

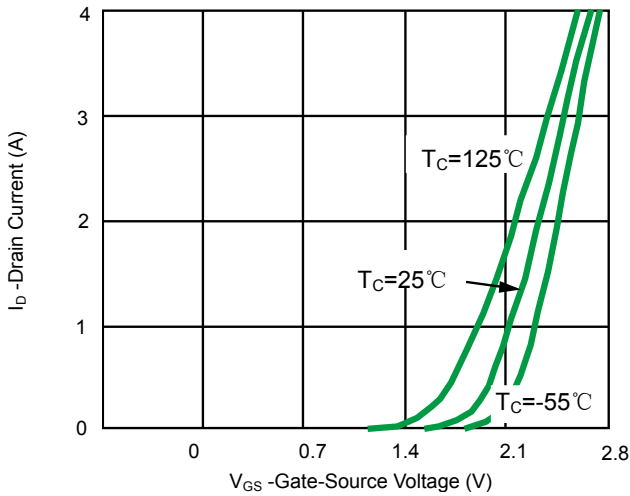


Fig 3. Transfer Characteristics

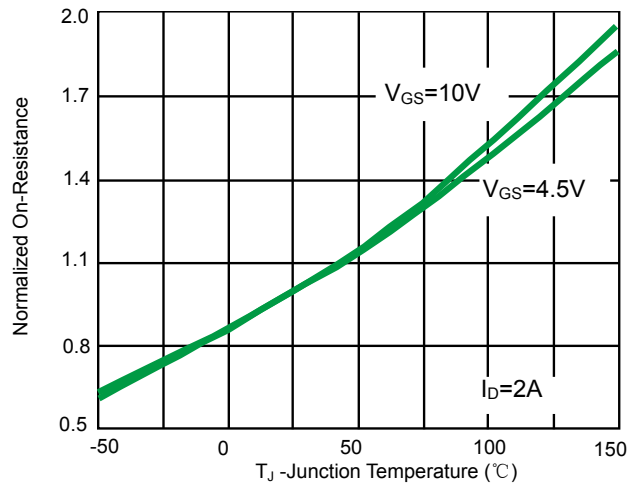


Fig 4. Drain-Source On-Resistance

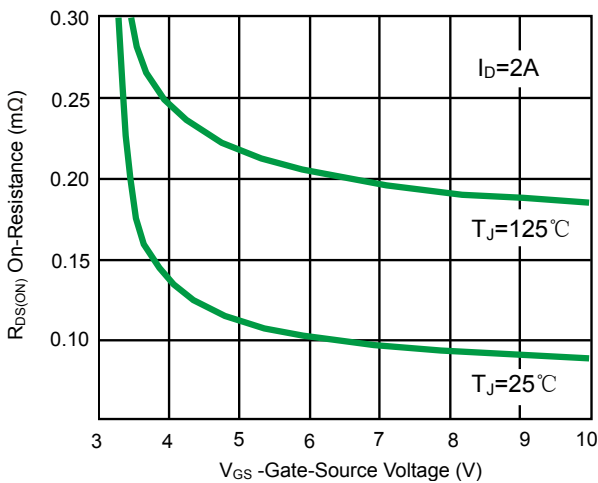


Fig 5. $R_{DS(ON)}$ vs. V_{GS}

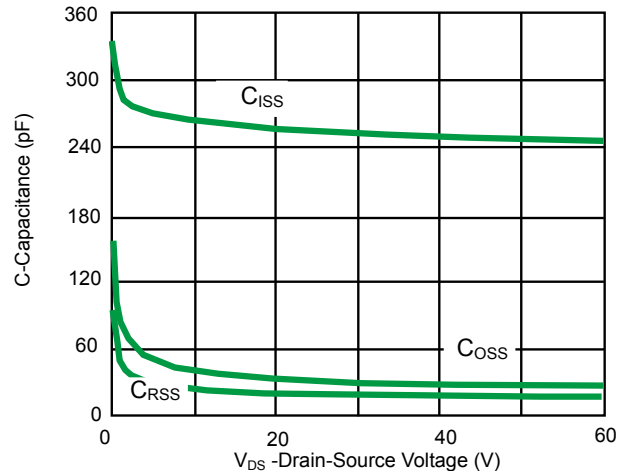


Fig 6. Capacitance vs. V_{DS}

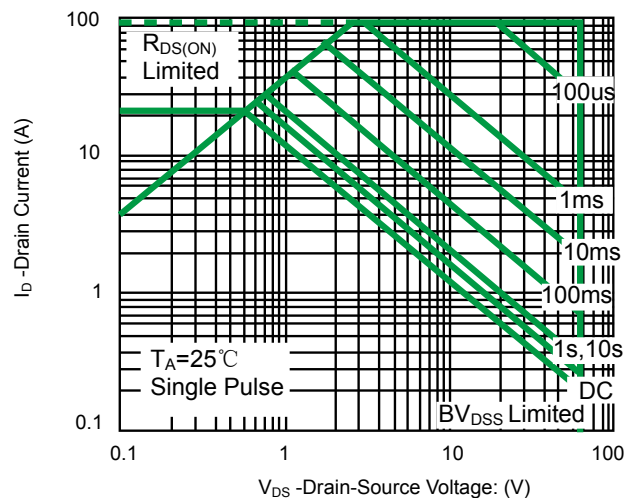


Figure 7. Safe Operation Area

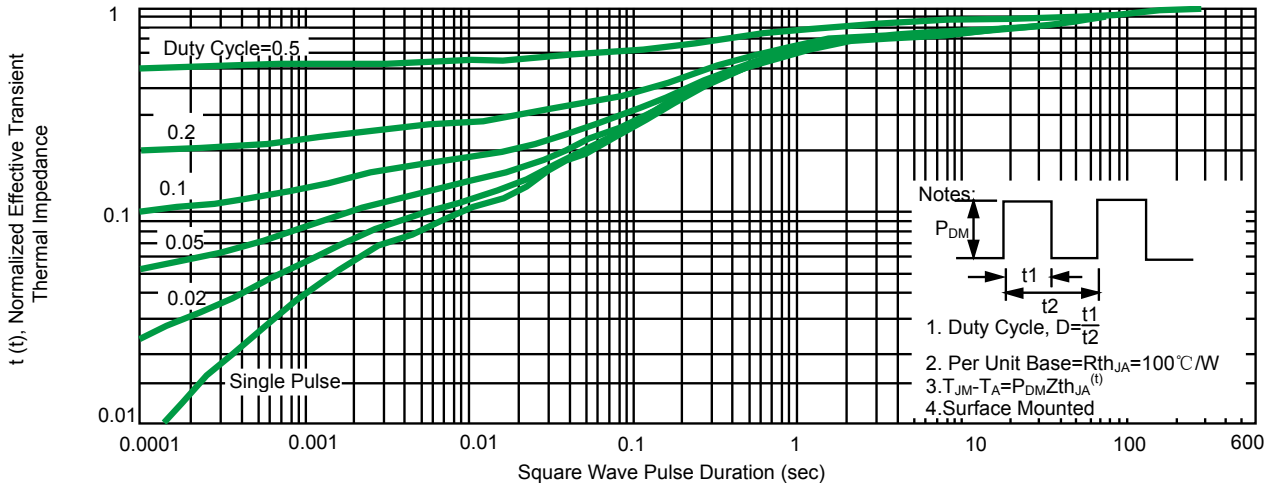
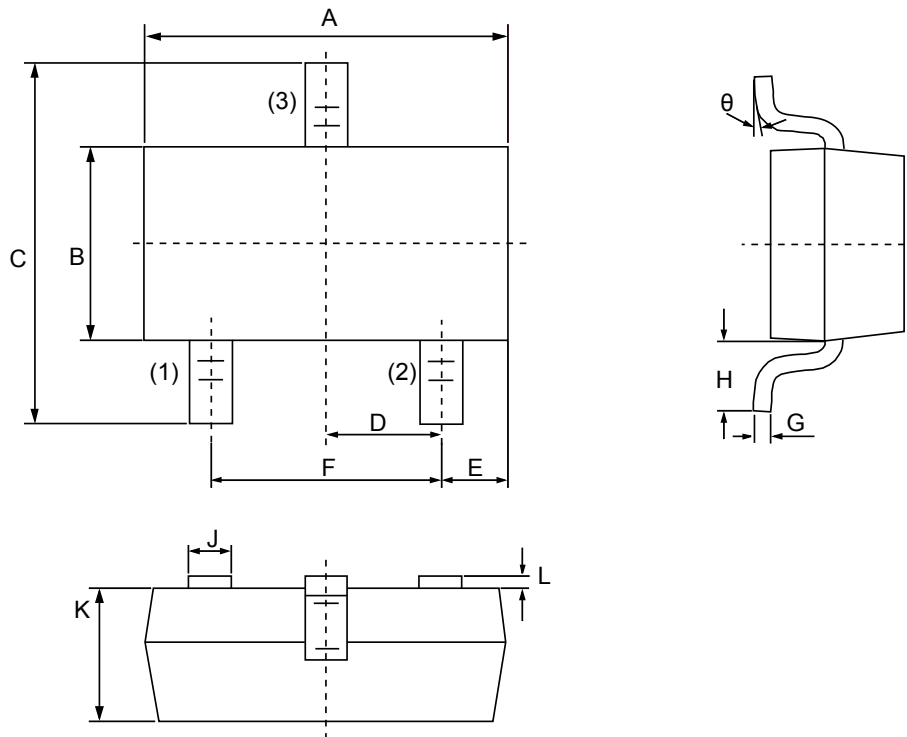
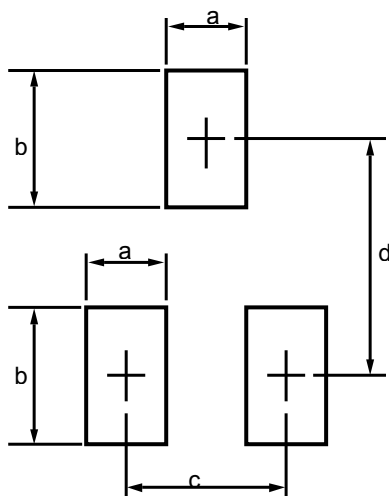


Fig 8. Normalized Maximum Transient Thermal Impedance

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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