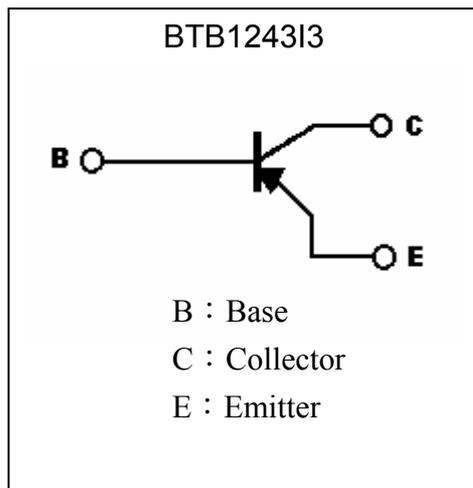
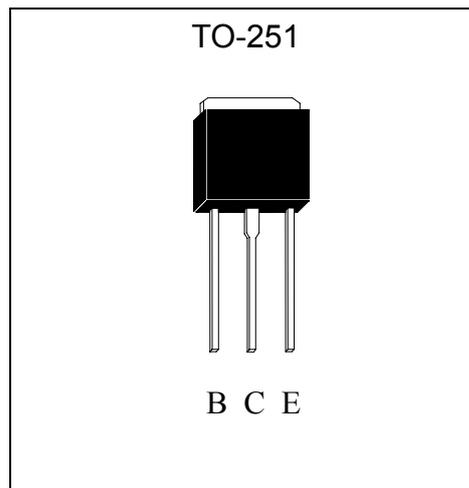


**Low Vcesat PNP Epitaxial Planar Transistor**

# BTB1243I3

**Features**

- Low  $V_{CE(sat)}$ ,  $V_{CE(sat)} = -0.24$  V (typical), at  $I_C / I_B = -2A / -0.2A$
- Excellent current gain characteristics
- Complementary to BTD1864I3
- Pb free package

**Symbol**

**Outline**

**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	$V_{CBO}$	-50	V
Collector-Emitter Voltage	$V_{CEO}$	-50	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Collector Current (DC)	$I_C$	-3	A
Collector Current (Pulse)	$I_{CP}$	-7 *1	
Power Dissipation	$P_d(T_A = 25^\circ\text{C})$	1	W
	$P_d(T_C = 25^\circ\text{C})$	15	
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

 Note : \*1. Single Pulse,  $P_w = 10\text{ms}$

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CEO</sub>	-50	-	-	V	I <sub>C</sub> =-50μA, I <sub>E</sub> =0
BV <sub>CEO</sub>	-50	-	-	V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
BV <sub>EBO</sub>	-6	-	-	V	I <sub>E</sub> =-50μA, I <sub>C</sub> =0
I <sub>CBO</sub>	-	-	-1	μA	V <sub>CB</sub> =-30V, I <sub>E</sub> =0
I <sub>EBO</sub>	-	-	-1	μA	V <sub>EB</sub> =-4V, I <sub>C</sub> =0
*V <sub>CE(sat)</sub>	-	-0.24	-0.5	V	I <sub>C</sub> =-2A, I <sub>B</sub> =-0.2A
*V <sub>BE(sat)</sub>	-	-1	-1.5	V	I <sub>C</sub> =-2A, I <sub>B</sub> =-0.2A
*h <sub>FE1</sub>	160	-	-	-	V <sub>CE</sub> =-2V, I <sub>C</sub> =-20mA
*h <sub>FE2</sub>	180	-	390	-	V <sub>CE</sub> =-2V, I <sub>C</sub> =-0.5A
*h <sub>FE3</sub>	50	-	-	-	V <sub>CE</sub> =-2V, I <sub>C</sub> =-3A
f <sub>T</sub>	80	-	-	MHz	V <sub>CE</sub> =-2V, I <sub>C</sub> =-0.5A, f=100MHz
Cob	-	25	-	pF	V <sub>CB</sub> =-10V, f=1MHz

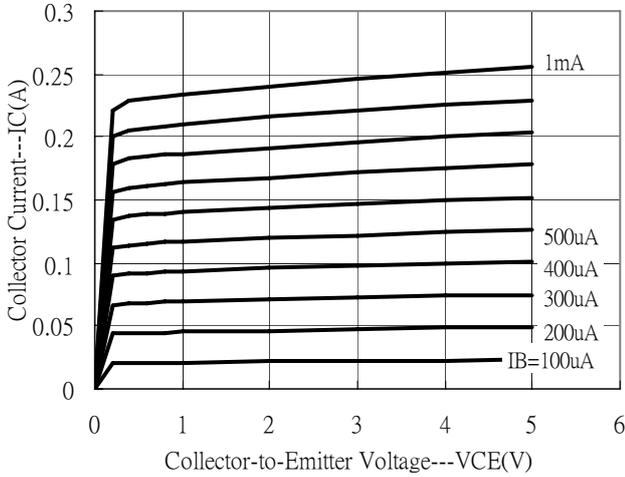
\*Pulse Test : Pulse Width ≤380μs, Duty Cycle ≤2%

**Ordering Information**

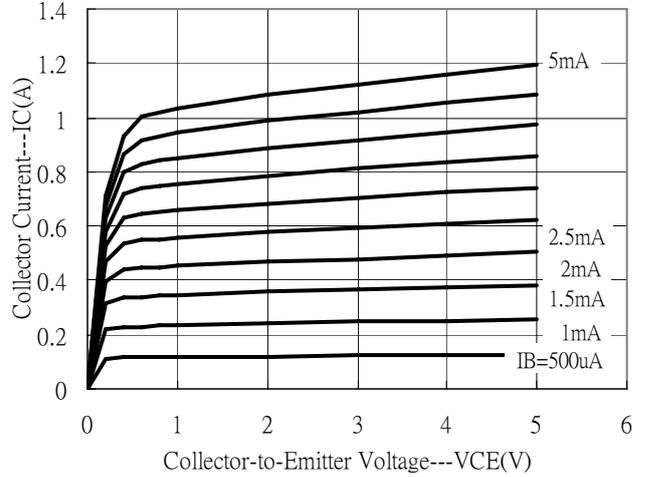
Device	Package	Shipping	Marking
BTB1243I3	TO-251 (RoHS compliant)	80 pcs / tube, 50 tubes / box	B772

**Typical Characteristics**

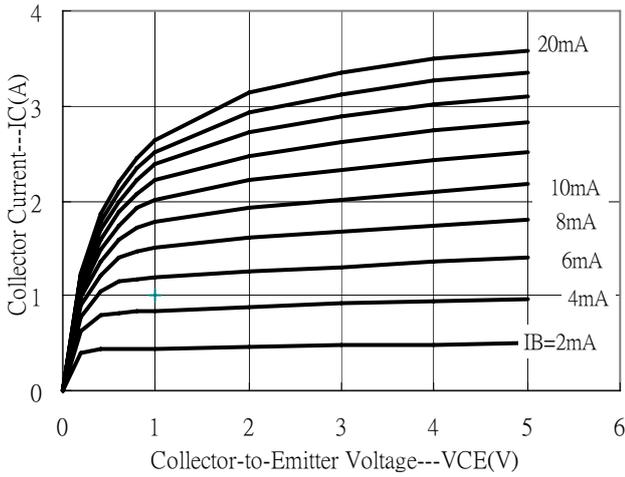
Emitter Grounded Output Characteristics



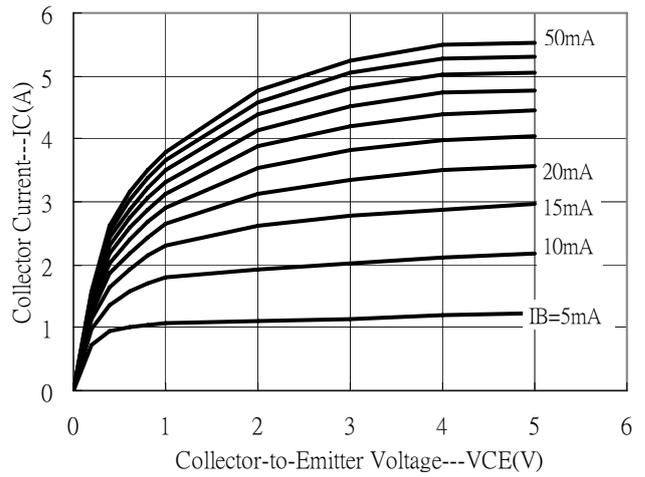
Emitter Grounded Output Characteristics



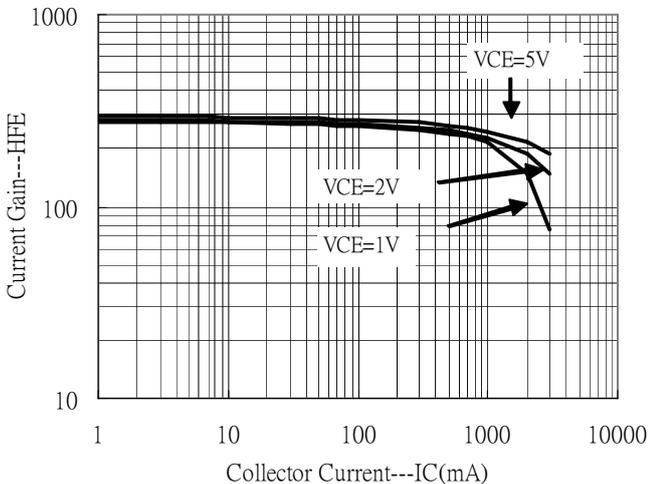
Emitter Grounded Output Characteristics



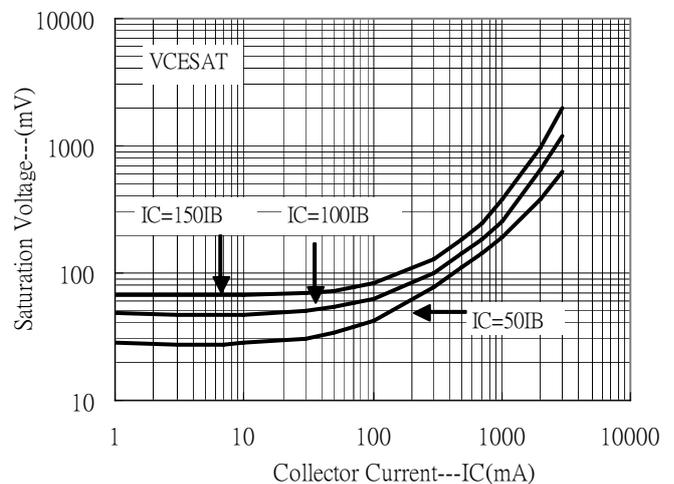
Emitter Grounded Output Characteristics



Current Gain vs Collector Current

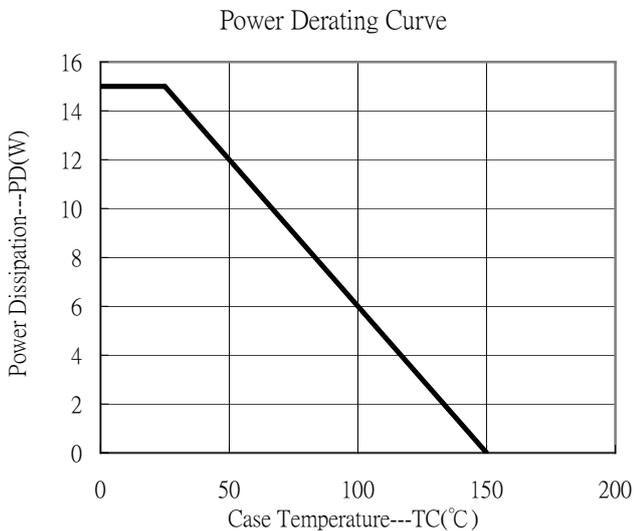
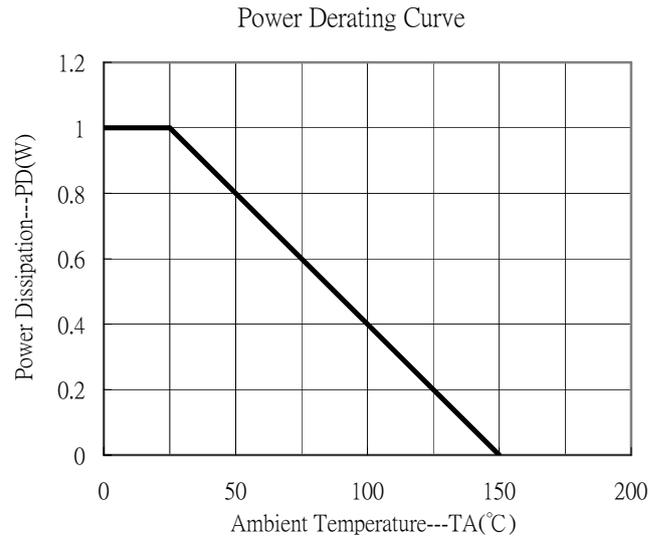
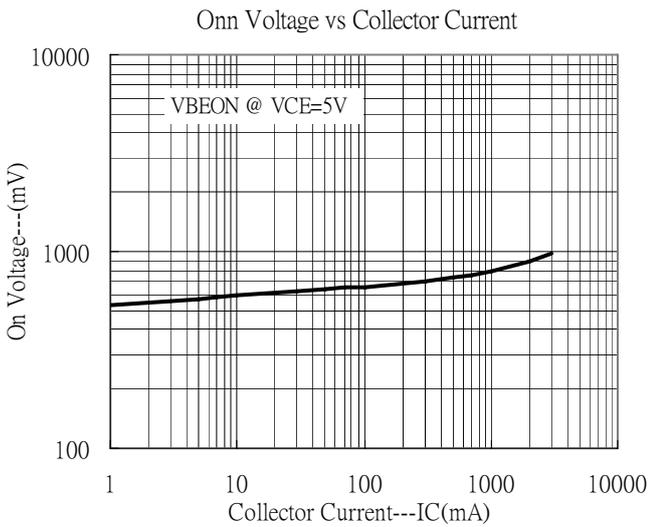
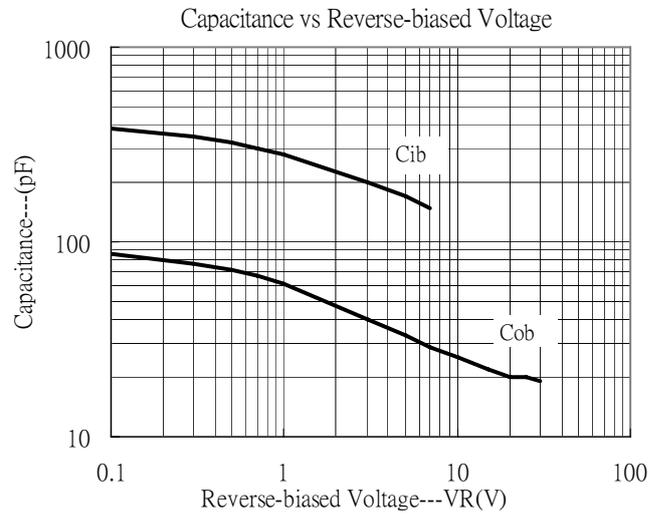
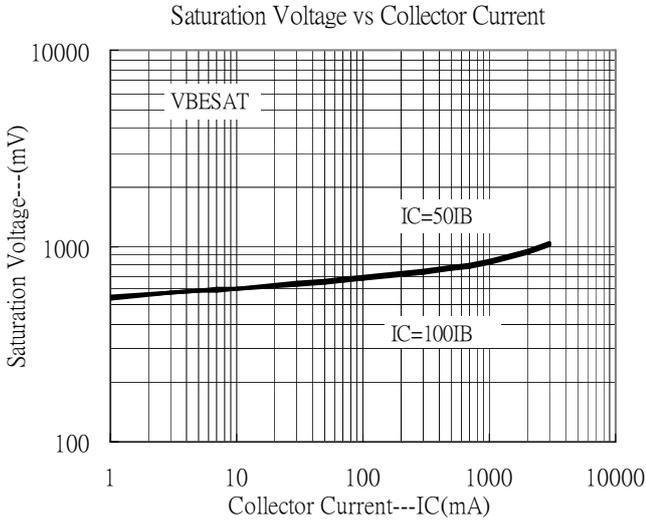


Saturation Voltage vs Collector Current





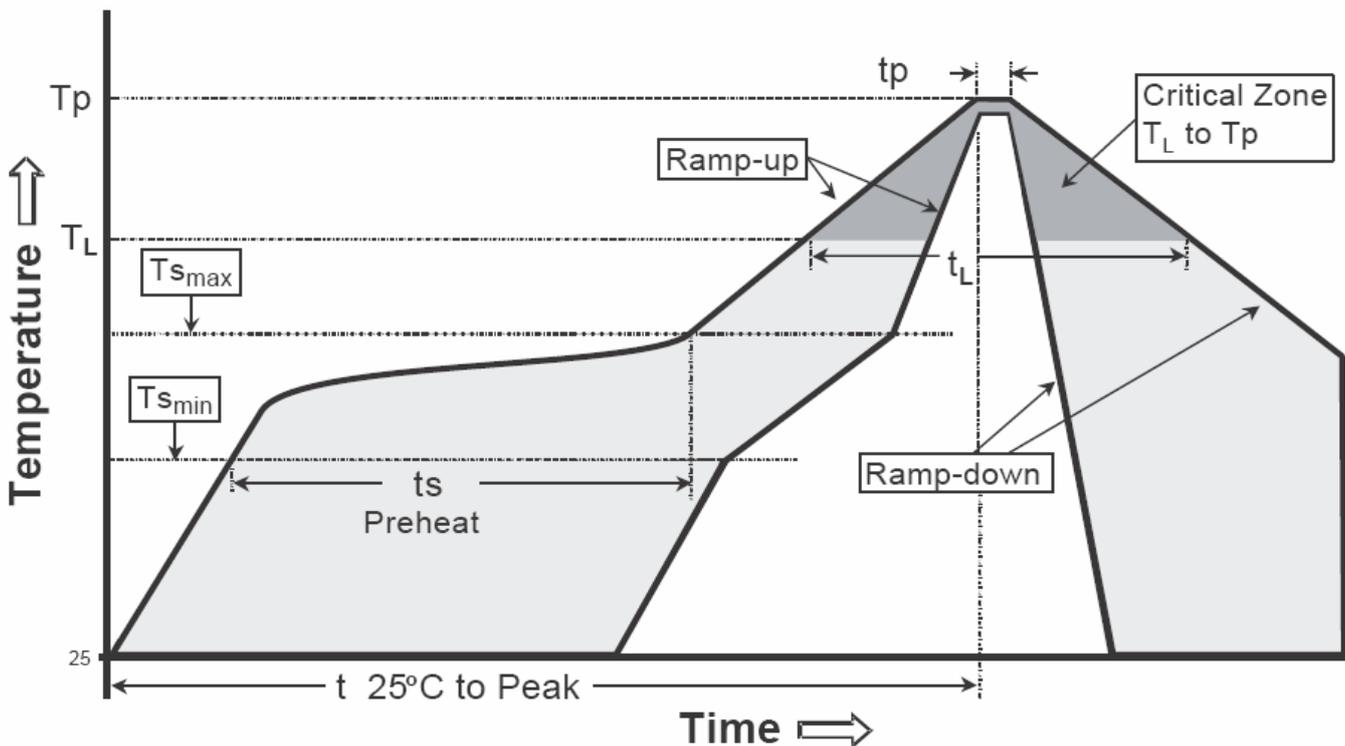
### Typical Characteristics(Cont.)



**Recommended wave soldering condition**

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

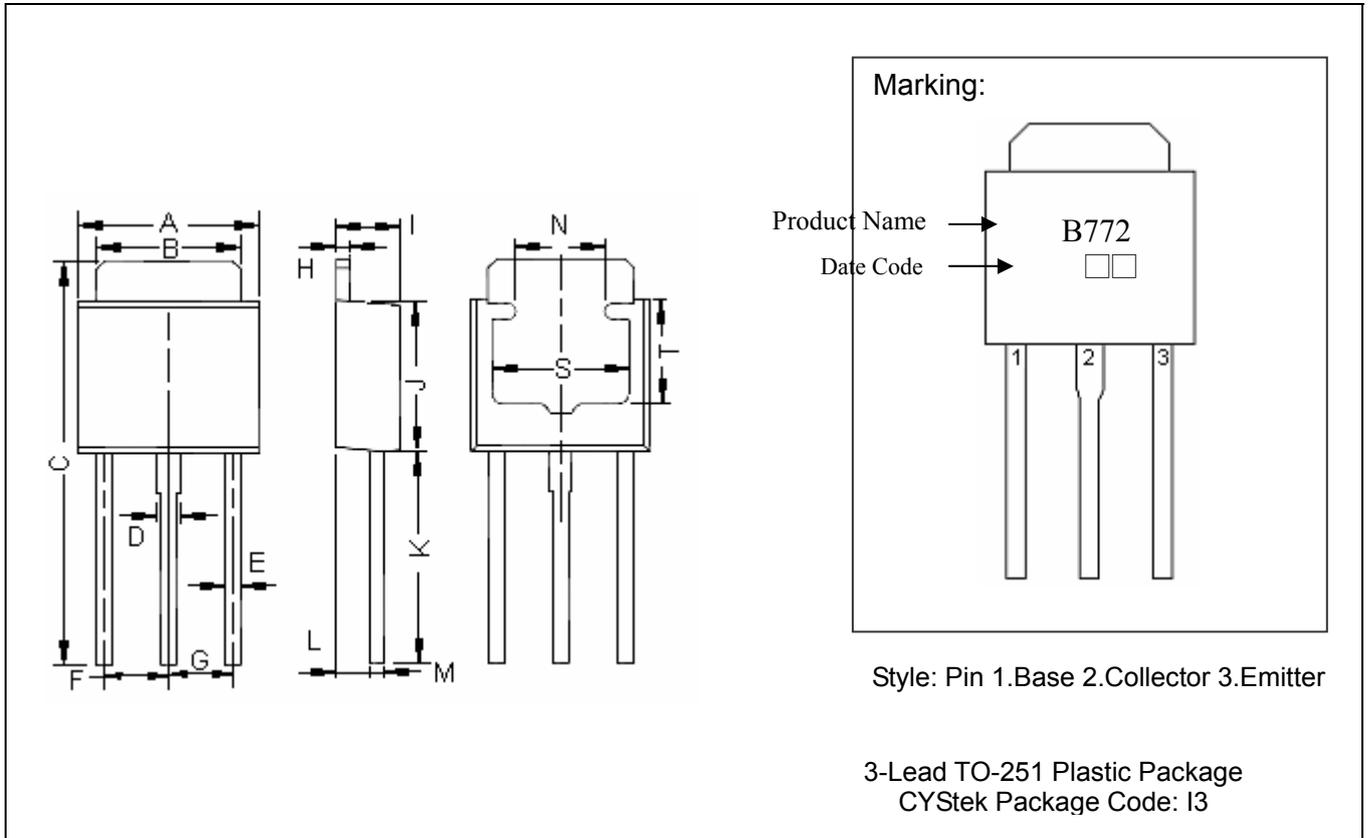
**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate ( $T_{s_{max}}$ to $T_p$ )	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min( $T_{s_{min}}$ )	100°C	150°C
-Temperature Max( $T_{s_{max}}$ )	150°C	200°C
-Time( $t_{s_{min}}$ to $t_{s_{max}}$ )	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature ( $T_L$ )	183°C	217°C
- Time ( $t_L$ )	60-150 seconds	60-150 seconds
Peak Temperature( $T_p$ )	220 +0/-5 °C	245 +0/-5 °C
Time within 5°C of actual peak temperature( $t_p$ )	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-251 Dimension**



**Marking:**

Product Name → B772  
 Date Code → □ □

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

3-Lead TO-251 Plastic Package  
 CYStek Package Code: I3

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.250	0.262	6.350	6.650	I	0.087	0.094	2.200	2.400
B	0.205	0.213	5.200	5.400	J	0.213	0.224	5.400	5.700
C	0.571	0.587	14.500	14.900	K	0.295	0.311	7.500	7.900
D	0.028	0.035	0.700	0.900	L	0.042	0.054	1.050	1.350
E	0.020	0.028	0.500	0.700	M	0.017	0.023	0.430	0.580
F	0.091 TYP		2.300 TYP		N	0.118 REF		3.000 REF	
G	0.091 TYP		2.300 TYP		S	0.197 REF		5.000 REF	
H	0.017	0.023	0.430	0.580	T	0.150 REF		3.800 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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