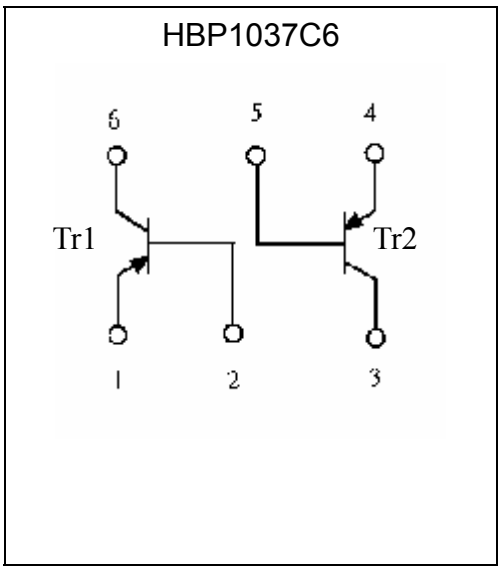
General Purpose PNP Epitaxial Planar Transistors (dual transistors)

HBP1037C6

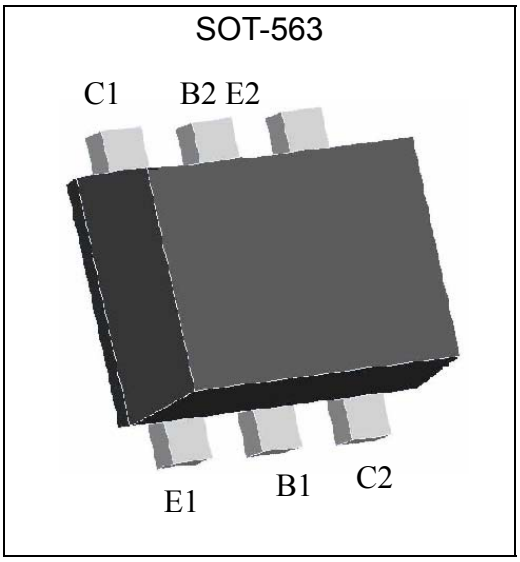
Features

- Two BTA1037 chips in a SOT-563 package.
- Mounting possible with SOT-523 automatic mounting machines.
- Transistor elements are independent, eliminating interference.
- Mounting cost and area can be cut in half.
- Excellent h_{FE} linearity
- Complementary to HBN2412C6

Equivalent Circuit



Outline



The following characteristics apply to both Tr1 and Tr2

Absolute Maximum Ratings (Ta=25°C, each transistor)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-100	V
Collector-Emitter Voltage	V_{CEO}	-65	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-150	mA
Power Dissipation	Pd	150(total) *1	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : *1 120mW per element must not be exceeded

Characteristics (Ta=25°C, each transistor)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-100	-	-	V	I_C=-50μA
BV_{CEO}	-65	-	-	V	I_C=-1mA
BV_{EBO}	-6	-	-	V	I_E=-50μA
I_{CBO}	-	-	-0.1	μA	V_{CB}=-80V
I_{EBO}	-	-	-0.1	μA	V_{EB}=-6V
*$V_{CE(sat)}$	-	-	-0.2	V	I_C=-10mA, I_B=-0.5mA
*$V_{CE(sat)}$	-	-0.12	-0.3	V	I_C=-50mA, I_B=-5mA
*$V_{CE(sat)}$	-	-	-0.4	V	I_C=-100mA, I_B=-5mA
V_{BE}	-0.6	-	-0.7	V	V_{CE}=-6V, I_C=-2mA
V_{BE}	-	-	-0.76	V	V_{CE}=-6V, I_C=-10mA
*h_{FE}	200	-	450		V_{CE}=-6V, I_C=-1mA
f_T	80	110	-	MHz	V_{CE}=-10V, I_C=-1mA, f=100MHz
Cob	-	2	3.5	pF	V_{CB}=-10V, f=1MHz

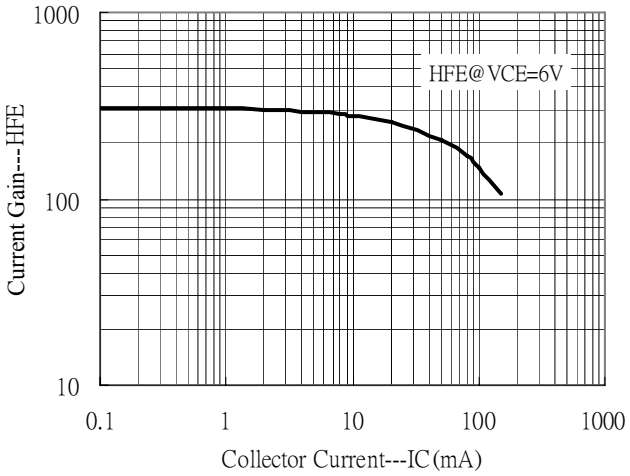
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Ordering Information

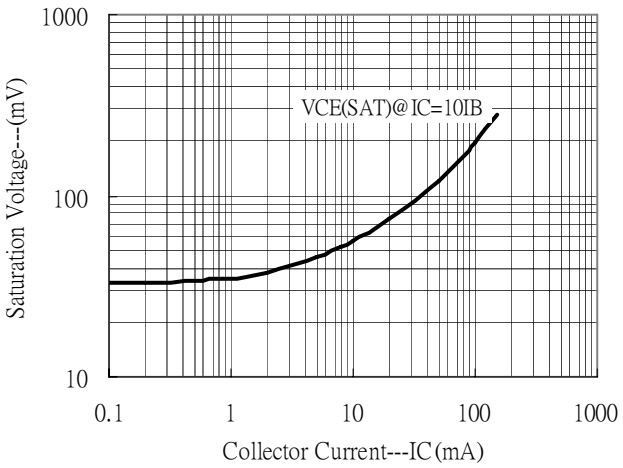
Device	Package	Shipping
HBP1037C6-0-T1-G	SOT-563 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Typical Characteristics

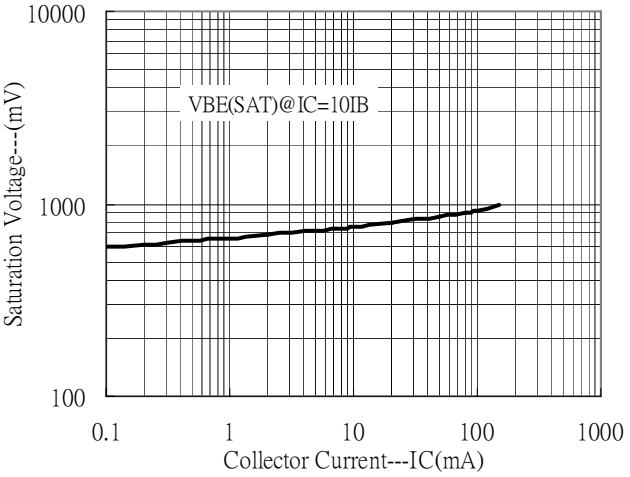
Current Gain vs Collector Current



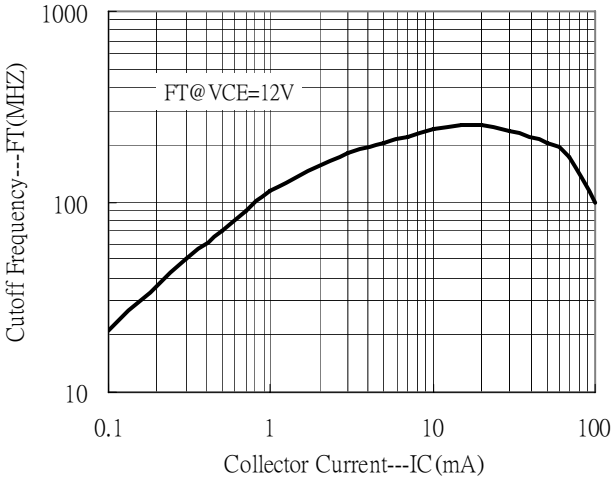
Saturation Voltage vs Collector Current



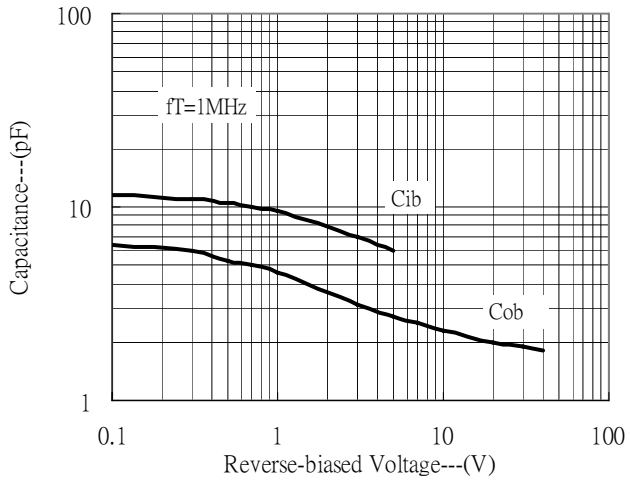
Saturation Voltage vs Collector Current



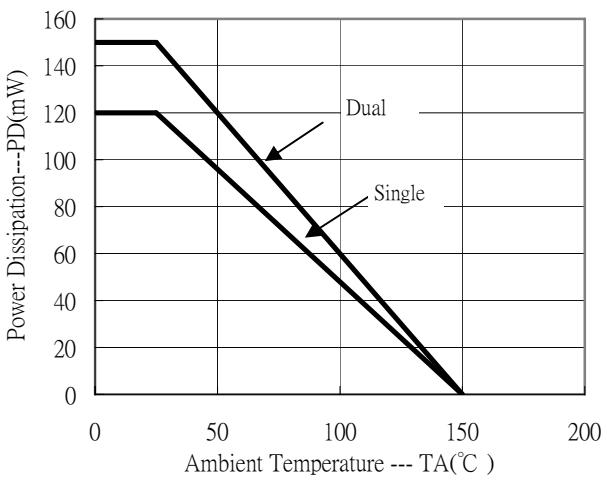
Cutoff Frequency vs Collector Current



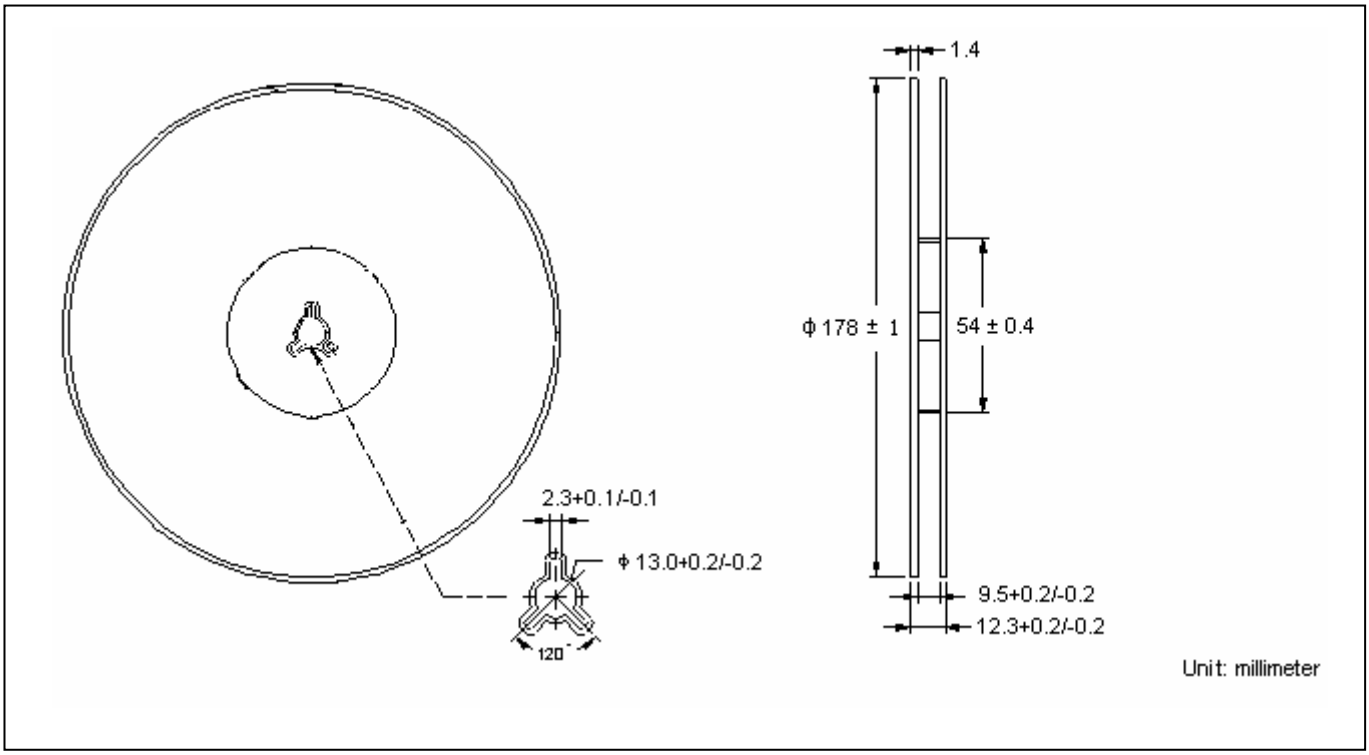
Capacitance Characteristics



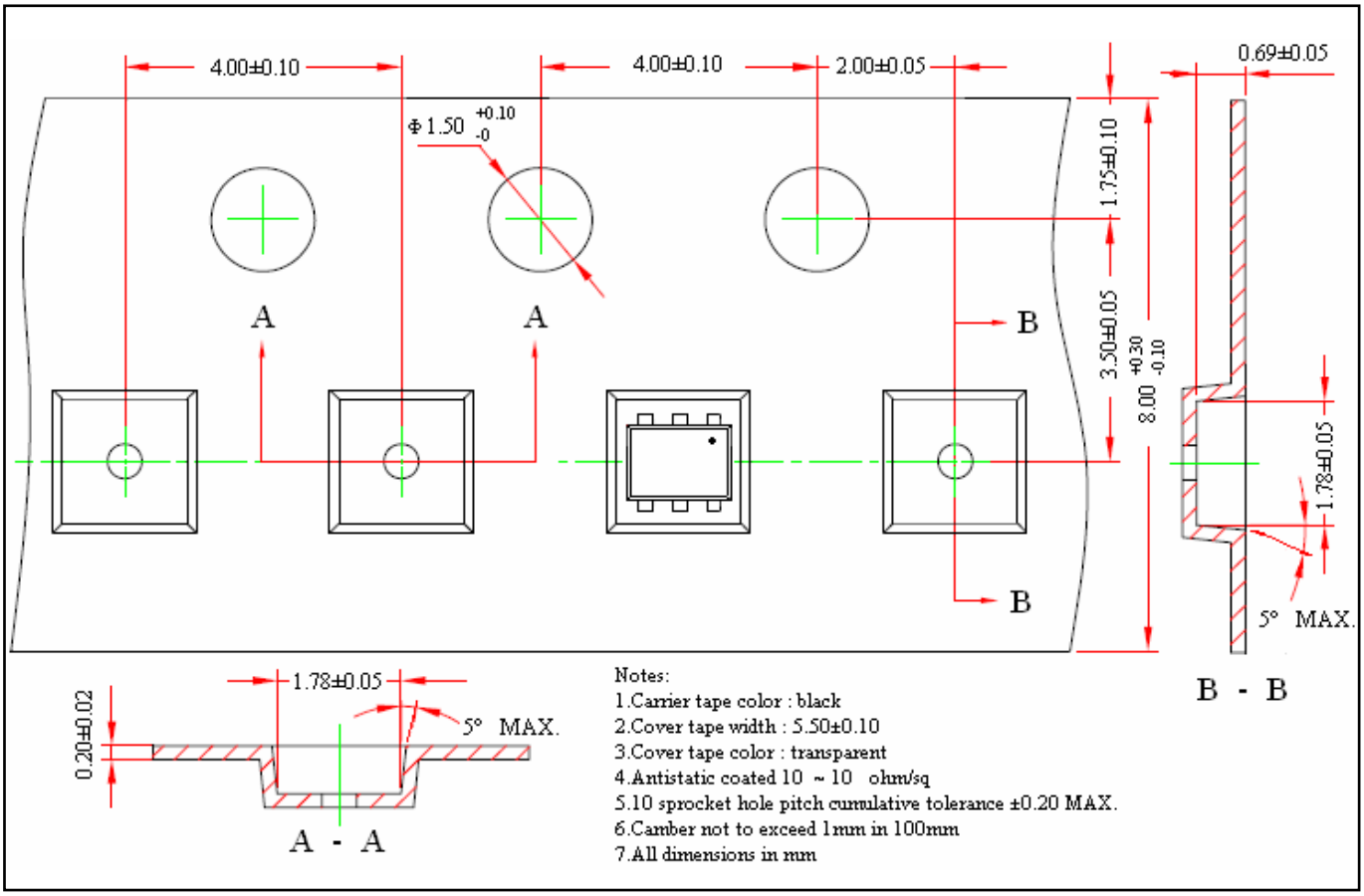
Power Derating Curves



Reel Dimension



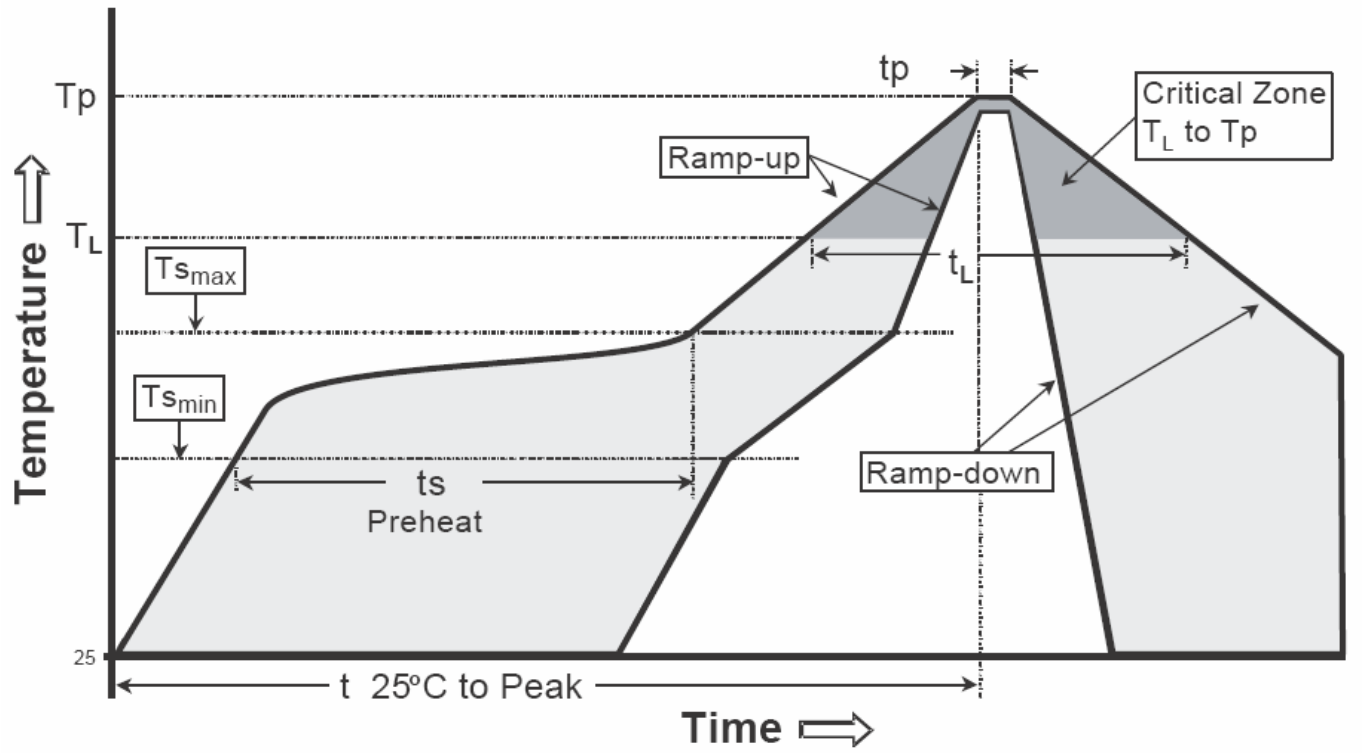
Carrier Tape Dimension



Recommended wave soldering condition

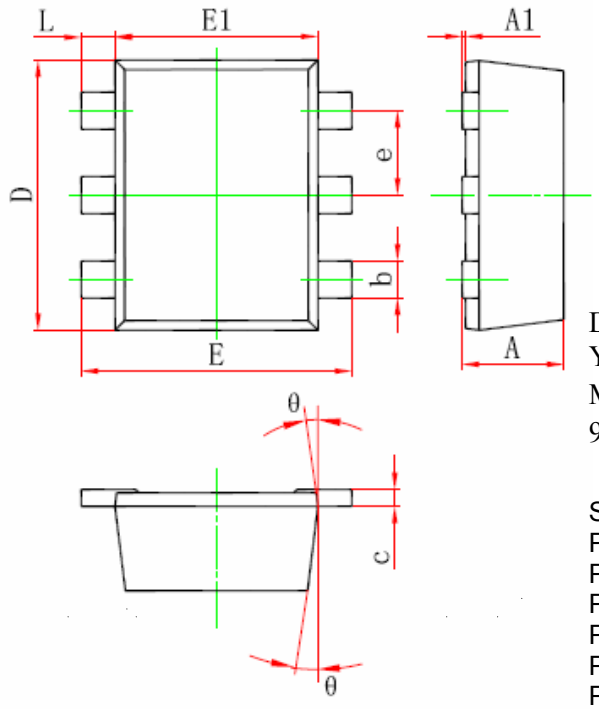
Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow

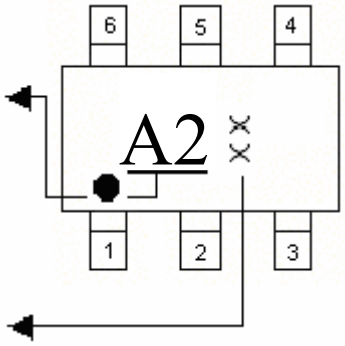


Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time($t_{s\ min}$ to $t_{s\ max}$)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (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.

SOT-563 Dimension



Marking:



Product Code

Date Code: Year+Month
Year: 6→2006, 7→2007
Month: 1→1, 2→2, • • •
9→9, A→10, B→11, C→12

Style:
Pin 1. Emitter1 (E1)
Pin 2. Base1 (B1)
Pin 3. Collector2 (C2)
Pin 4. Emitter2 (E2)
Pin 5. Base2 (B2)
Pin 6. Collector1 (C1)

6-Lead SOT-563 Plastic
Surface Mounted Package
CYStek Package Code: C6

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.021	0.024	0.525	0.600	b	0.007	0.011	0.170	0.270
A1	0.000	0.002	0.000	0.050	E1	0.043	0.051	1.100	1.300
e	0.018	0.022	0.450	0.550	E	0.059	0.067	1.500	1.700
c	0.004	0.006	0.090	0.160	L	0.004	0.012	0.100	0.300
D	0.059	0.067	1.500	1.700	θ	7° REF		7° REF	

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.