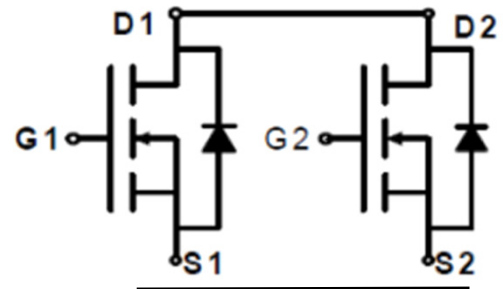


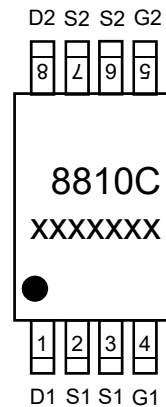
Description

The PDNM8TP8810C uses advanced trench technology to provide excellent $R_{DS(on)}$, low gate charge. This device is suitable for use as a load switch or in PWM applications.

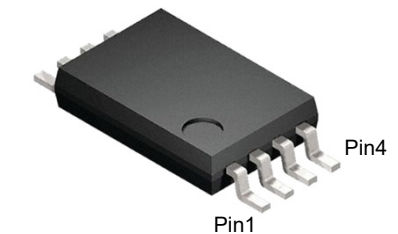
MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)(Typ)$	$I_D(A)$
20	15.5 @ $V_{GS} = 4.5V$	7.0
	18 @ $V_{GS} = 2.5V$	



Circuit Diagram



Marking (Top View)



TSSOP-8

Feature

- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

Applications

- PWM application
- Load switch
- Power management
- DC-DC Converters
- Wireless Chargers

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	7.0	A
Pulsed Drain Current	I_{DM}	28	A
Total Power Dissipation	P_D	1.5	W
Thermal Resistance Junction-to-Ambient ⁽²⁾	$R_{\theta JA}$	64	$^{\circ}C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}C$

Notes:

1. Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.
2. When mounted on 1 inch square copper board $t \leq 10sec$ The value in any given application depends on the user's specific board design

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1.0	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.7	1.25	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 7A$	-	15.5	20	m Ω
		$V_{GS} = 2.5V, I_D = 4A$	-	18	25	
Forward Transconductance	g_{FS}	$V_{DS} = 5V, I_D = 7A$	-	50	-	S
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$	-	0.6	1.0	V
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V,$ $f = 1.0MHz$	-	600	-	pF
Output Capacitance	C_{oss}		-	100	-	
Reverse Transfer Capacitance	C_{rss}		-	80	-	
Turn-on Delay Time	$t_{d(on)}$	$V_{DS} = 10V, V_{GS} = 4.5V,$ $R_G = 3\Omega, R_L = 1.45\Omega$	-	7.0	-	ns
Turn-on Rise Time	t_r		-	10	-	
Turn-Off Delay Time	$t_{d(off)}$		-	32	-	
Turn-Off Fall Time	t_f		-	11	-	
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V,$ $I_D = 7A$	-	7.0	14	nC
Gate-Source Charge	Q_{gs}		-	1.0	-	
Gate-Drain Charge	Q_{gd}		-	2.0	-	

Notes:

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Typical Characteristics

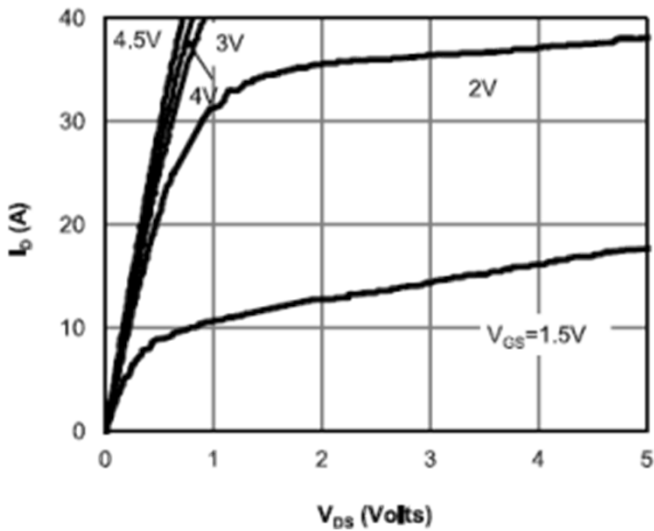


Fig.1 Output Characteristics

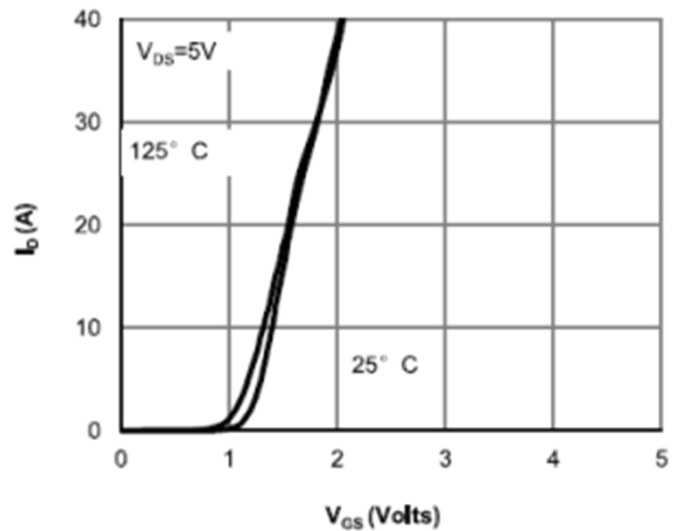


Fig.2 Typical Transfer Characteristic

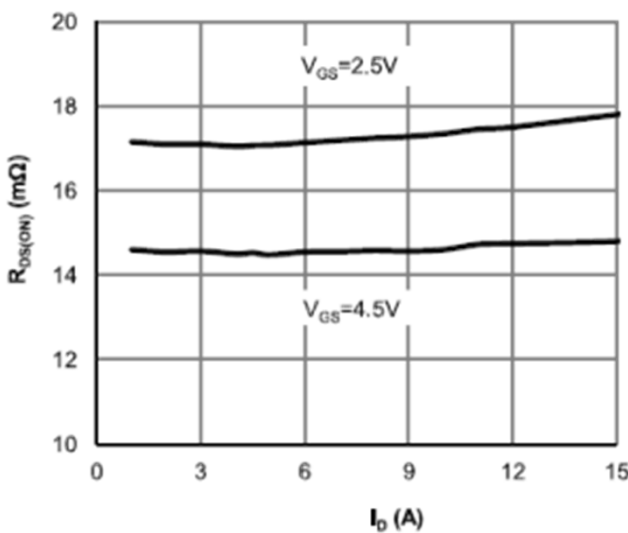


Fig.3 Typical On-Resistance vs Drain Current and Gate Voltage

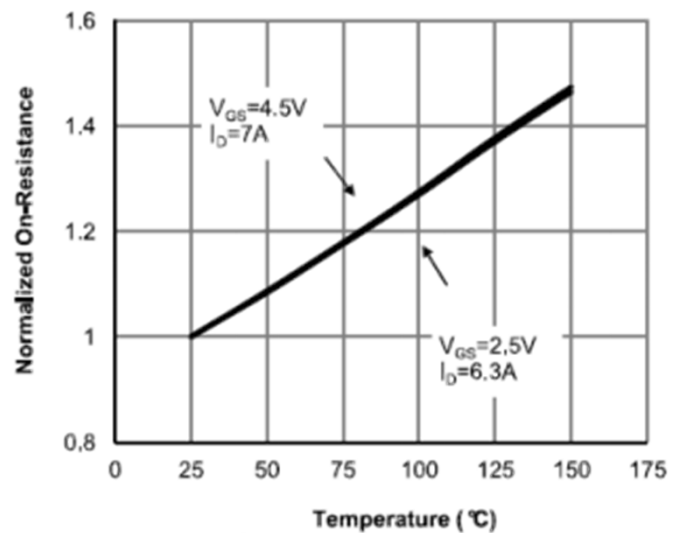


Fig.4 On-Resistance Variation with Temperature

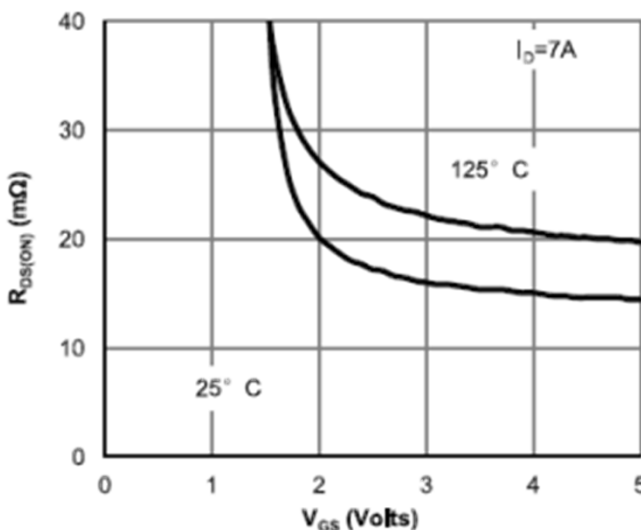


Fig.5 On-Resistance vs. Gate-Source Voltage

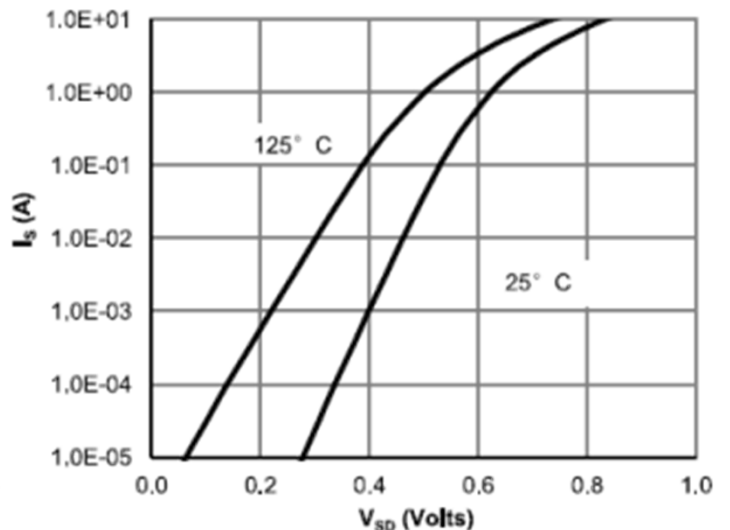


Fig.6 Body-Diode Characteristics

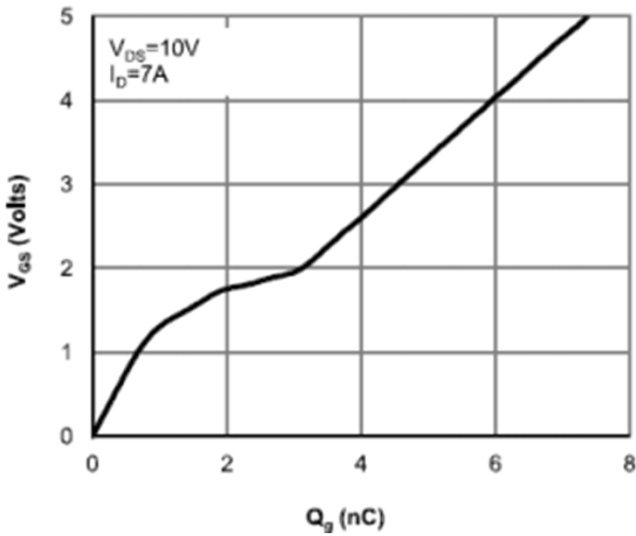


Fig.7 Gate Charge Characteristics

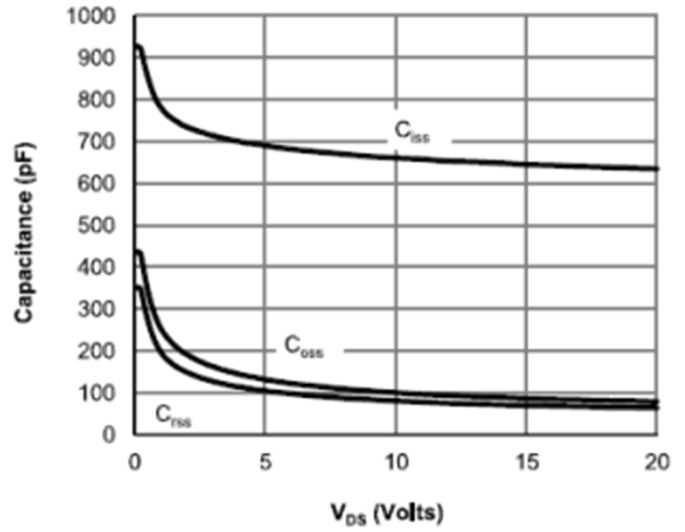


Fig.8 Typical Junction Capacitance

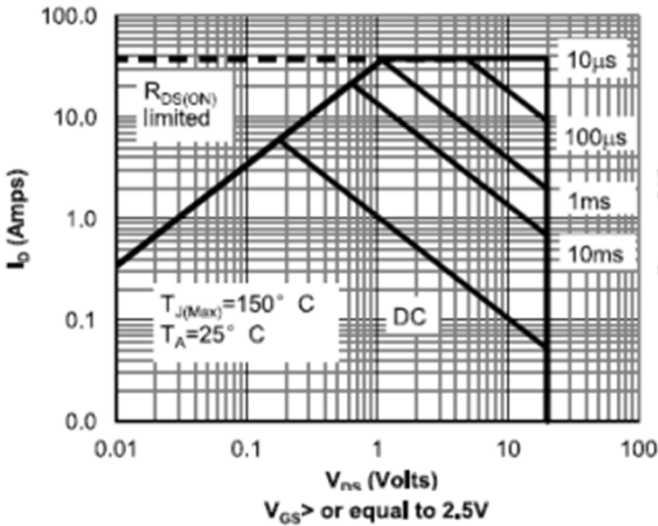


Fig.9 Safe Operation Area

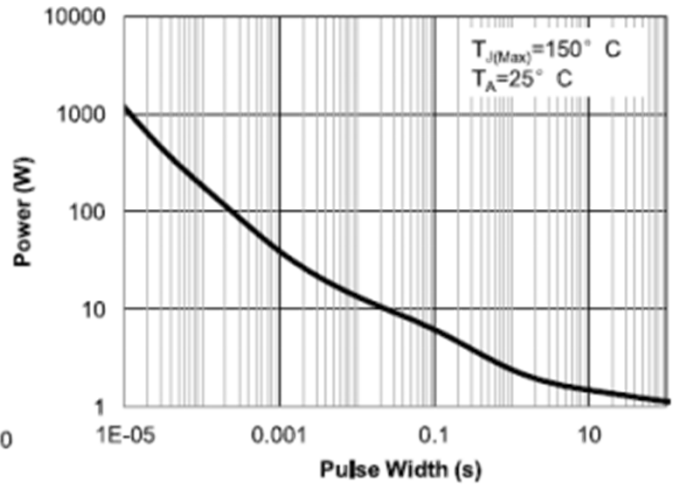


Fig.10 Single Pulse Power Rating Junction-To-Ambient

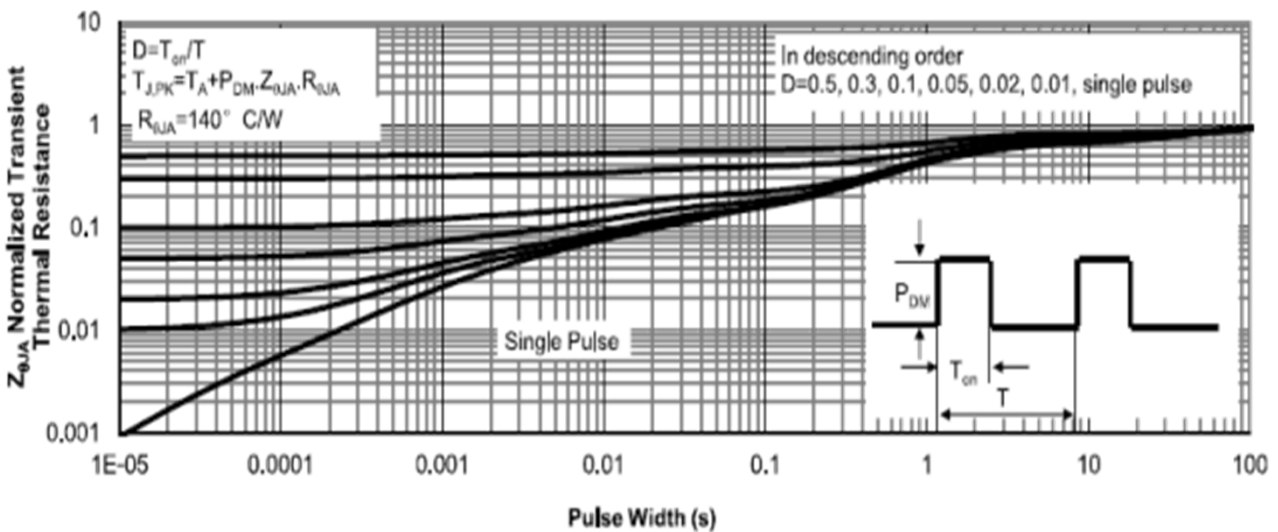
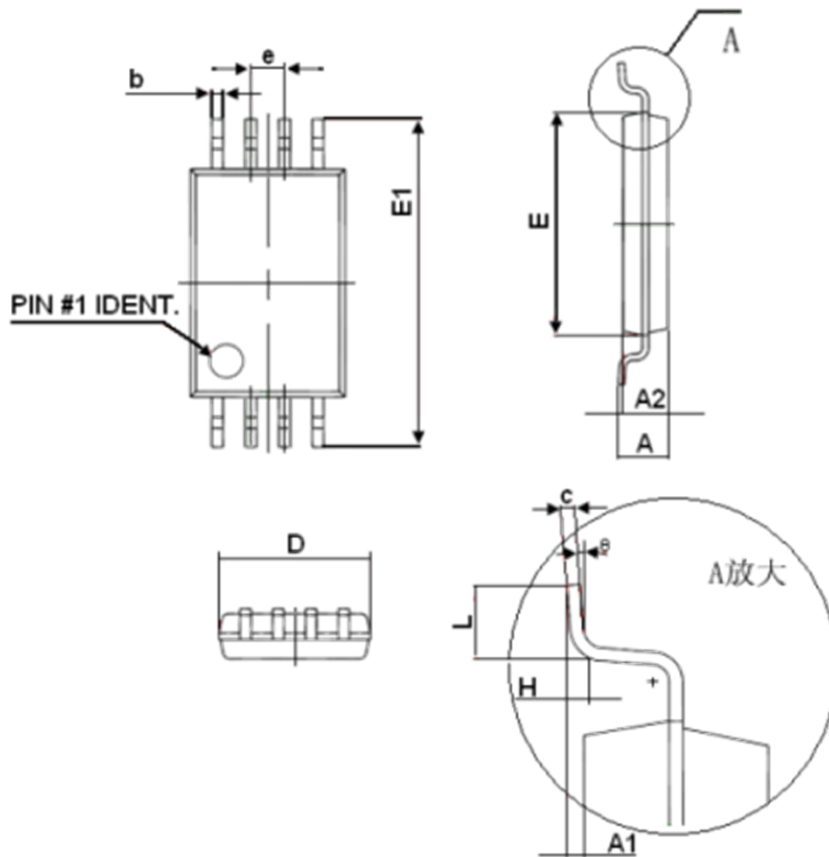


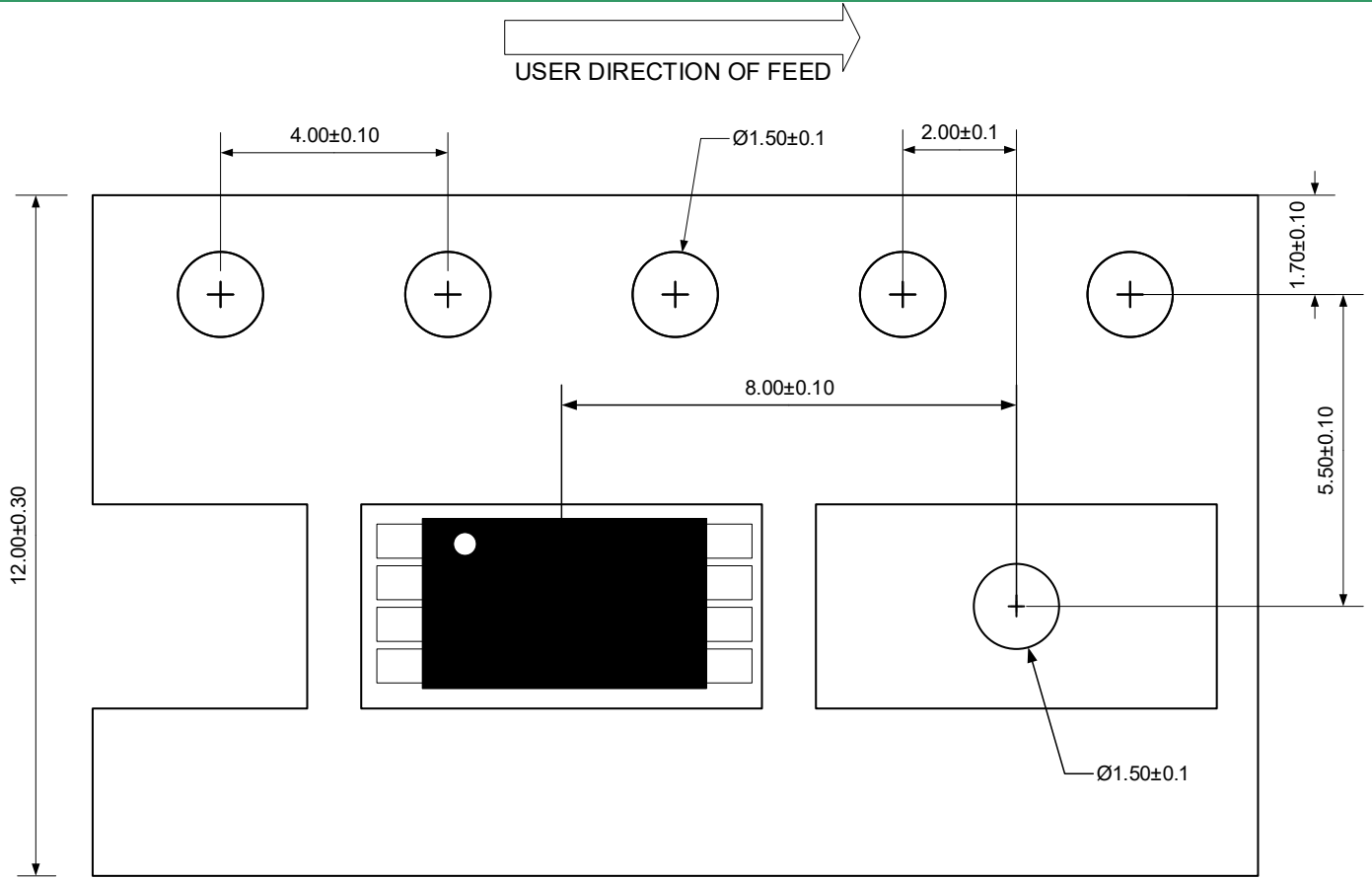
Fig.11 Normalized Maximum Transient Thermal Impedance

Product Dimension (TSSOP-8)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
D	2.90	3.30	0.114	0.130
E	4.30	4.70	0.169	0.185
b	0.19	0.30	0.007	0.012
c	0.09	0.20	0.004	0.008
E1	6.25	6.55	0.246	0.258
A	-	1.10	-	0.043
A2	0.80	1.00	0.031	0.039
A1	0.02	0.15	0.001	0.006
e	0.65 BSC		0.026 BSC.	
L	0.50	0.70	0.020	0.028
H	0.25 Typ		0.010 Typ	
θ	1°	7°	1°	7°

Load With Information




Unit:mm

Ordering Information

Device	Package	Reel	Shipping
PDNM8TP8810C	TSSOP-8	13"	5000 / Tape & Reel


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