TECH PUBLIC
台舟电子

TPM6401S3

P-Channel Enhancement-Mode MOS FETs

www.sot23.com.tw

Features

- V_{DS}=-16V,ID=-3.8A
  $R_{DS(ON)}$<52mΩ@V_{GS}=-4.5V
  $R_{DS(ON)}$<78mΩ@V_{GS}=-2.5V
- SOT-23 Package

Applications

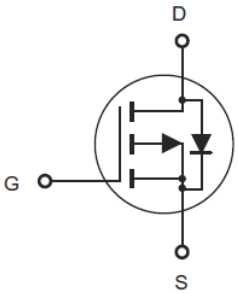
- Battery protection
- Load switch
- Power management

RoHS

Ordering Information

Part Number	Qty per Reel	Reel Size
TPM6401S3	3000	7″

SOT-23



Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-16	V
Gate-Source Voltage	V_{GS}	±10	
Continuous Drain Current	I_D	-3.8	A
Power Dissipation	P_D	1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-50 ~+150	

Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}= 0V, I_D=-250μA	-16	-18		
Zero gate voltage drain current	I_{DSS}	V_{DS}=-15V,V_{GS}=0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS}= ±10V, V_{DS}=0V			±100	nA
Gate threshold voltage*	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance*	$R_{DS(ON)}$	V_{GS}= -4.5V, I_D=-3.8A		40	52	mΩ
		V_{GS}= -2.5V, I_D=-3.0A		52	78	
Forward Transconductance	g_{FS}	V_{DS}= -5V, I_D=-3.8A	5			s
Dynamic Characteristics **						
Input Capacitance	C_{iss}	VDS=-10V,VGS=0V,f=1MHZ		478		pF
Output Capacitance	C_{oss}			81		
Reverse Transfer Capacitance	C_{rss}			52		
Switching Characteristics**						
Turn-on delay time	$t_{d(on)}$	V_{DD}=-10V,V_{GS}=-4.5V,RL=2.8Ω,I_D=-1A,R_{GEN}=6Ω		12		ns
Turn-on rise time	t_r			54		
Turn-off delay time	$t_{d(off)}$			15		
Turn-off Fall time	t_f			9		
Total Gate Charge	Q_g	V_{DS}=-10V,I_D=-3.8A,V_{GS}=-4.5V		4.3		nC
Gate-Source Charge	Q_{gs}			0.8		
Gate-Drain Charge	Q_{gd}			1.1		
Source-Drain Diode characteristics						
Drain-Source Diode Forward Current	I_S				-3.8	A
Diode Forward voltage	V_{SD}	V_{GS}=0V,I_S=-3.8A		-0.8	-1.2	V

Notes:
*Pulse Test: Pulse Width≤300μA, Duty Cycle≤2%.
**These parameters have no way to verify.

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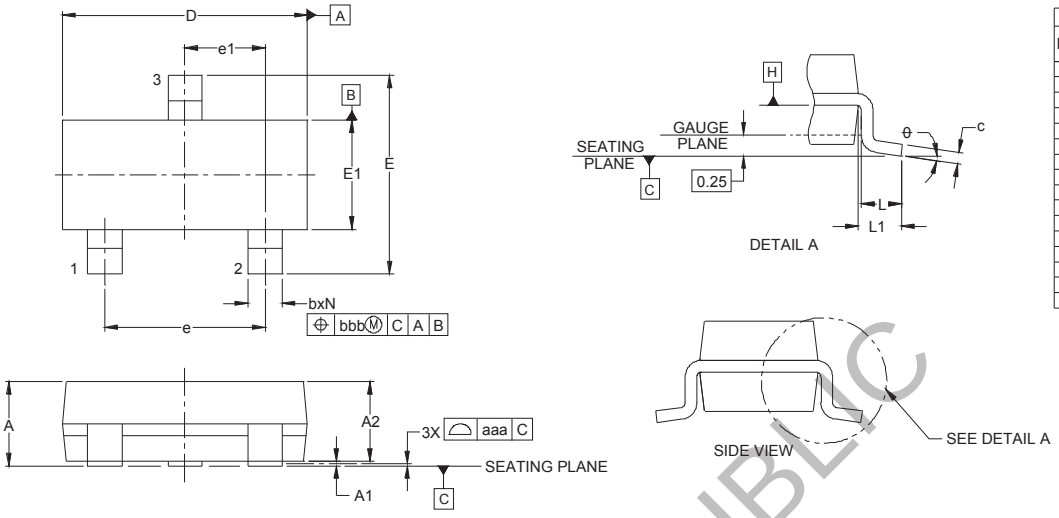
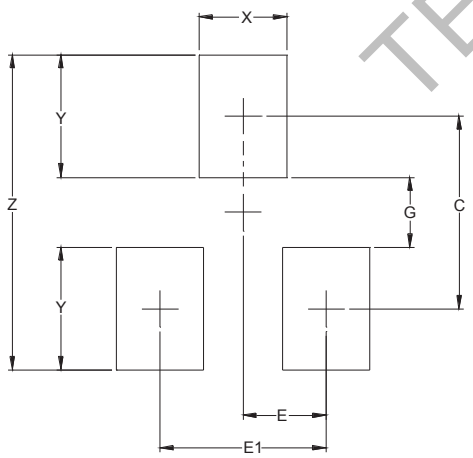
Outline Drawing - SOT23



DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.035	-	.044	0.89	-	1.12
A1	.000	-	.004	0.01	-	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	-	.020	0.30	-	0.51
c	.003	-	.007	0.08	-	0.18
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e	.075			1.90 BSC		
e1	.037			0.95 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	.022			(0.55)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		

Land Pattern - SOT23



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.087)	(2.20)
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60

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