



● Product Summary

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

Application

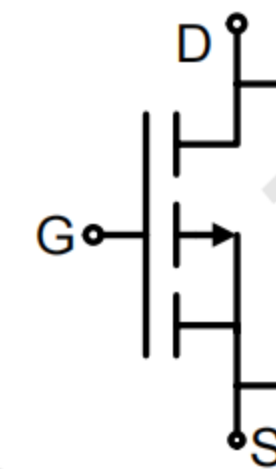
- PWM applications
- Load switch
- Power management

Package and Pin Configuration

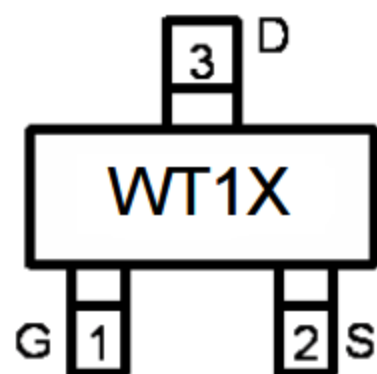
SOT-23



Circuit diagram



Marking:



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

ABSOLUTE MAXIMUM RATINGS(TA=25°C 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	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	100	°C/W
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ELECTRICAL CHARACTERISTICS (TA=25°C 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 _{iss}	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

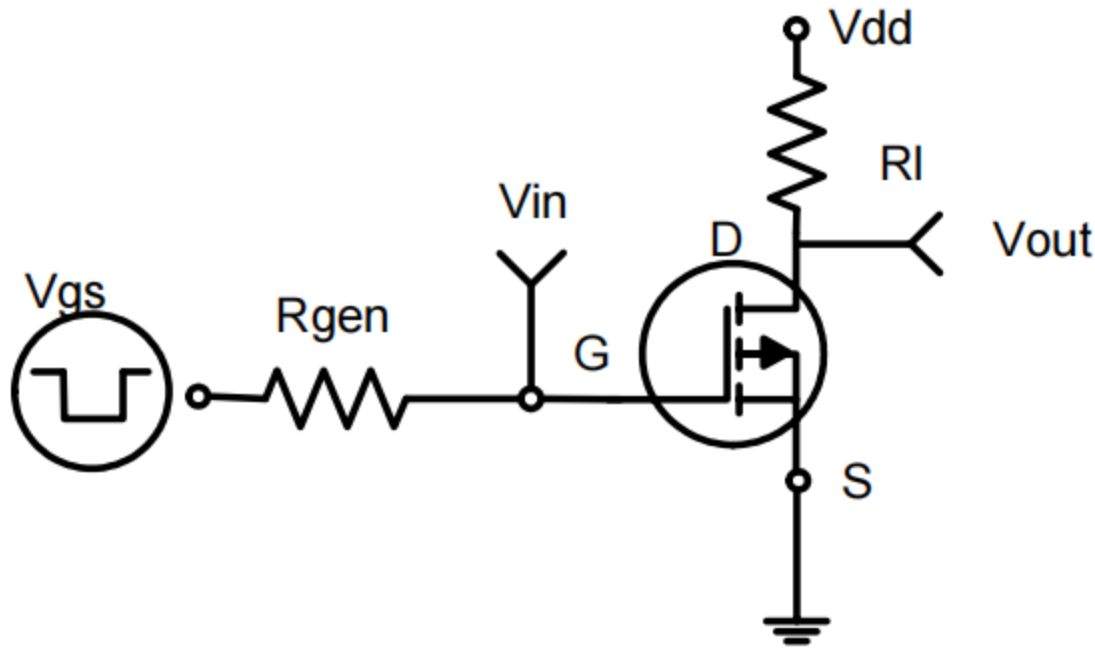


Figure 1: Switching Test Circuit

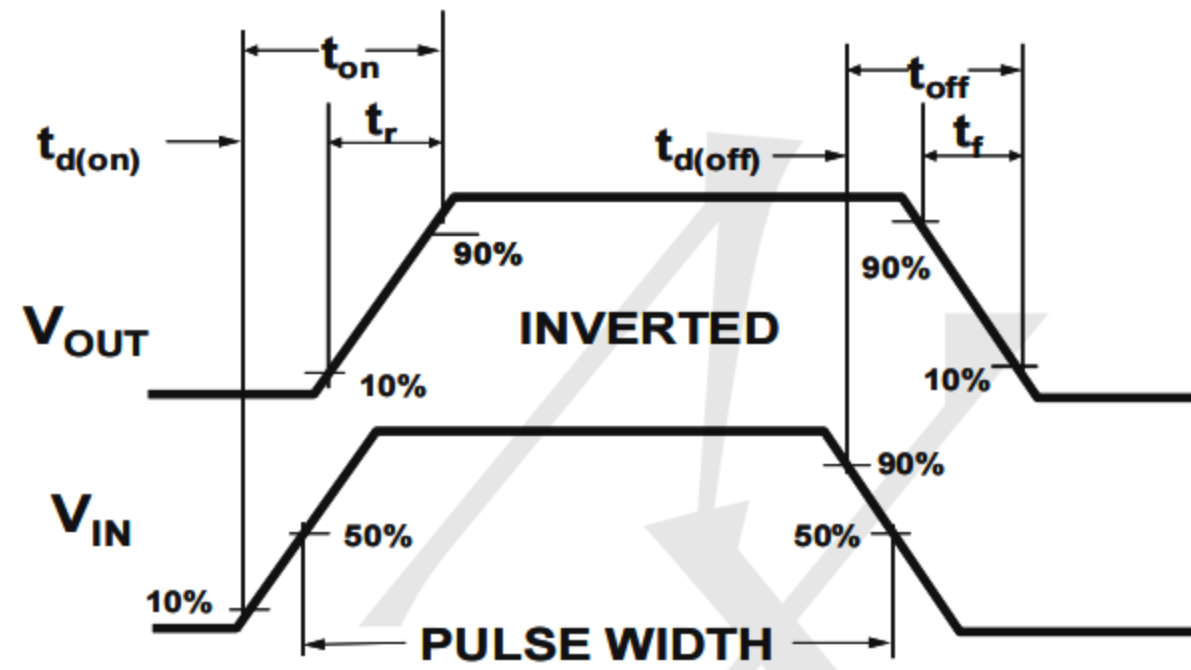


Figure 2: Switching Waveforms

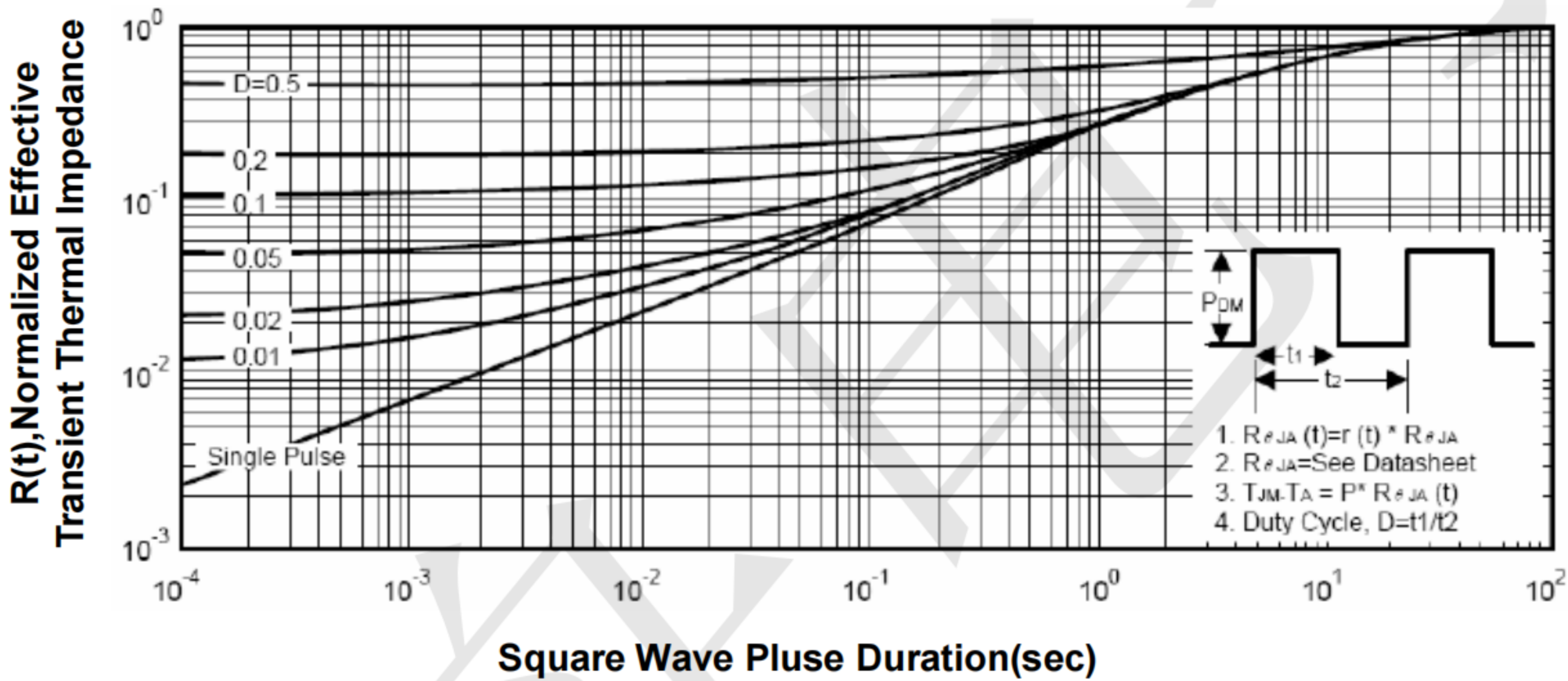
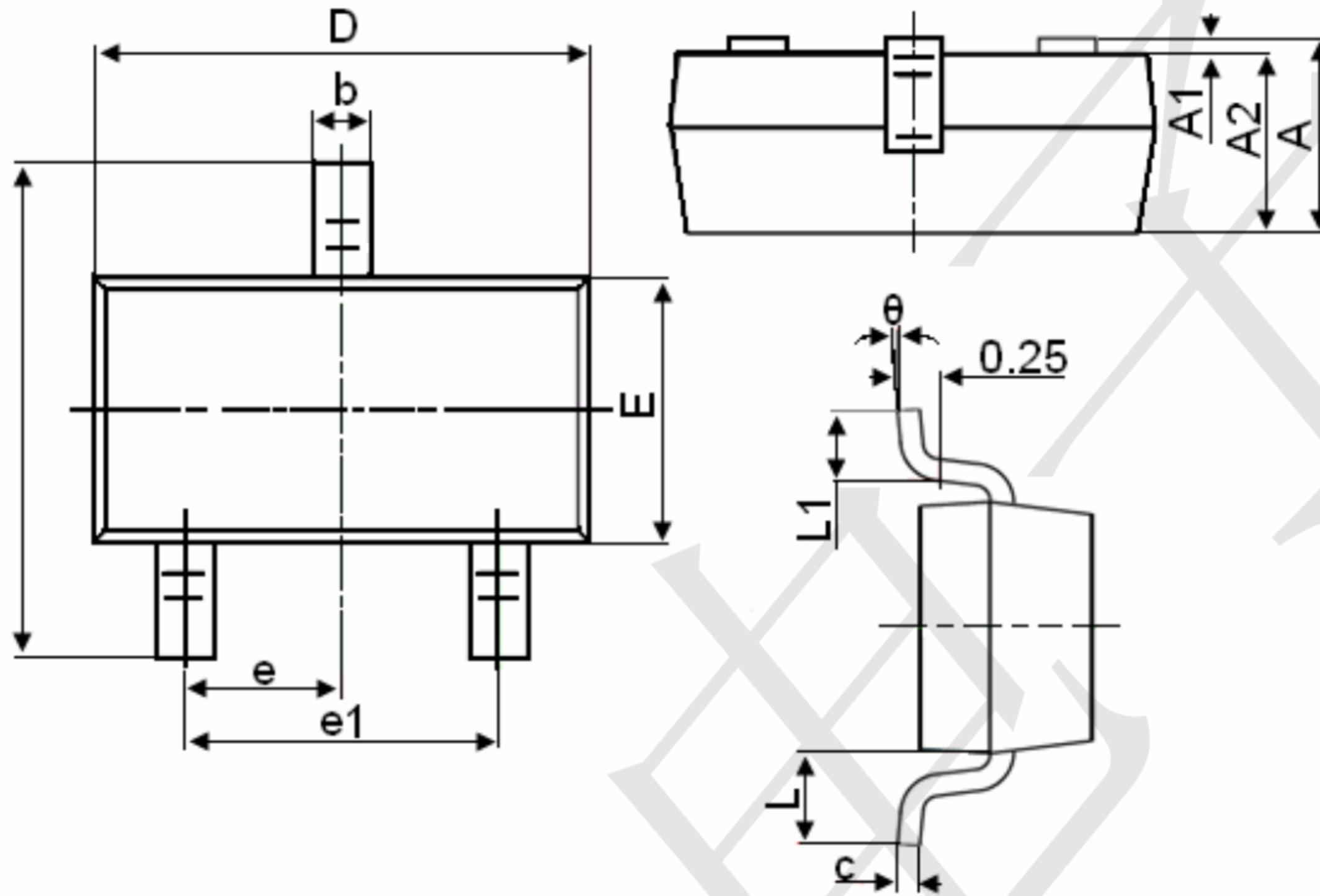


Figure 3: Normalized Maximum Transient Thermal Impedance



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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