TECH PUBLIC
台舟电子

TPM7001NPS6

N- and P-Channel 60 V (D-S) MOSFET

www.sot23.com.tw

FEATURES

V_{DSS}	$R_{DS(on)}$ Typ	I_D Max
N–Channel 60 V	1.5 Ω @ 10 V	500 mA
	2.0 Ω @ 4.5 V	250 mA
P–Channel –60 V	2.5 Ω @ 10 V	500 mA
	3.0 Ω @ 4.5 V	200 mA

APPLICATIONS

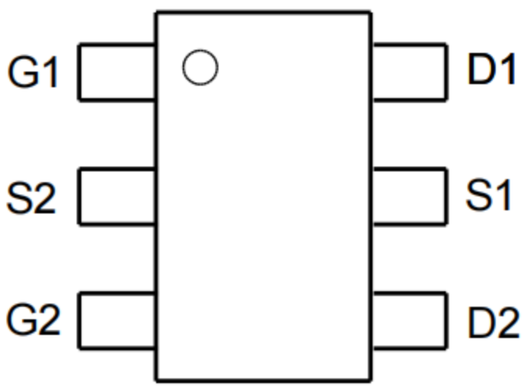
- Replace Digital Transistor, Level-Shifter
- Power Supply Converter Circuits
- Battery Operated Systems

Ordering Information

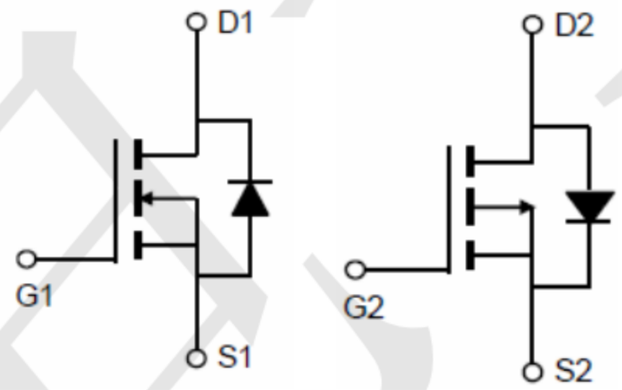
- Case: SOT23-6
- Shipping Qty:3000/7inch Tape& Reel

Package and Pin Configuration

SOT23-6



Circuit diagram



N-channel P-channel

Marking: 01CK

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

TECH PUBLIC PARAMETER		SYMBOL	N-Ch	P-Ch	UNITS
Drain-Source Voltage		V_{DS}	60	-60	V
Gate-Source Voltage		V_{GS}	±20	±20	V
Continuous Drain Current		I_D	500	-350	mA
Pulsed Drain Current (Note 4)		I_{DM}	1500	-1000	mA
Power Dissipation	T_a=25°C	P_D	950		mW
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150		°C
Typical Thermal resistance - Junction to Ambient (Note 3)		$R_{\theta JA}$	417		°C/W

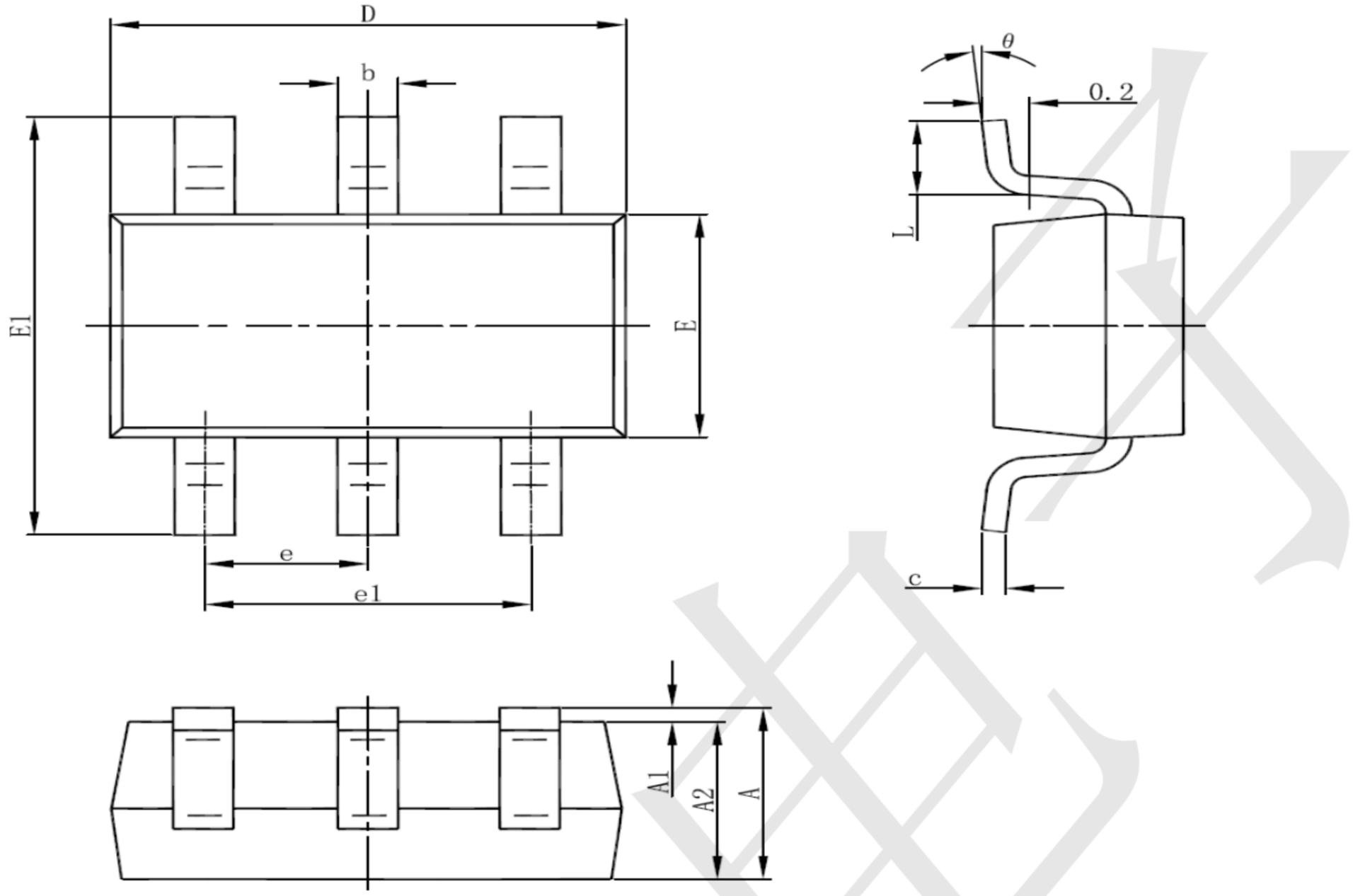
N-Channel Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D= 250uA	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D= 250uA	1.0	1.6	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}= 10V, I_D= 500mA	-	1.5	2.0	Ω
		V_{GS}= 4.5V, I_D= 250mA	-	2.0	3.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 60V, V_{GS}=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±10	uA
Dynamic (Note 5)						
Total Gate Charge	Q_g	V_{DS}=25V, I_D=500mA, V_{GS}=4.5V	-	0.95	-	nC
Gate-Source Charge	Q_{gs}		-	0.34	-	
Gate-Drain Charge	Q_{gd}		-	0.32	-	
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1.0MHZ	-	36	-	pF
Output Capacitance	Coss		-	11	-	
Reverse Transfer Capacitance	Crss		-	6.6	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=25V, I_D=500mA, V_{GS}=10V, R_G=6Ω (Note 1,2)	-	2.3	-	ns
Turn-On Rise Time	tr		-	20	-	
Turn-Off Delay Time	$td_{(off)}$		-	7	-	
Turn-Off Fall Time	tf		-	20	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	500	mA
Diode Forward Voltage	V_{SD}	I_S= 150mA, V_{GS}=0V	-	0.9	1.5	V

P-Channel Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=-250uA	-60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-1.0	-1.5	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-500mA	-	2.5	6	Ω
		V_{GS}=-4.5V,I_D=-200mA	-	3.0	7	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-48V,V_{GS}=0V	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
Dynamic (Note 5)						
Total Gate Charge	Q_g	V_{DS}=-25V, I_D=-100mA, V_{GS}=-4.5V	-	1.1	-	nC
Gate-Source Charge	Q_{gs}		-	0.3	-	
Gate-Drain Charge	Q_{gd}		-	0.2	-	
Input Capacitance	Ciss	V_{DS}=-25V, V_{GS}=0V, f=1.0MHZ	-	51	-	pF
Output Capacitance	Coss		-	15	-	
Reverse Transfer Capacitance	Crss		-	2.2	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=-25V, I_D=-100mA, V_{GS}=-10V, R_G=6Ω (Note 1,2)	-	4.8	-	ns
Turn-On Rise Time	tr		-	19	-	
Turn-Off Delay Time	$td_{(off)}$		-	52	-	
Turn-Off Fall Time	tf		-	32	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	-350	mA
Diode Forward Voltage	V_{SD}	I_S=-500mA, V_{GS}=0V	-	-0.9	-1.5	V

SOT23-6 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°