Prisemi®

PPM723T30V02E

P-Channel MOSFET

Description

The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.
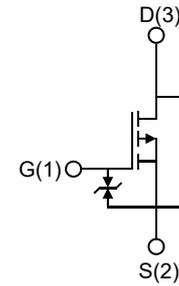
MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(Ω)	I_D(mA)
-30	0.48@ V_{GS} = -10V	-200
	0.68@ V_{GS} = -4.5V	
	0.75@ V_{GS} = -4V	

D(3)

G(1)

S(2)

Schematic diagram

T2L

Marking (Top View)
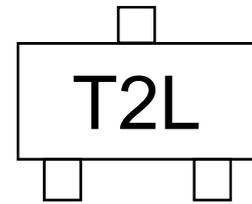
D

S

G

SOT-723 (Top View)

Feature

➢ Low On-resistance.
➢ Low Gate Threshold Voltage
➢ Fast Switching Speed
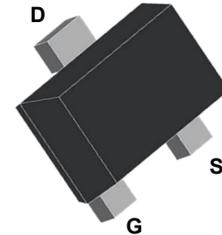➢ Small Surface Mount Package
➢ ESD Protected Gate

Applications

➢ Switching
➢ Power Management Functions

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±10	V
Drain Current-Continuous	I_D	-200	mA
Pulsed Drain Current	I_{DP}[1]	-400	mA
Maximum Power Dissipation	P_D[2]	150	mW
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	℃
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$[2]	833	℃/W

Notes:
1.Pw≤10μs,Duty cycle≤1%
2.Each terminal mounted on a recommended land

P-Channel MOSFET

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -1.0mA$	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm10V, V_{DS} = 0V$	-	-	±10	μA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -1.0mA$	-0.5	-	-1.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = -10V, I_D = -200mA$	-	0.48	1.0	Ω
		$V_{GS} = -4.5V, I_D = -150mA$	-	0.68	1.2	
		$V_{GS} = -4V, I_D = -150mA$	-	0.75	1.5	
Forward Transfer Admittance	|Yfs|	$V_{DS} = -10V, I_D = -150mA$	0.2	-	-	s
Dynamic Characteristics						
Input Capacitance	C_{Iss}	$V_{DS} = -10V, V_{GS} = 0V,$ f = 1.0MHz	-	66	-	pF
Output Capacitance	C_{oss}		-	17	-	pF
Reverse Transfer Capacitance	C_{rss}		-	10	-	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -15V, I_D = 0.15A,$ $V_{GS} = -10V, R_L = 100Ω,$ $R_G = 10Ω$	-	3.9	-	ns
Turn-on Rise Time	t_r		-	1.9	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	12	-	ns
Turn-Off Fall Time	t_r		-	3.2	-	ns
Total Gate Charge	Q_g	$V_{DS} = -15V, I_D = -0.25A,$ $V_{GS} = 10V$	-	1.4	-	nC
Gate-Source Charge	Q_{gs}		-	0.1	-	nC
Gate-Drain Charge	Q_{gd}		-	0.2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = -0.2A$	-	-	-1.2	V

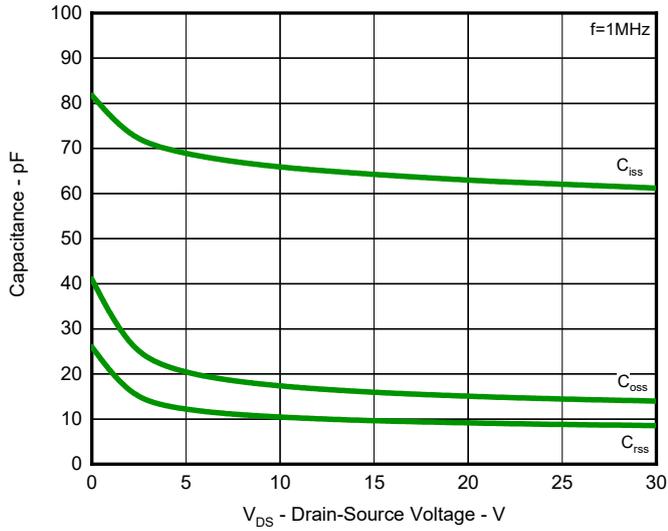## Typical Characteristics

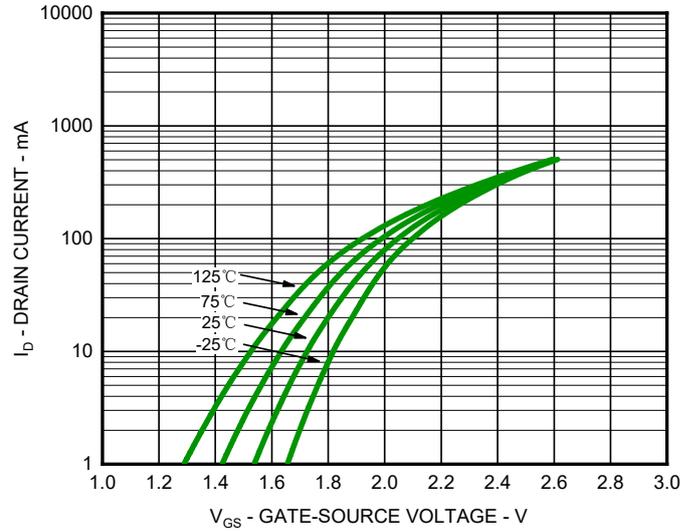**Fig.1 Capacitance vs. Drain-Source Voltage**

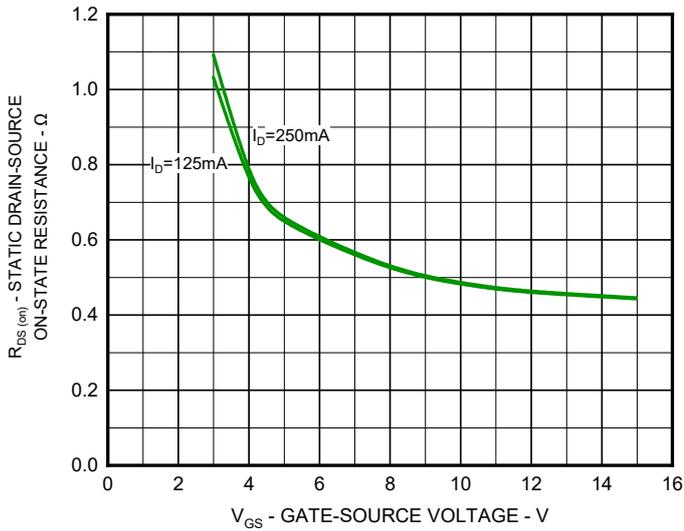**Fig.2 Typical Transfer Characteristics**
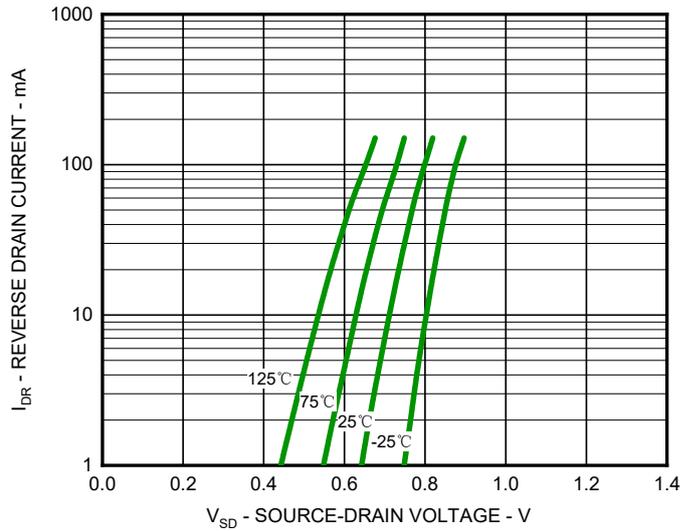

Fig.3 $R_{DS(on)}$ vs. V_{GS}

Fig.4 Reverse Drain Current vs.Source-Drain Voltage

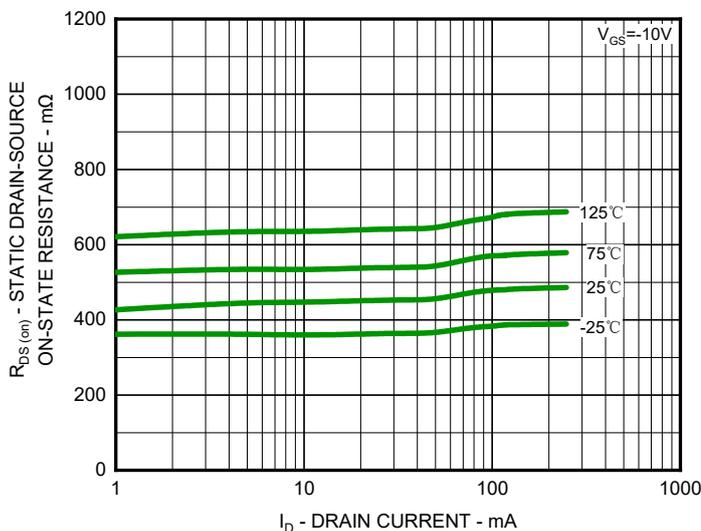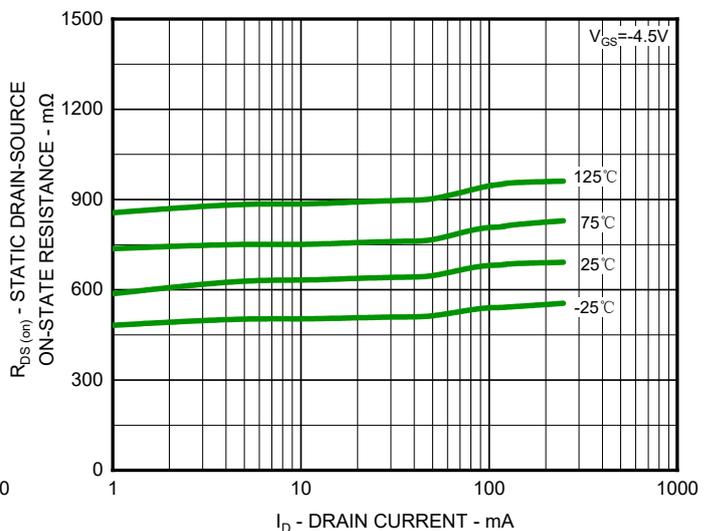**Fig.5 $R_{DS(ON)}$ vs. I_D (I)**

Fig.6 $R_{DS(ON)}$ vs. I_D (II)
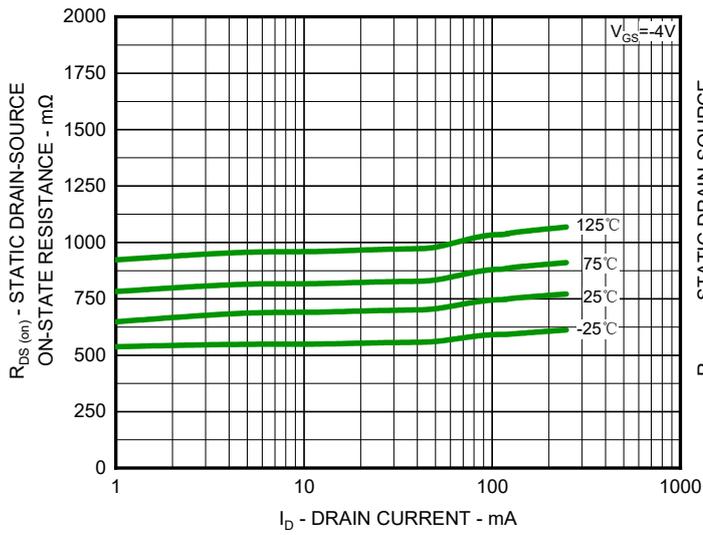
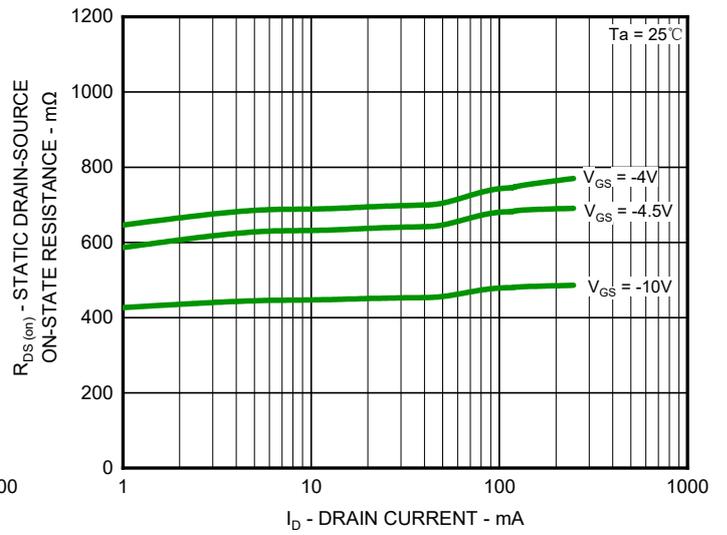**Fig.7 R_DS(ON) vs. I_D (III)**

Fig.8 R_DS(ON) vs. I_D (IV)

Product dimension (SOT-723)

Side View

Side View

Bottom View
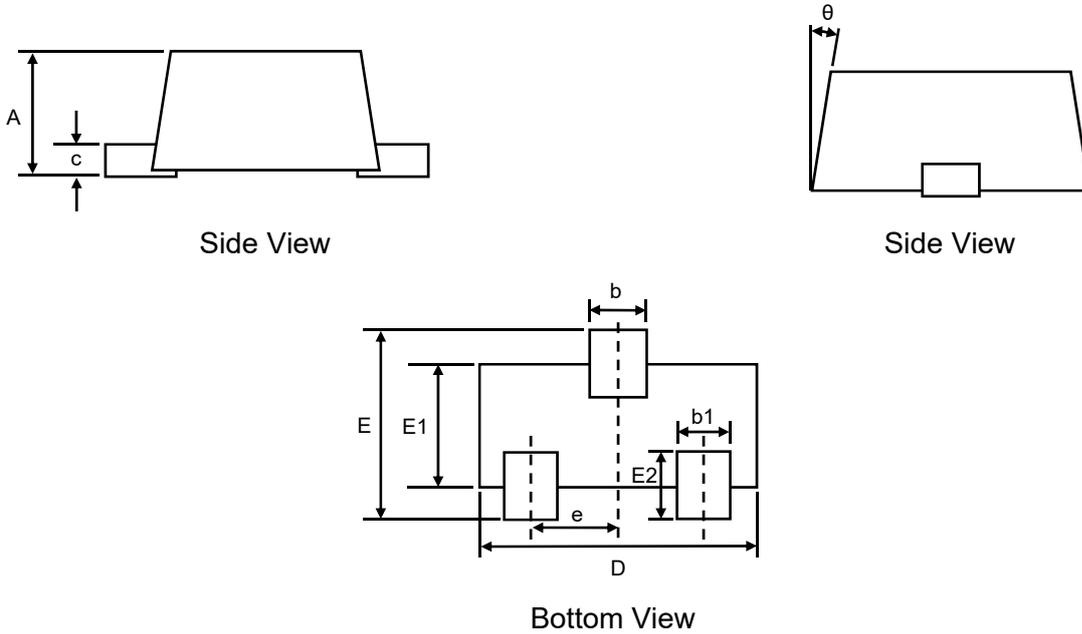
Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.42	0.45	0.017	0.018
b	0.20	0.37	0.008	0.015
b1	0.15	0.27	0.006	0.011
c	0.06	0.15	0.002	0.006
D	1.10	1.30	0.043	0.051
E	1.15	1.25	0.045	0.049
E1	0.75	0.85	0.030	0.033
E2	0.20	0.30	0.008	0.012
e	0.40 Ref.		0.016 Ref.	
θ	9°		9°	
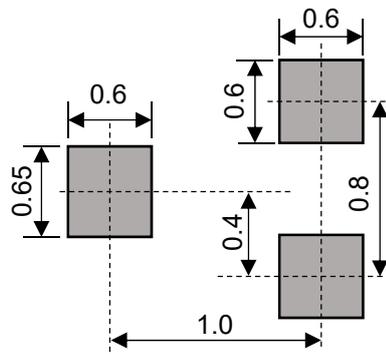
Unit:mm

Suggested PCB Layout

Load with information

USER DIRECTION OF FEED

Ø1.5±0.1

4.0±0.1

2.0±0.1

1.75±0.1

2.0±0.1

3.5±0.1

8.0±0.3
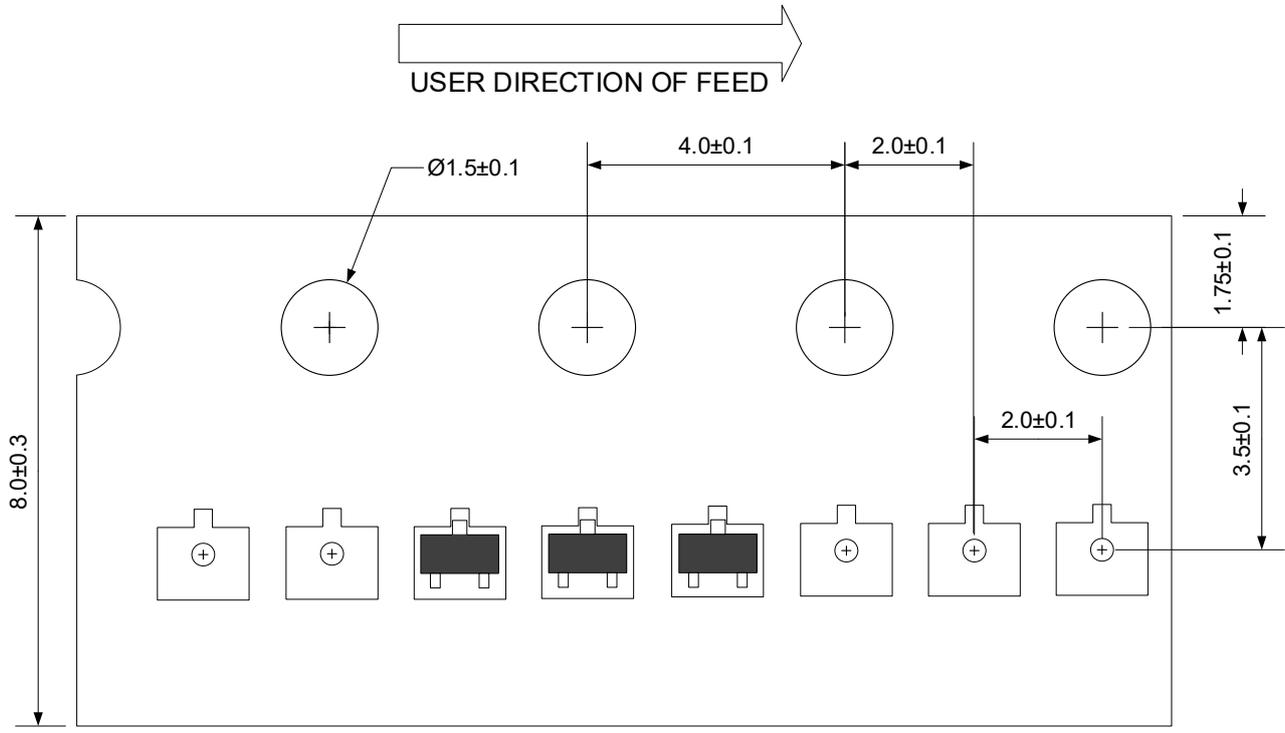
Unit:mm

Ordering information

Device	Package	Reel	Shipping
PPM723T30V02E	SOT-723 (Pb-Free)	7"	10000 / Tape & Reel

IMPORTANT NOTICE

Ⓟ and **Prisemi**® are registered trademarks of **Prisemi Electronics Co., Ltd (**Prisemi**),** Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.