TECH PUBLIC
台舟电子

TPM20V7PLS8

P-Channel Enhancement Mode MOSFET

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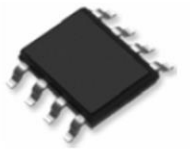
GENERAL FEATURES

BV_{DSS}	-20V
$R_{DS(ON)}$	22mΩ @-4.5V (Max)
	25mΩ @-3.3V (Max)
I_D	-7.5A

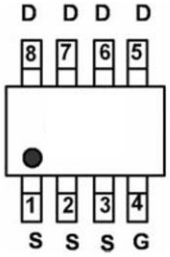
Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

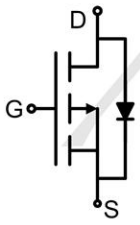
Package and Pin Configuration



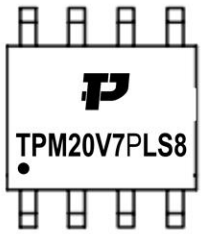
SOP-8 top view



Circuit diagram



Marking



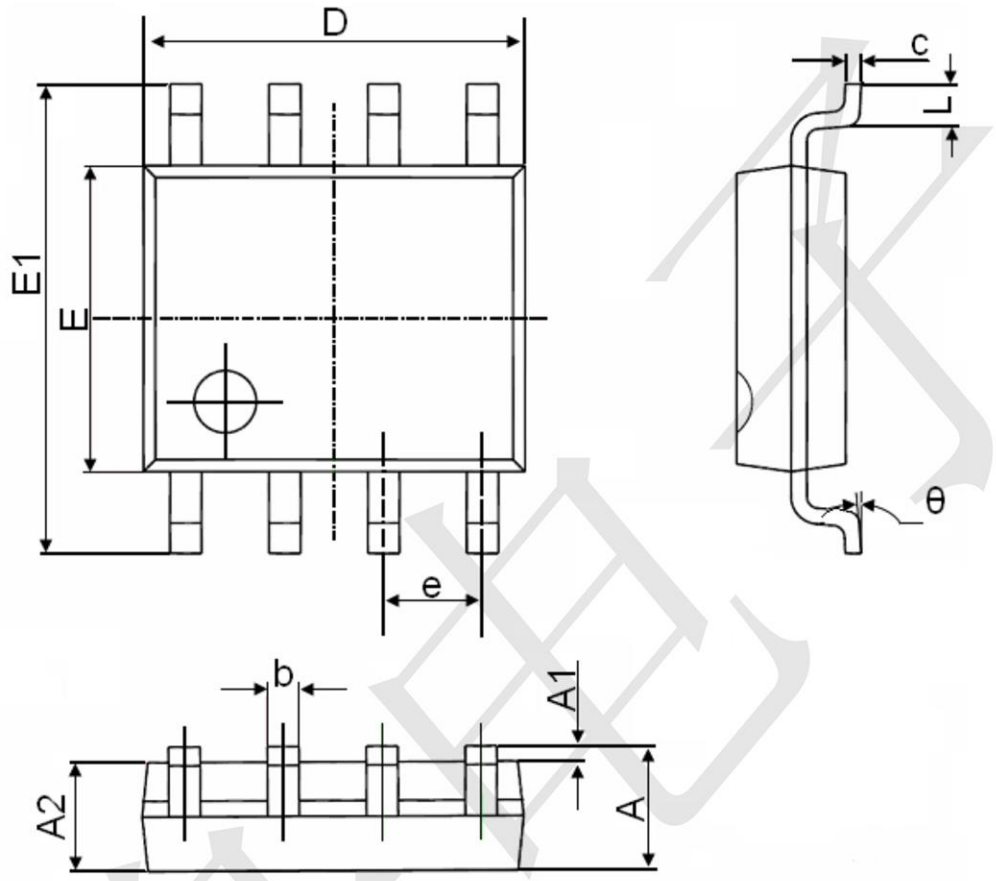
Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous (T_A=25°C)	I_D	-7.5	A
Drain Current-Continuous (T_A=70°C)		-6.4	
Drain Current-Pulsed (T_A=25°C)[1]	I_{DM}	-28	A
Power Dissipation (T_A=25°C)	P_D	3.1	W
Power Dissipation (T_A=70°C)		2.4	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	40	°C/W
Operating Junction Temperature Range	T_J	-50 To +150	°C
Storage Temperature Range	T_{STG}	-50 To +150	°C

Electrical Characteristics (Tj=25℃unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250uA	-20	-	-	V
Zero Gate Voltage Drain Current, T_A=25°C	I_{DSS}	V_{DS}=-20V, V_{GS}=0V	-	-	-1	uA
Zero Gate Voltage Drain Current, T_A=125°C		V_{DS}=-12V, V_{GS}=0V	-	-	-100	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=-250uA	-0.4	-0.6	-1.0	V
Drain-Source On-State Resistance[2]	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-7A	-		22	mΩ
		V_{GS}=-3.3V, I_D=-5A	-		25	mΩ
		V_{GS}=-2.5V, I_D=-2A	-		33	
Dynamic and Switching Characteristics						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-5A, V_{GS}=-4.5V	-	15.4	-	nC
Gate-Source Charge	Q_{gs}		-	2.0	-	
Gate-Drain Charge	Q_{gd}		-	3.6	-	
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=-4.5V, I_D=-1A, R_G=3.3Ω, V_{DD}=-10V	-	8	-	nS
Rise Time	T_r		-	15.5	-	
Turn-Off Delay Time	$T_{d(off)}$		-	42	-	
Fall Time	T_f		-	10.5	-	
Input Capacitance	C_{iss}	V_{DS}=-10V, V_{GS}=0V, F=1MHz	-	1685	-	pF
Output Capacitance	C_{oss}		-	234	-	
Reverse Transfer Capacitance	C_{rss}		-	187	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Source Drain Current (Body Diode)	I_{SD}	T_A=25°C	-	-	-1.5	A
Diode Forward Voltage[2]	V_{SD}	V_{GS}=0V, I_{SD}=-5A, T_J=25°C	-	-0.85	-1.2	V

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°