Low Vcesat NPN Epitaxial Planar Transistor

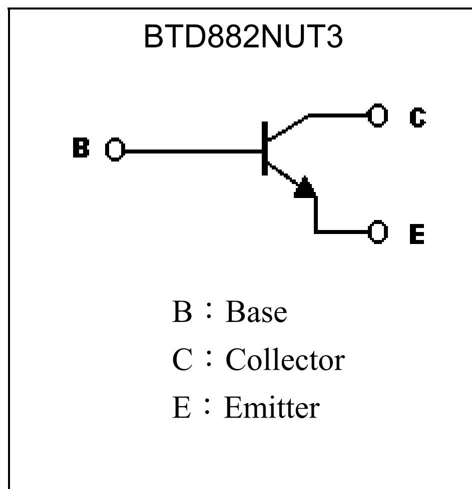
BTD882NUT3

BV_{CEO}	30V
I_C	3A

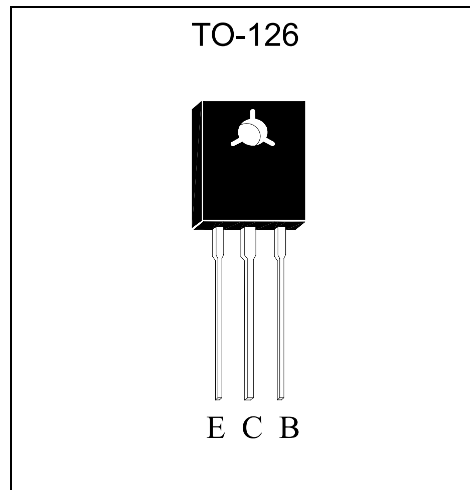
Features

- Low $V_{CE(sat)}$, 0.2V typ. at I_C / I_B = 2A / 0.2A
- Excellent current gain characteristics
- Complementary to BTB772NUT3
- Pb-free lead plating and halogen-free package

Symbol

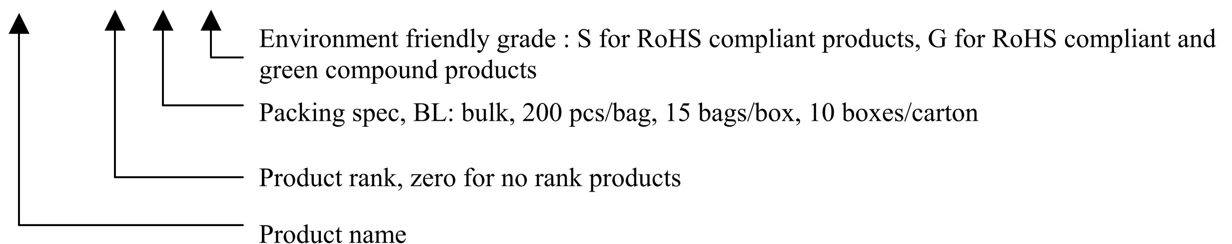


Outline



Ordering Information

Device	Package	Shipping
BTD882NUT3-X-BL-X	TO-126 (Pb-free lead plating package)	200 pcs / bag, 3,000 pcs/box , 30,000 pcs/carton



Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	40	V
Collector-Emitter Voltage		V_{CEO}	30	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	3	A
	Pulse		7 *1	A
Power Dissipation	Ta=25℃	P_D	1	W
	Tc=25℃		10	
Operating Junction and Storage Temperature Range		Tj ; Tstg	-55~+150	°C

Note : *1. Single Pulse Pw≦350μs,Duty≦2%.

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient, max	$R_{\theta JA}$	125	°C/W
Thermal Resistance, Junction-to-Case, max	$R_{\theta JC}$	12.5	

Characteristics (Ta=25°C)

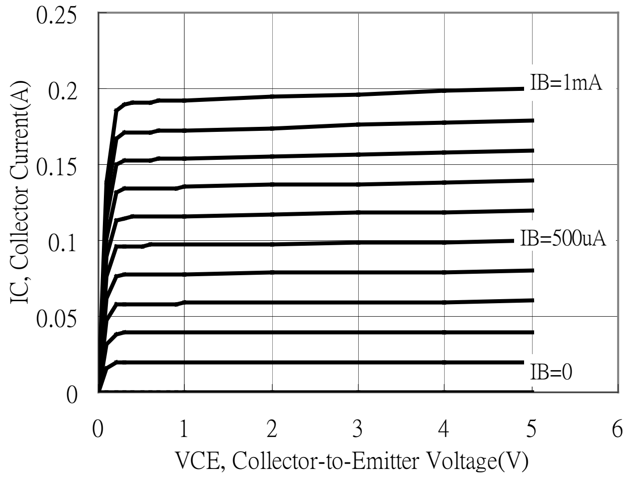
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	40	-	-	V	I_C=50μA, I_E=0
BV_{CEO}	30	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	9	-	-	V	I_E=50μA, I_C=0
I_{CBO}	-	-	100	nA	V_{CB}=40V, I_E=0
I_{EBO}	-	-	100	nA	V_{EB}=6V, I_C=0
*$V_{CE(sat)}$	-	0.2	0.5	V	I_C=2A, I_B=0.2A
*$V_{BE(sat)}$	-	1	1.5	V	I_C=2A, I_B=0.2A
*h_{FE} 1	100	-	-	-	V_{CE}=2V, I_C=20mA
*h_{FE} 2	160	-	320	-	V_{CE}=2V, I_C=1A
f_T	-	90	-	MHz	V_{CE}=5V, I_C=0.1A, f=100MHz
Cob	-	17	-	pF	V_{CB}=10V, f=1MHz

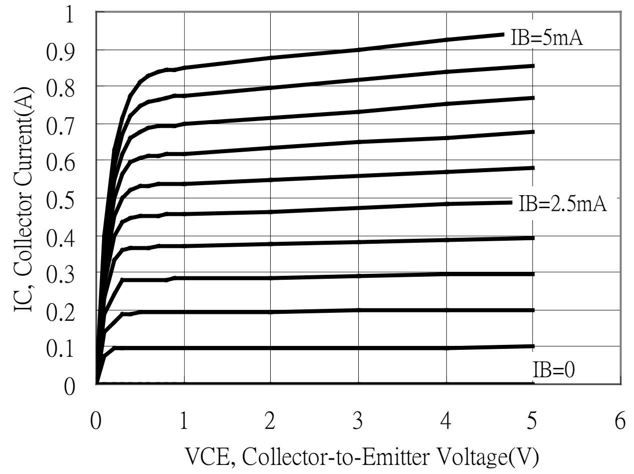
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

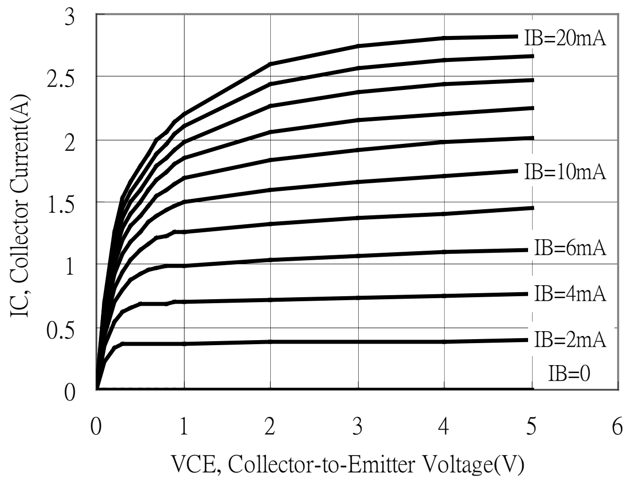
Classification Of h_{FE} 2

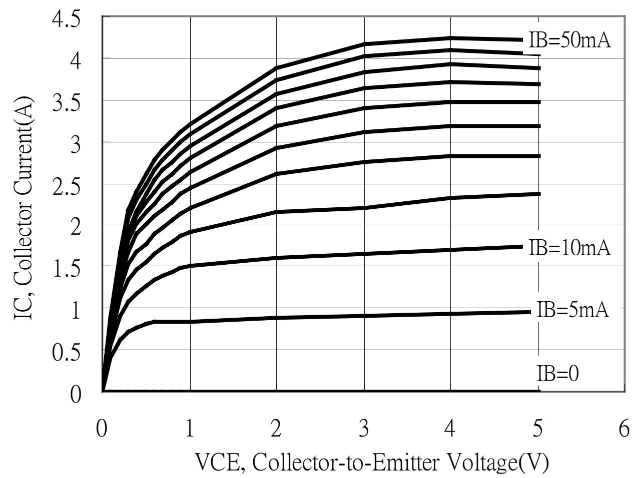
Rank	P
Range	160~320

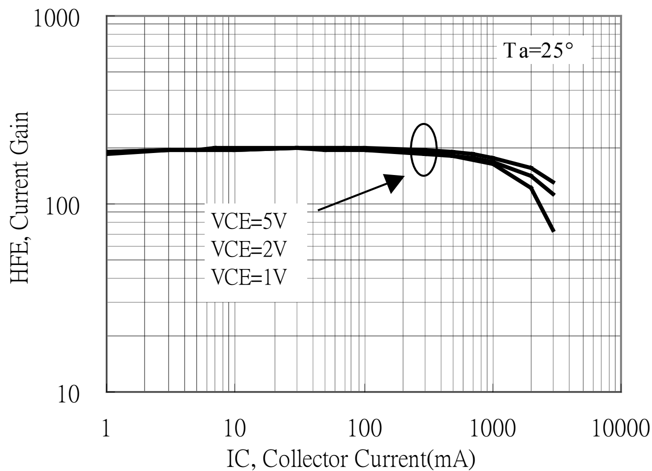
Typical Characteristics

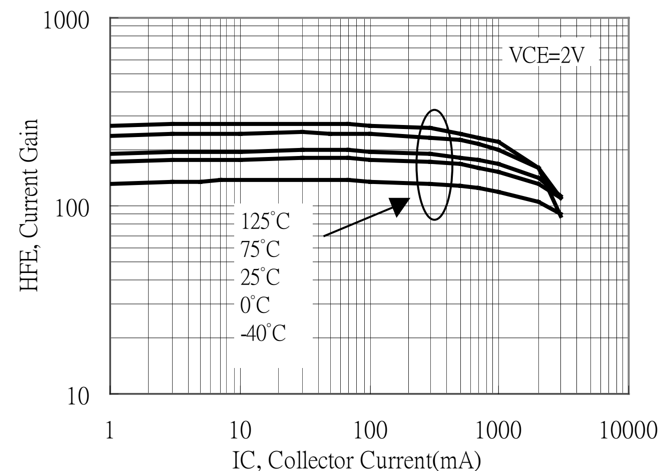




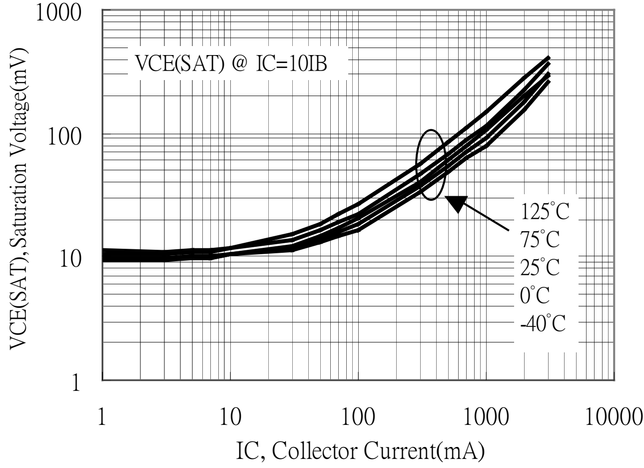


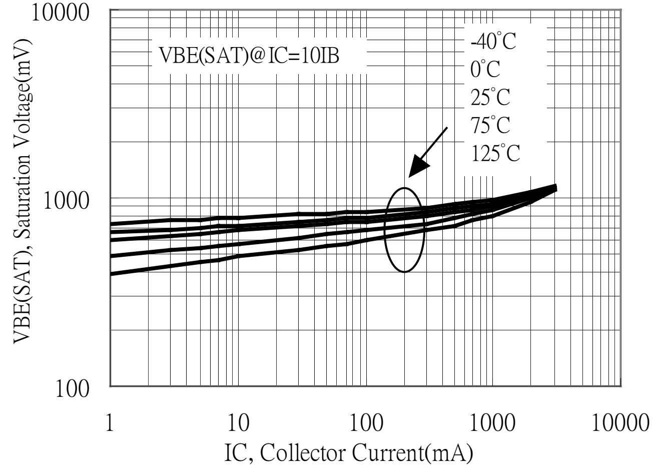


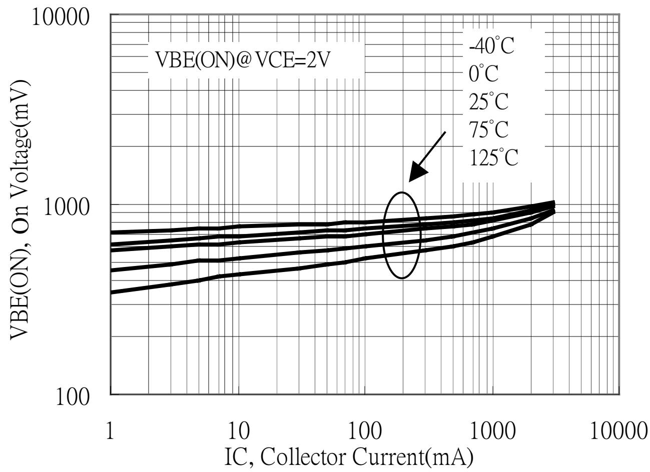


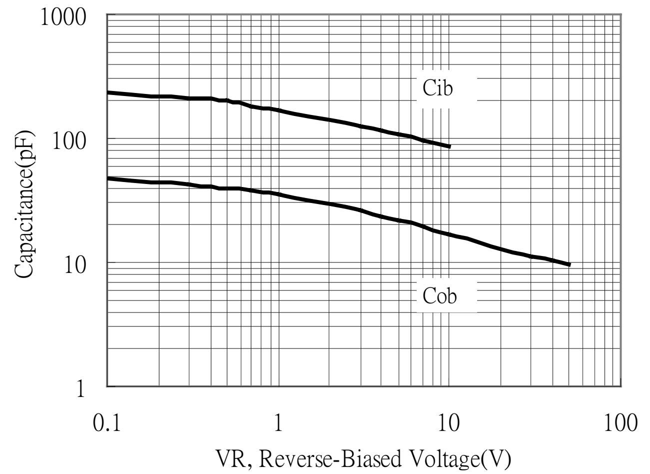


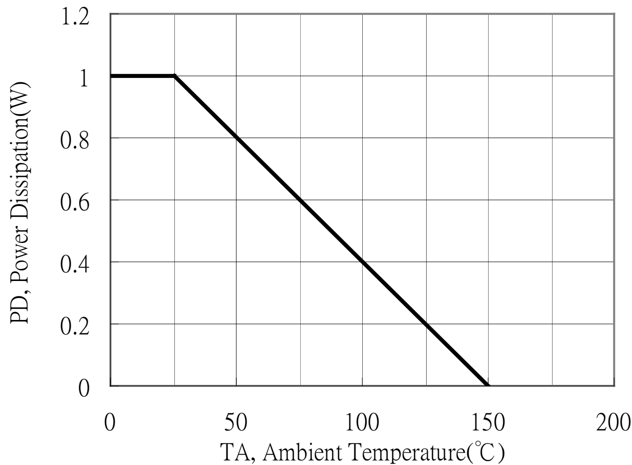
Typical Characteristics(Cont.)

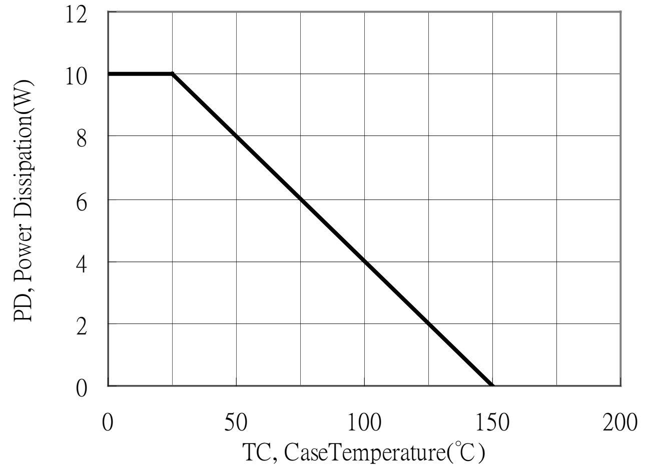








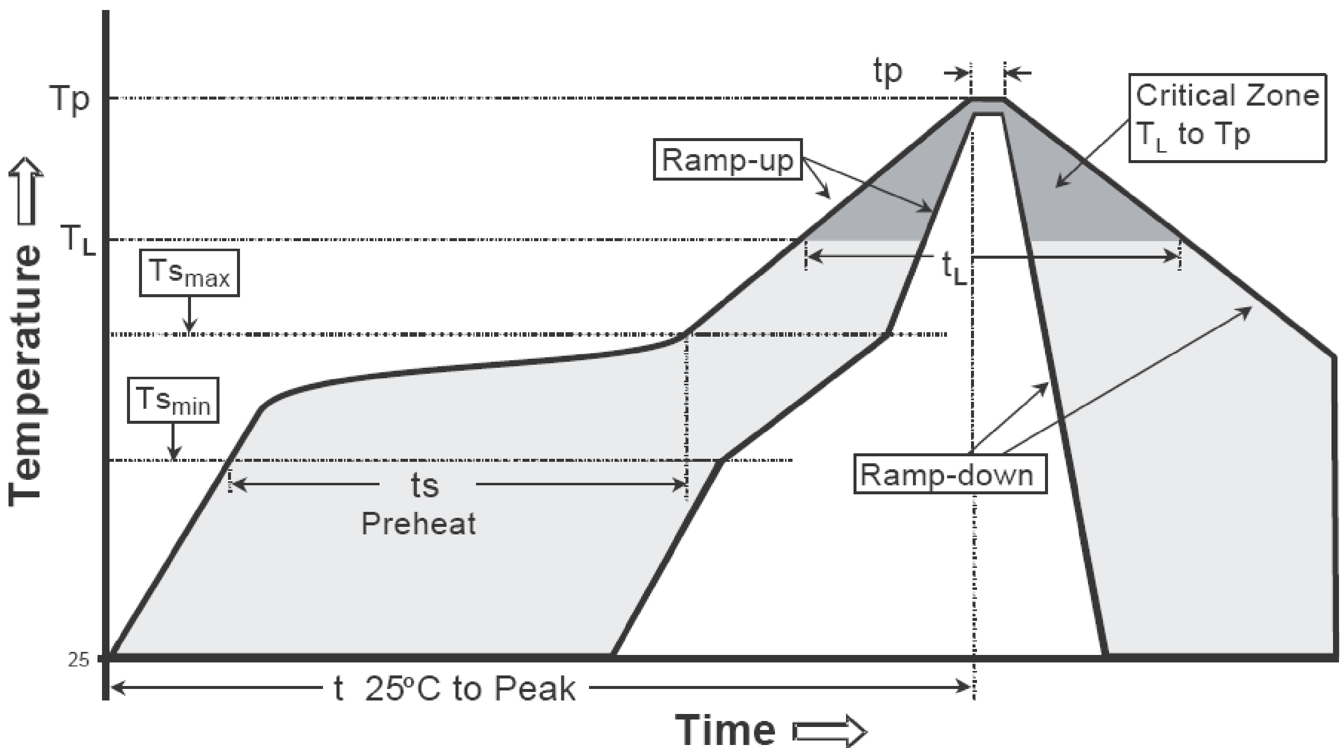




Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

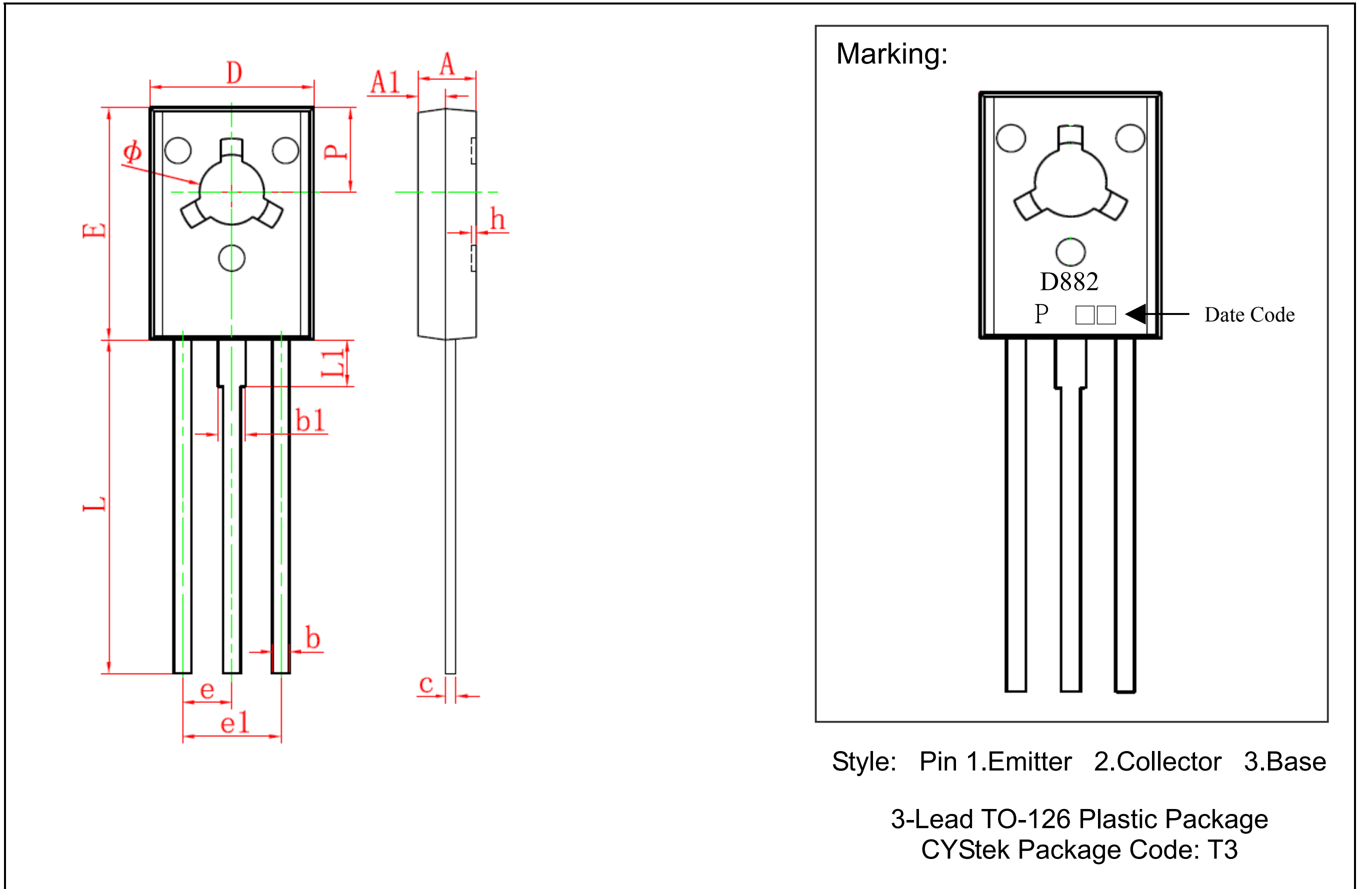
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time(ts_{min} to ts_{max})	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

TO-126 Dimension



*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	2.500	2.900	0.098	0.114	e	*2.290		*0.090	
A1	1.100	1.500	0.043	0.059	e1	4.480	4.680	0.176	0.184
b	0.660	0.860	0.026	0.034	h	0.000	0.300	0.000	0.012
b1	1.170	1.370	0.046	0.054	L	15.300	15.700	0.602	0.618
c	0.450	0.600	0.018	0.024	L1	2.100	2.300	0.083	0.091
D	7.400	7.800	0.291	0.307	P	3.900	4.100	0.154	0.161
E	10.600	11.000	0.417	0.433	Φ	3.000	3.200	0.118	0.126

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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