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FDN308P

P-Channel Mosfet

www.sot23.com.tw

- **Product Summary**
- V_{DSS}= -20V, I_D= -2.8A
  $R_{DS(on)}$ 80mΩ@-2.5V（Typ）
  110mΩ@-4.5V（Typ）
- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

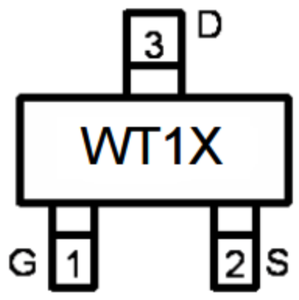
Application

- PWM applications
- Load switch
- Power management

Package and Pin Configuration

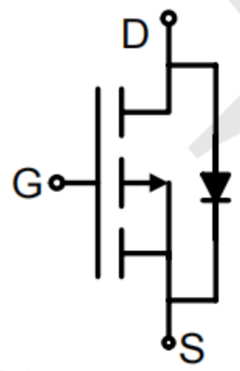
SOT-23

Marking:



Marking:WT1X
"WT1"is part number,fixed
"X"is internal code

Circuit diagram



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	I_D	-2.8	A
	I_{DM}	-10	A
Maximum Power Dissipation	P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

THERMAL CHARACTERISTICS

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	100	℃/W

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}=±8V,V_{DS}=0V			±100	nA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-0.45		-1	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-2.8A		80	100	
		V_{GS}=-2.5V, I_D=-2A		110	150	
Forward Transconductance	g_{FS}	V_{DS}=-5V,I_D=-2.8A		9		S
DYNAMIC CHARACTERISTICS (Note4)						
Input Capacitance	C_{lss}	V_{DS}=-10V,V_{GS}=0V, F=1.0MHz		1160		PF
Output Capacitance	C_{oss}			210		PF
Reverse Transfer Capacitance	C_{rss}			125		PF
SWITCHING CHARACTERISTICS (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-10V,I_D=-2.8A V_{GS}=-4.5V,R_{GEN}=3Ω		13.6	27.2	nS
Turn-on Rise Time	t_r			8.6	17.2	nS
Turn-Off Delay Time	$t_{d(off)}$			73.6	147.2	nS
Turn-Off Fall Time	t_f			34.6	69.2	nS
Total Gate Charge	Q_g	V_{DS}=-10V,I_D=-2.8A,V_{GS}=-4.5V		9.6	12.7	nC
Gate-Source Charge	Q_{gs}			1.1		nC
Gate-Drain Charge	Q_{gd}			2.6		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=-0.75A			-1.2	V
Diode Forward Current (Note 2)	I_S				-2.8	A

Typical Electrical and Thermal Characteristics

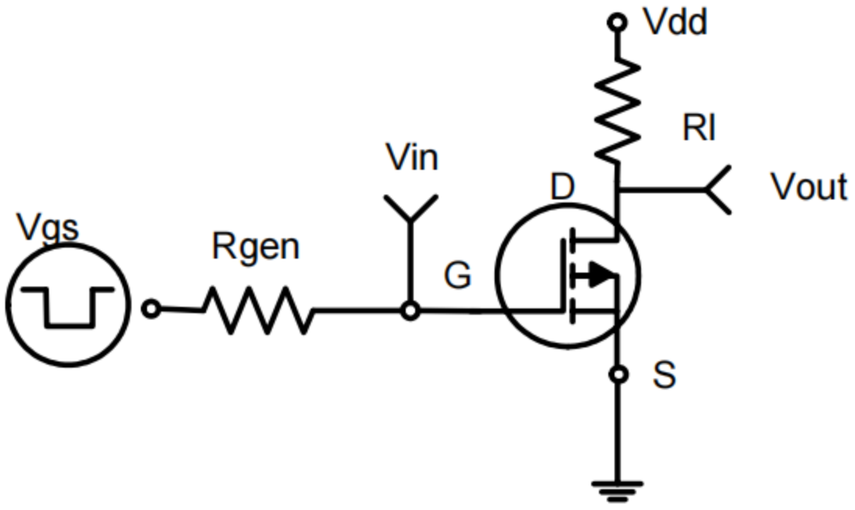


Figure1:Switching Test Circuit

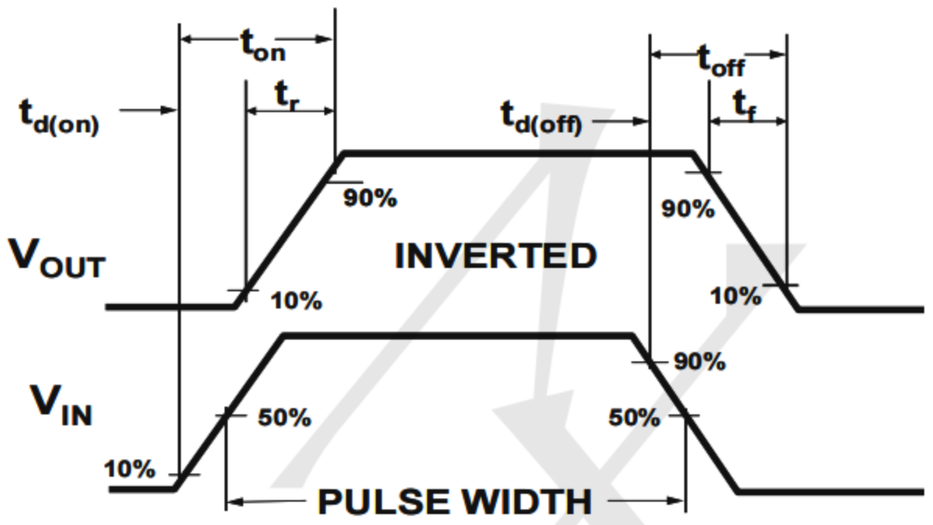


Figure 2:Switching Waveforms

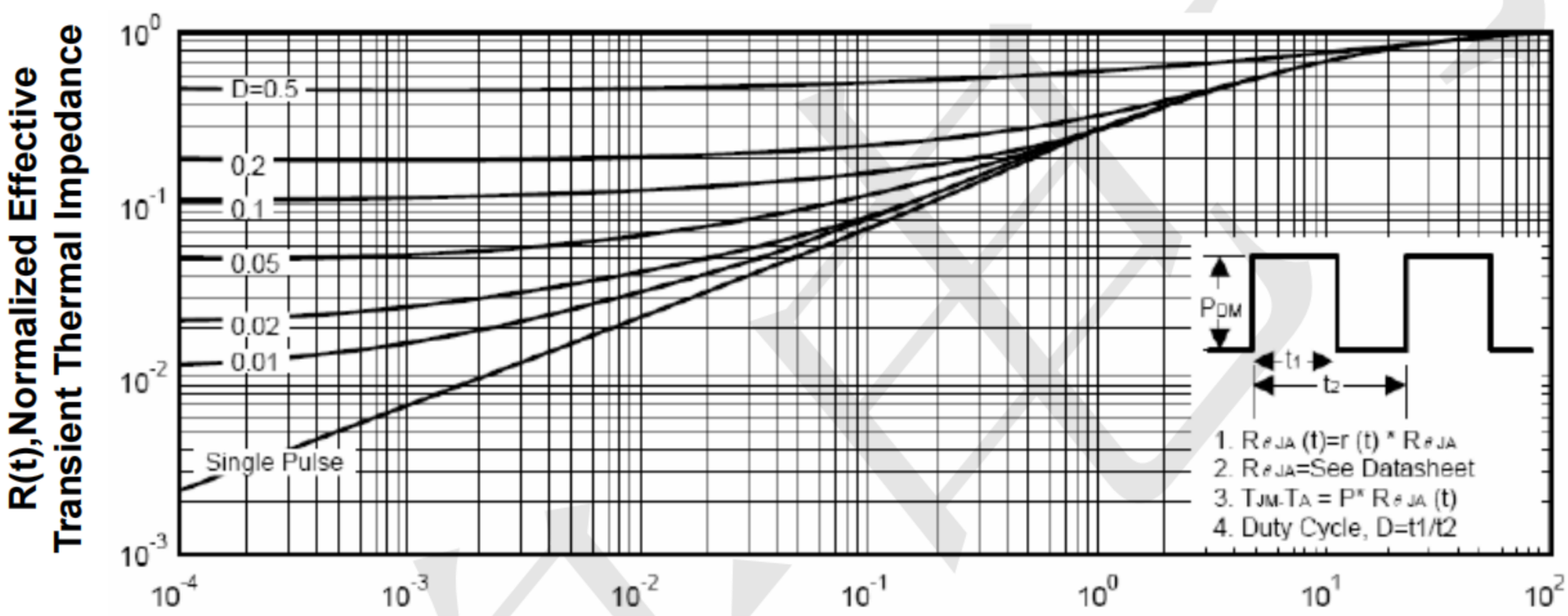
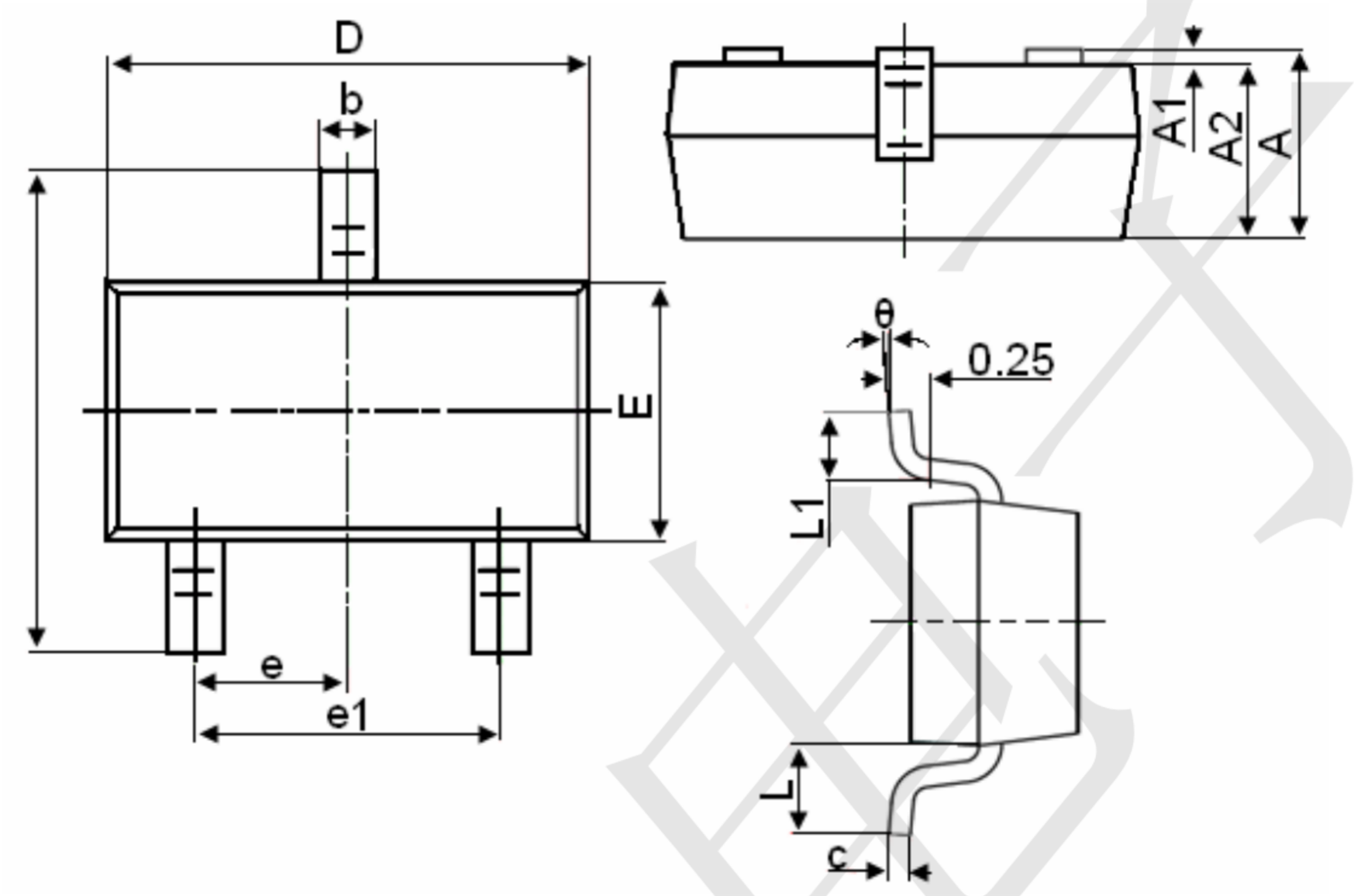


Figure 3: Normalized Maximum Transient Thermal Impedance

SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

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