TECH PUBLIC
台舟电子

TPM20PB3S6

Dual P-Channel 20V (D-S) MOSFET

www.sot23.com.tw

Features

- V_{DS} = -20V,I_D = -3A
  $R_{DS(ON)}$ =120m Ω @ V_{GS}=-2.5V (Typ)
  $R_{DS(ON)}$ =85m Ω @ V_{GS}=-4.5V (Typ)
- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

Application

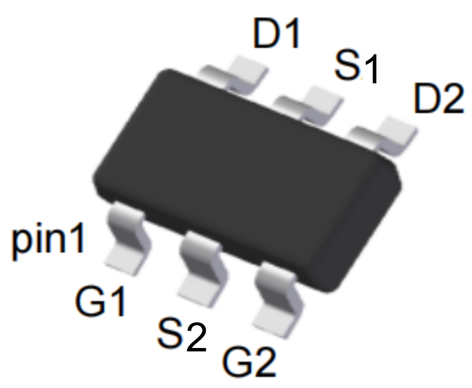
- PWM applications
- Power management

Ordering Information

- Package: SOT23-6
- Shipping Qty:3000/7inch Tape□Reel

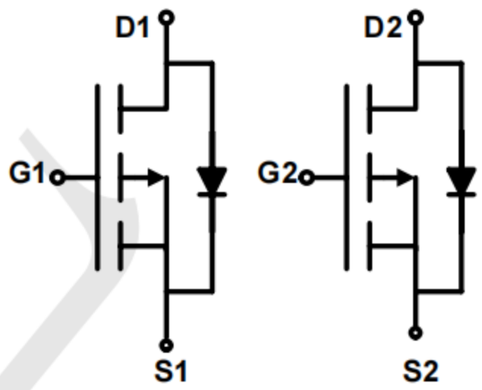
Package and Pin Configuration

SOT23-6



Top View

Circuit diagram



Marking:312F

ABSOLUTE MAXIMUM RATINGS(TA=25℃unless otherwise noted)

TECH PUBLIC Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	I_D	-3	A
	I_{DM}	-10	A
Maximum Power Dissipation	P_D	1.1	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

THERMAL CHARACTERISTICS

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	110	℃/W

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ELECTRICAL CHARACTERISTICS (TA=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±10V,V_{DS}=0V			±100	nA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-0.5		-1	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-3A		85	100	mΩ
		V_{GS}=-2.5V, I_D=-2A		120	150	
Forward Transconductance	g_{FS}	V_{DS}=-5V,I_D=-3A		7		S
DYNAMIC CHARACTERISTICS (Note4)						
Input Capacitance	C_{lss}	V_{DS}=-10V,V_{GS}=0V, F=1.0MHz		300		PF
Output Capacitance	C_{oss}			65		PF
Reverse Transfer Capacitance	C_{rss}			50		PF
SWITCHING CHARACTERISTICS (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-10V,I_D=-1A V_{GS}=-4.5V,R_{GEN}=6Ω		12		nS
Turn-on Rise Time	t_r			15		nS
Turn-Off Delay Time	$t_{d(off)}$			80		nS
Turn-Off Fall Time	t_f			45		nS
Total Gate Charge	Q_g	V_{DS}=-10V,I_D=-3A,V_{GS}=-4.5V		6		nC
Gate-Source Charge	Q_{gs}			1		nC
Gate-Drain Charge	Q_{gd}			2.4		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=-1.25A			-1.2	V

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

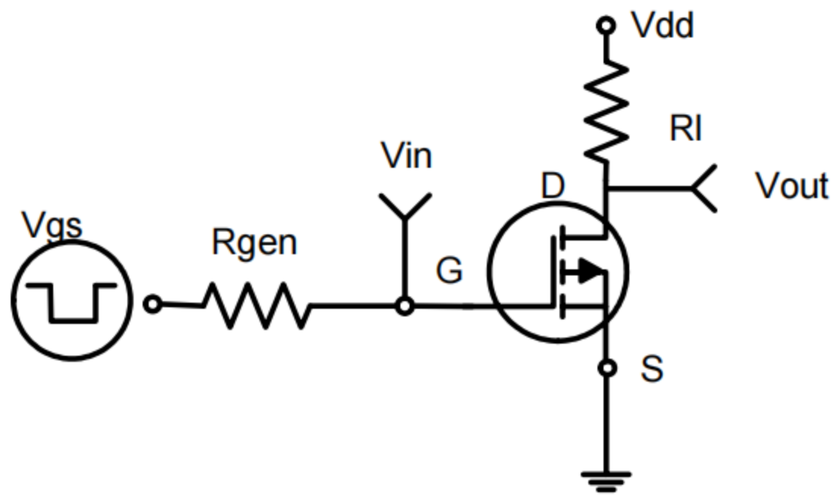


Figure1:Switching Test Circuit

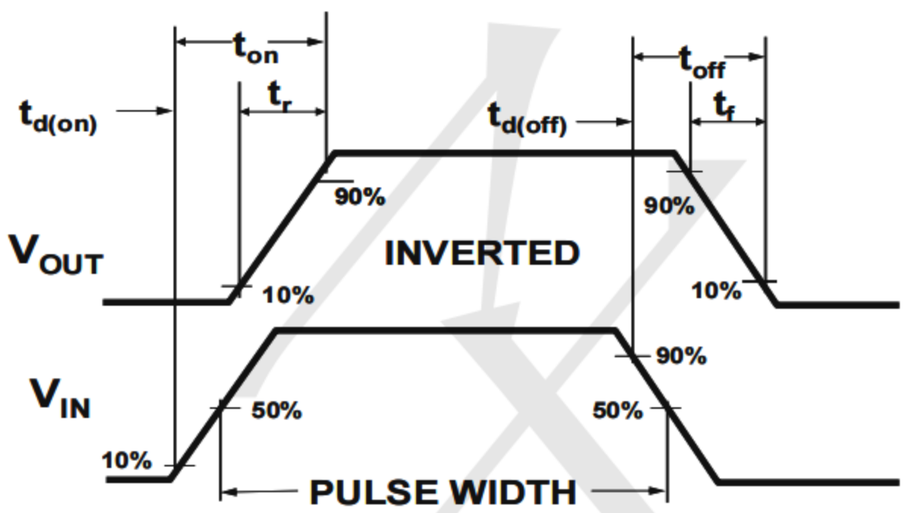


Figure 2:Switching Waveforms

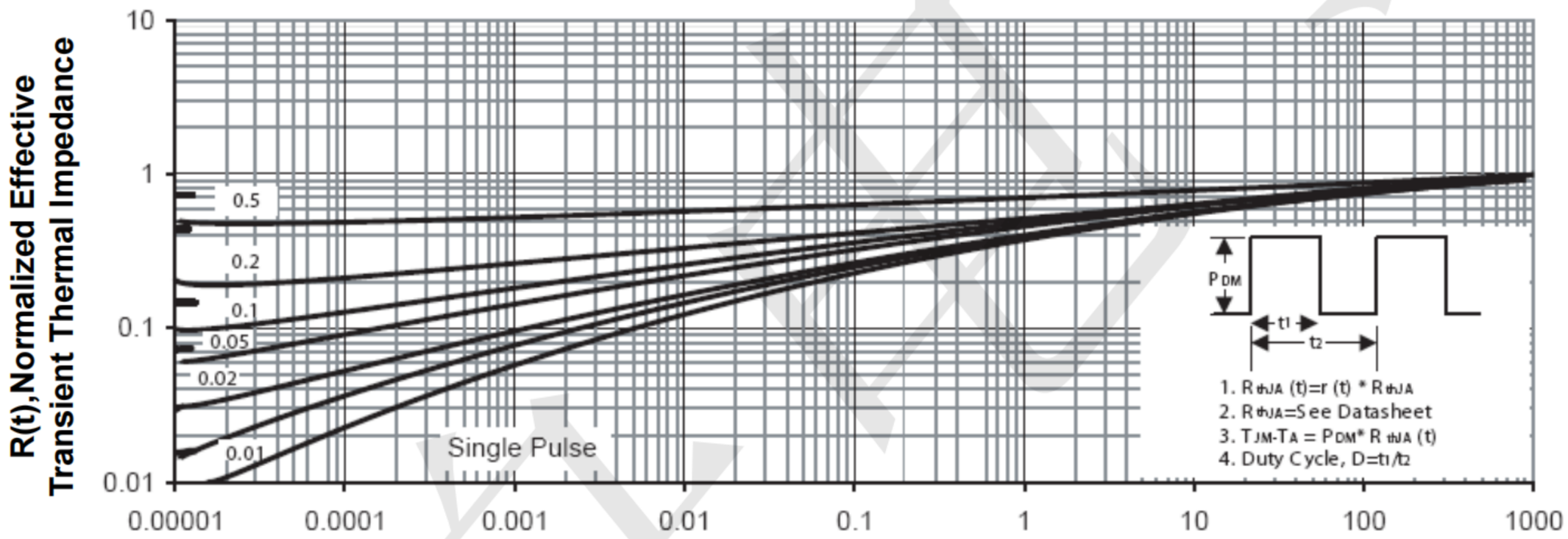
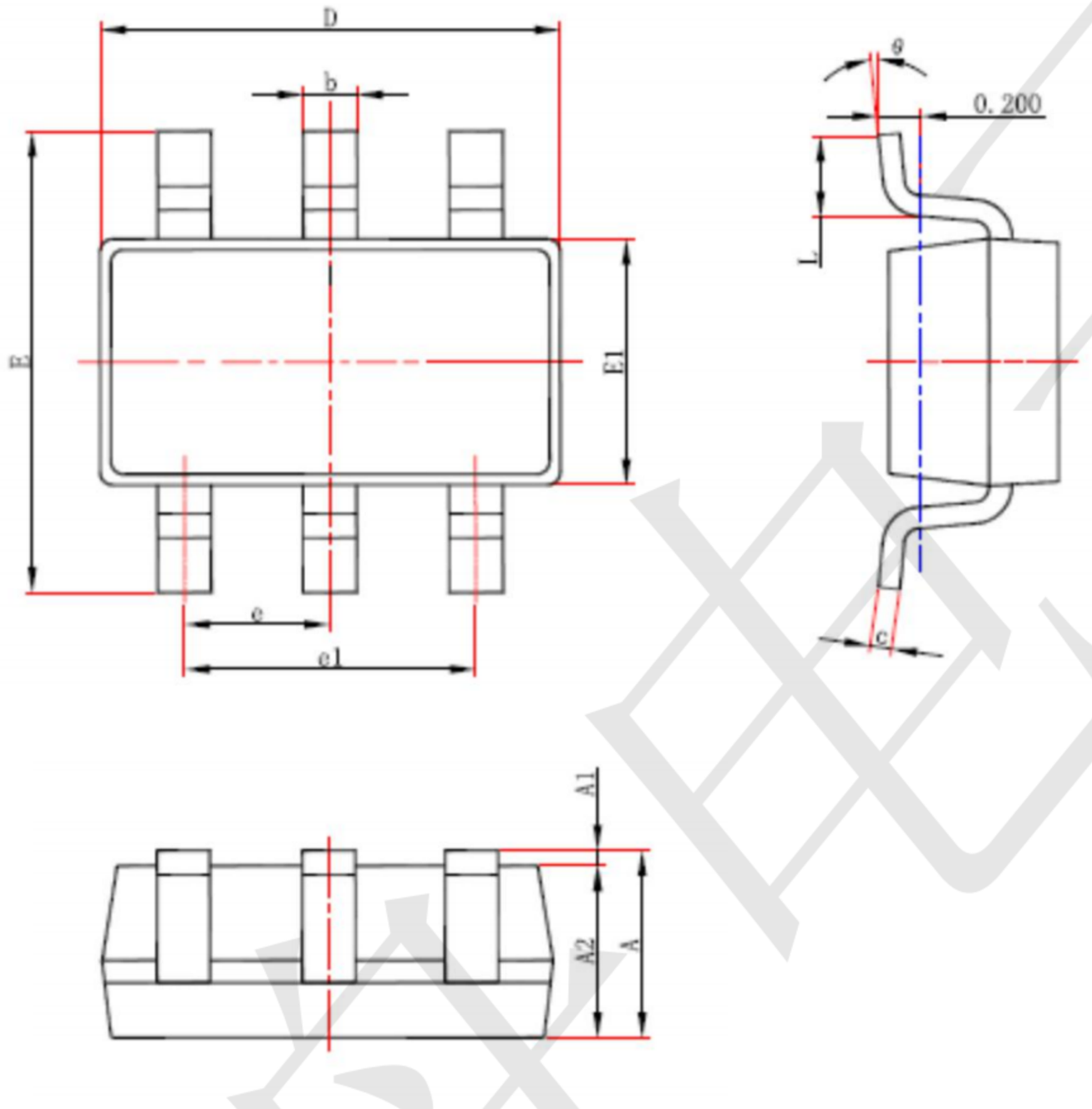


Figure 3: Normalized Maximum Transient Thermal Impedance

SOT23-6 Package Outline Dimensions



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
E1	1.500	1.700	0.059	0.067
E	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°