General Purpose NPN Epitaxial Planar Transistor

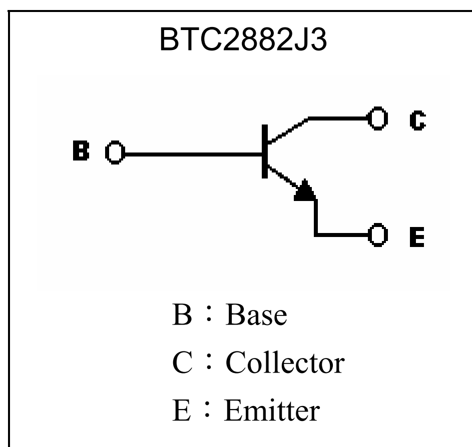
BTC2882J3

BV_{CEO}	200V
I_C	1A
$R_{CESAT(MAX)}$	0.6Ω

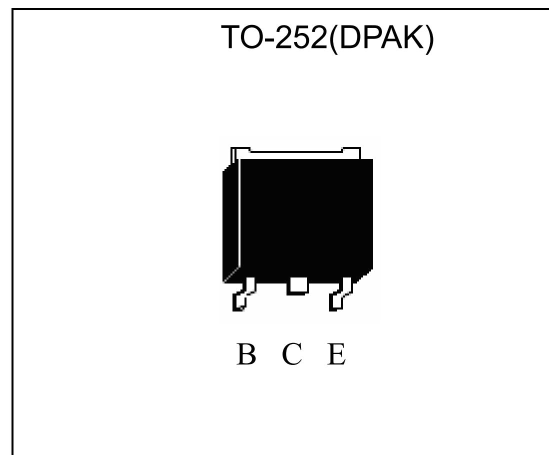
Features

- High breakdown voltage, $BV_{CEO} \geq$ 200V
- Large continuous collector current capability
- Low collector saturation voltage
- Pb-free lead plating and halogen-free package

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	250	V
Collector-Emitter Voltage	V_{CEO}	200	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	1	A
Base Current	I_B	200	mA
Power Dissipation @T_A=25℃	P_D	1	W
Power Dissipation @T_C=25℃		10	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	$R_{th,j-c}$	12.5	°C/W
Thermal Resistance, Junction-to-ambient, max	$R_{th,j-a}$	125	°C/W

Characteristics (Ta=25°C)

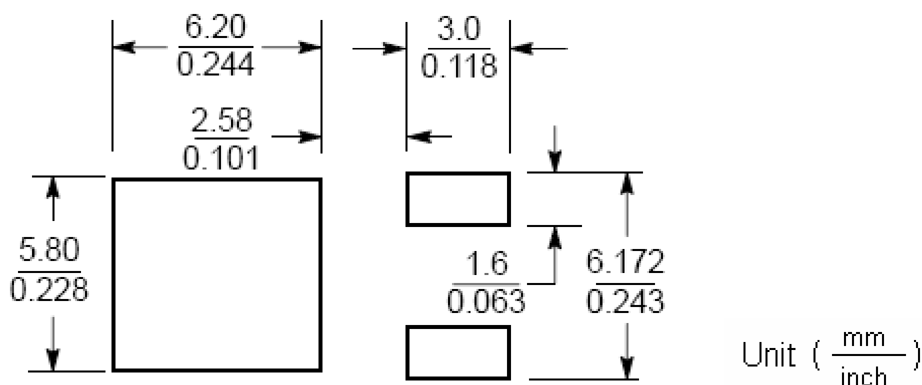
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	250	-	-	V	I_C=10μA
BV_{CEO}	200	-	-	V	I_C=10mA
BV_{EBO}	7	-	-	V	I_E=10μA
I_{CBO}	-	-	100	nA	V_{CB}=200V
I_{EBO}	-	-	100	nA	V_{EB}=6V
*$V_{CE(sat)}$	-	0.2	0.3	V	I_C=500mA, I_B=50mA
*$V_{CE(sat)}$	-	0.3	0.5	V	I_C=700mA, I_B=35mA
*$V_{BE(sat)}$	-	0.93	1	V	I_C=500mA, I_B=50mA
*$V_{BE(on)}$	-	0.68	0.8	V	V_{CE}=2V, I_C=100mA
*h_{FE} 1	160	-	-	-	V_{CE}=2V, I_C=50mA
*h_{FE} 2	160	-	400	-	V_{CE}=2V, I_C=100mA
*h_{FE} 3	120	-	-	-	V_{CE}=2V, I_C=200mA
*h_{FE} 4	50	-	-	-	V_{CE}=5V, I_C=700mA
f_T	-	120	-	MHz	V_{CE}=5V, I_C=100mA
Cob	-	-	30	pF	V_{CB}=10V, I_E=0A,f=1MHz

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

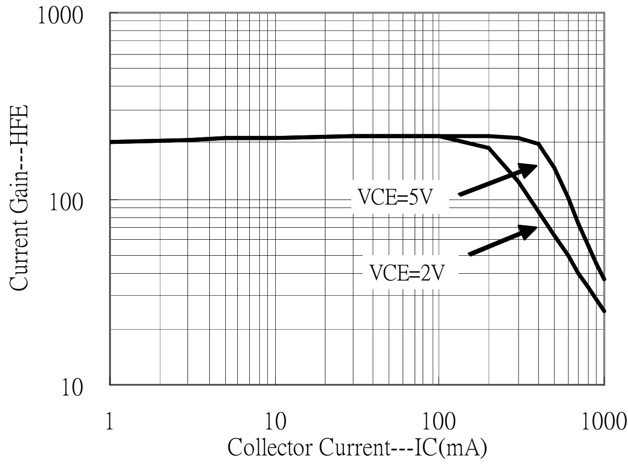
Ordering Information

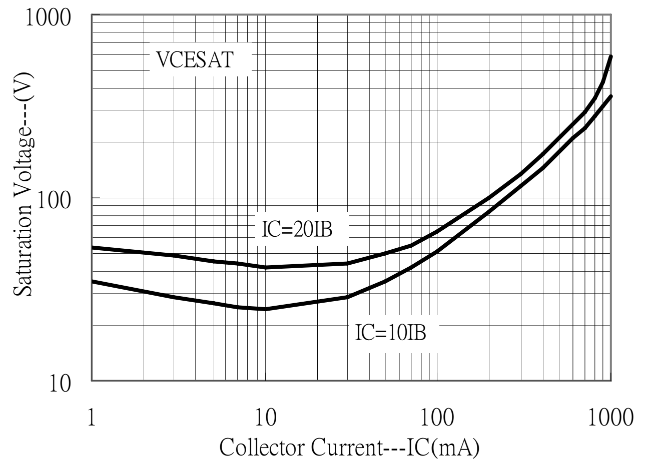
Device	Package	Shipping
BTC2882J3-0-T3-G	TO-252 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel

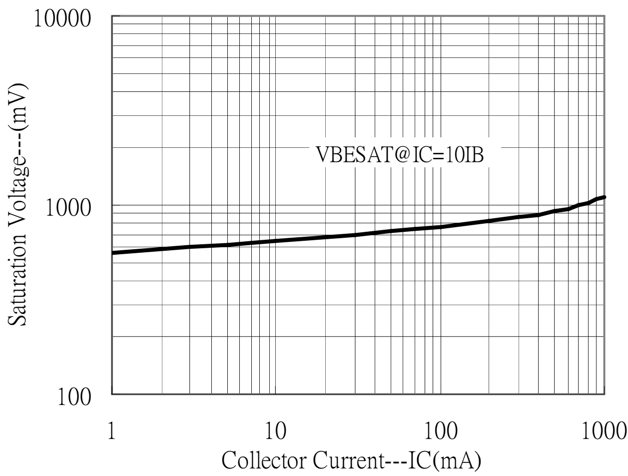
Recommended soldering footprint

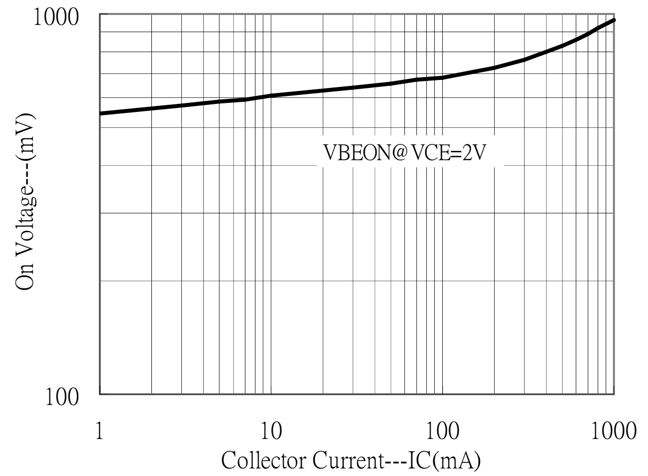


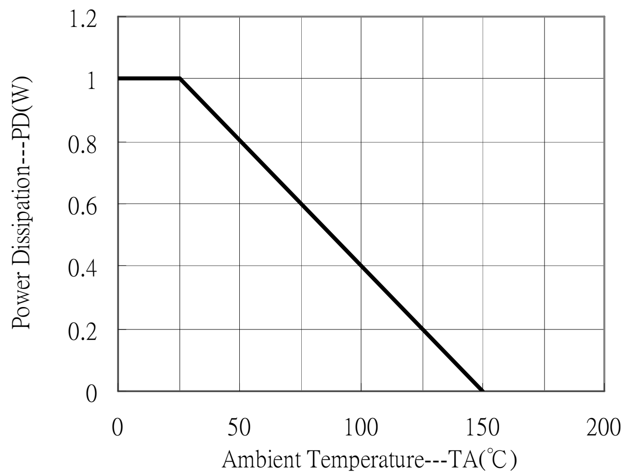
Typical Characteristics

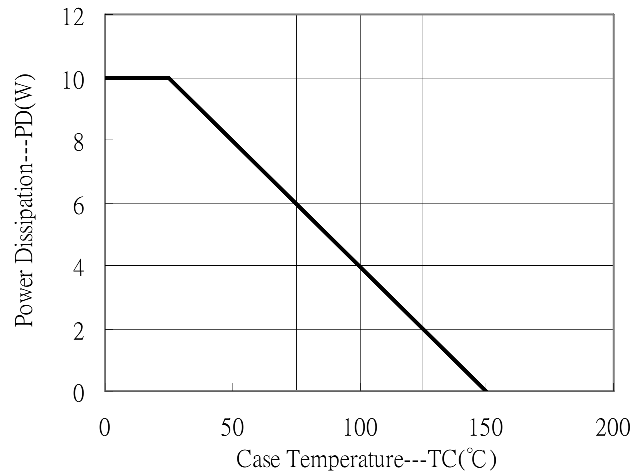




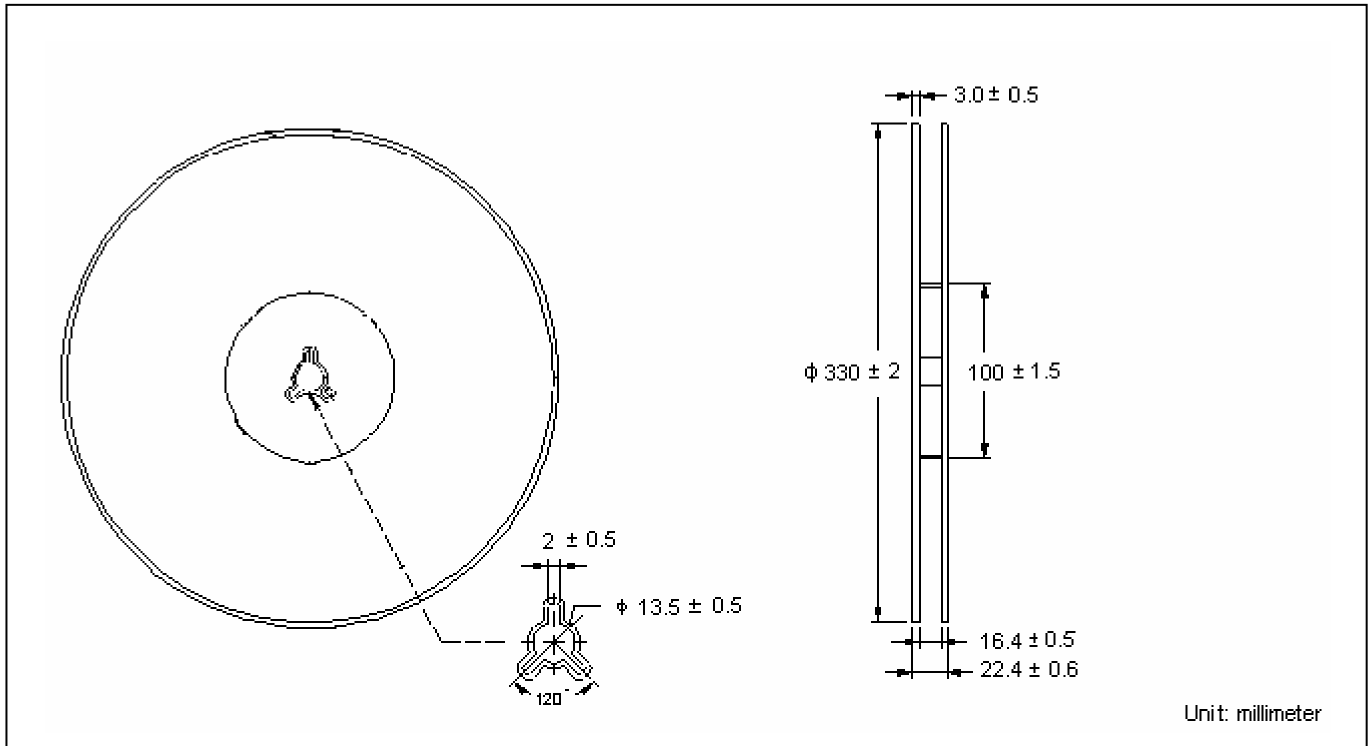




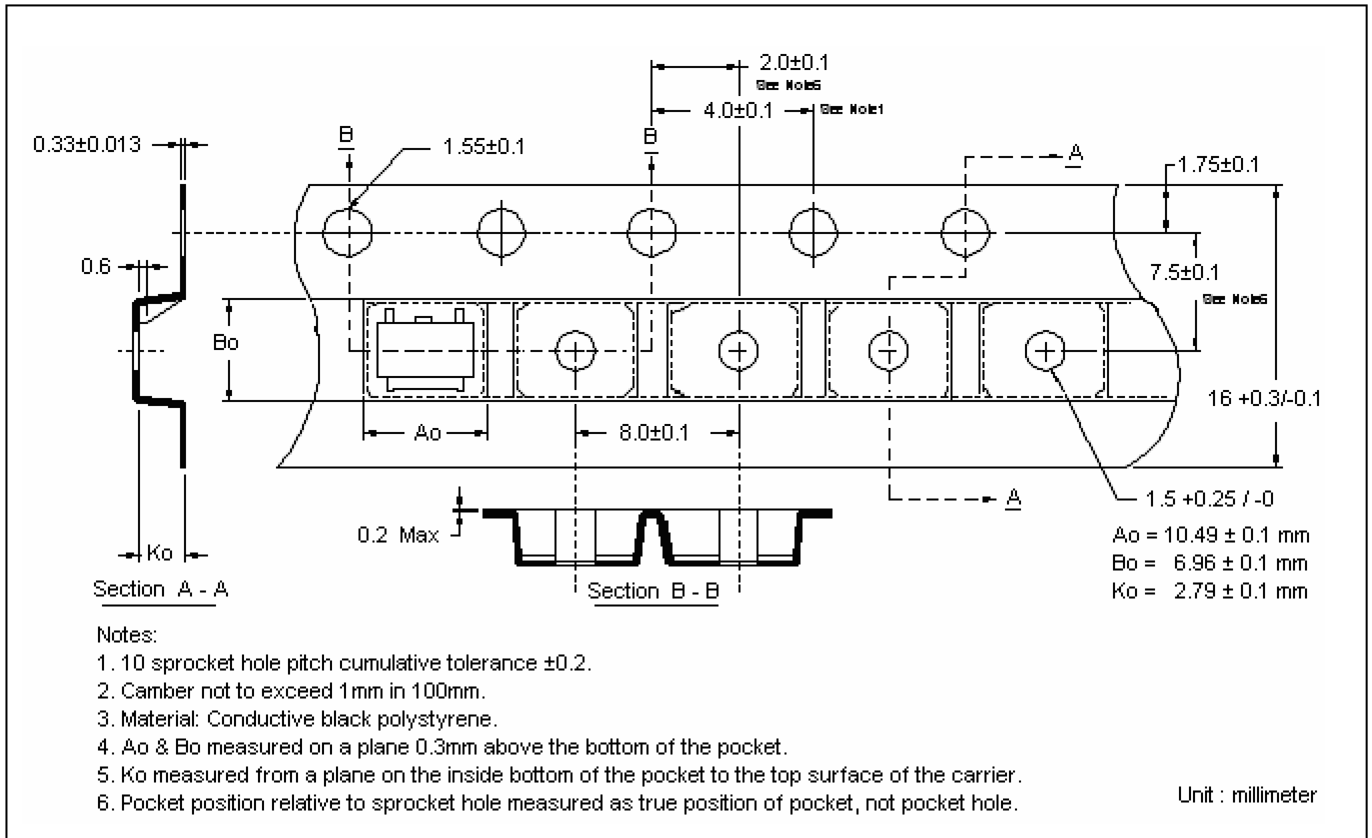




Reel Dimension



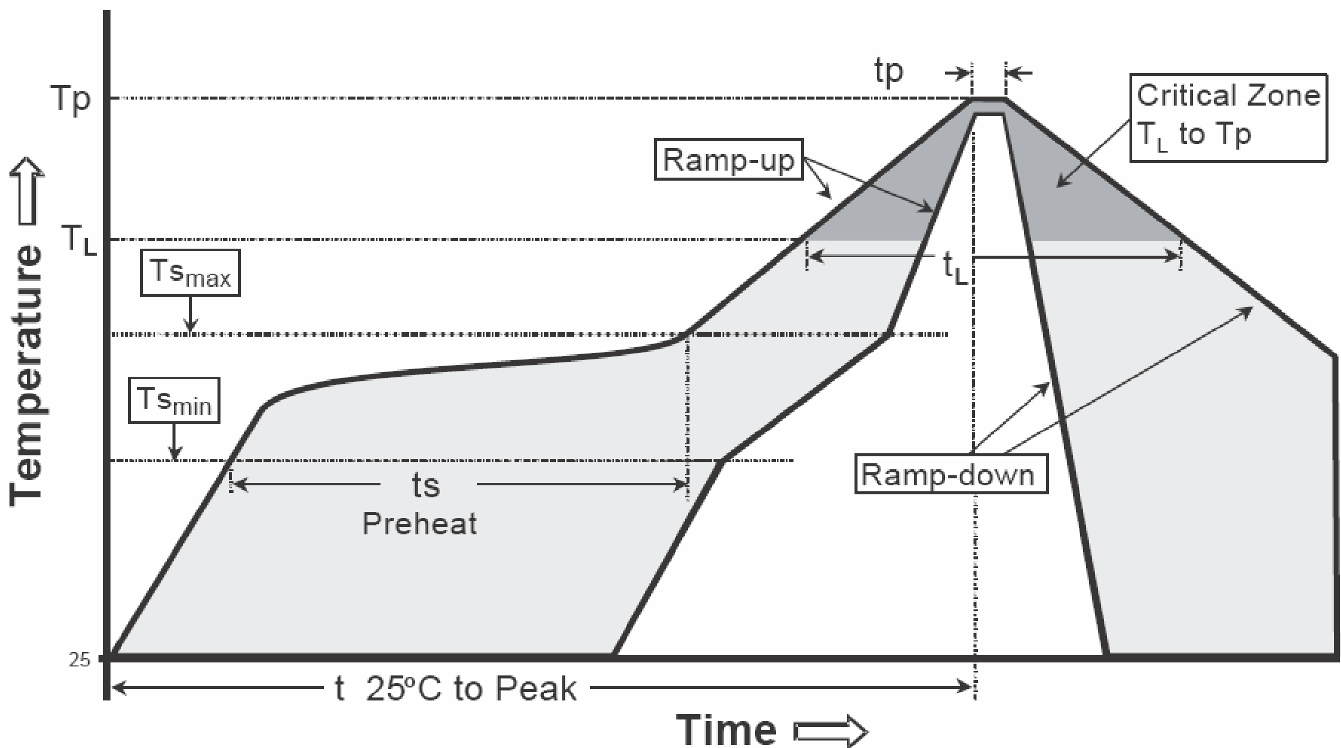
Carrier Tape Dimension



Recommended wave soldering condition

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

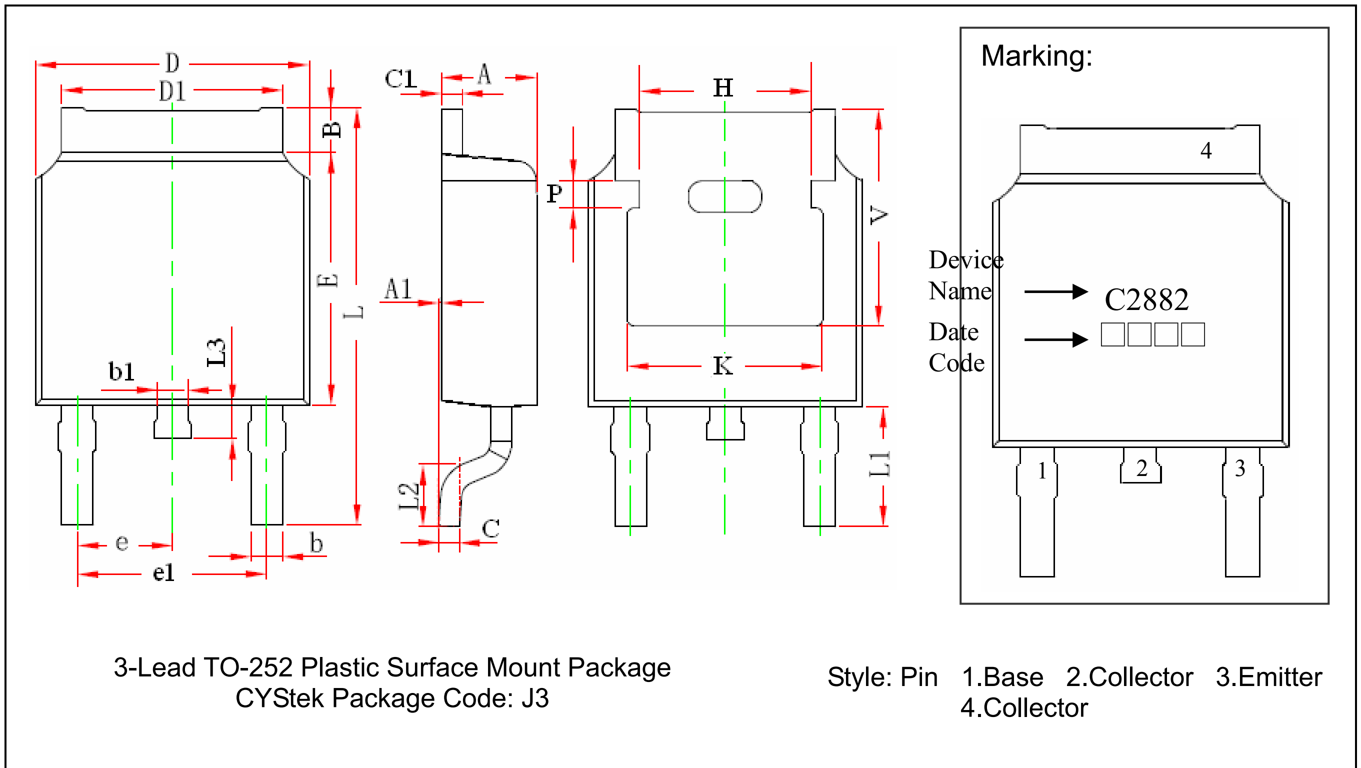
Recommended temperature profile for IR reflow



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.

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

TO-252 Dimension



3-Lead TO-252 Plastic Surface Mount Package
CYStek Package Code: J3

Style: Pin 1.Base 2.Collector 3.Emitter
4.Collector

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.087	0.094	2.200	2.400	e	0.086	0.094	2.186	2.386
A1	0.000	0.005	0.000	0.127	e1	0.172	0.188	4.372	4.772
B	0.039	0.048	0.990	1.210	H	0.163	REF	4.140	REF
b	0.026	0.034	0.660	0.860	K	0.190	REF	4.830	REF
b1	0.026	0.034	0.660	0.860	L	0.386	0.409	9.800	10.400
C	0.018	0.023	0.460	0.580	L1	0.114	REF	2.900	REF
C1	0.018	0.023	0.460	0.580	L2	0.055	0.067	1.400	1.700
D	0.256	0.264	6.500	6.700	L3	0.024	0.039	0.600	1.000
D1	0.201	0.215	5.100	5.460	P	0.030	REF	0.750	REF
E	0.236	0.244	6.000	6.200	V	0.211	REF	5.350	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.

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