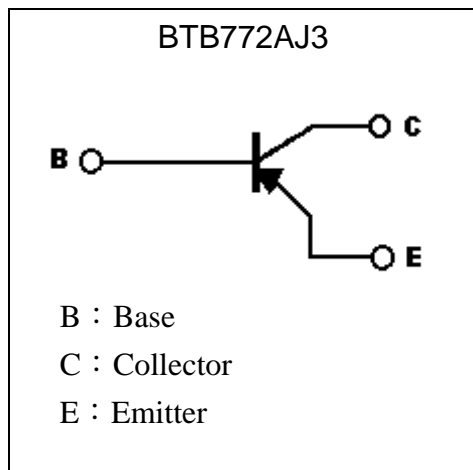
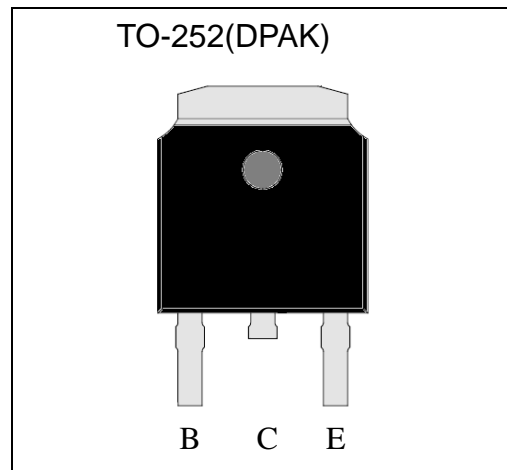


Low Vcesat PNP Epitaxial Planar Transistor

BTB772AJ3

Features

- Low $V_{CE(sat)}$, $V_{CE(sat)} = -0.3 \text{ V (max)}$, at $I_C / I_B = -2\text{A} / -0.1\text{A}$
- Excellent current gain characteristics
- Pb-free lead plating and halogen-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}	-30	V
Emitter-Base Voltage	V_{EBO}	-7	V
Collector Current (DC)	I_C	-3	A
Collector Current (Pulse)	I_{CP}	-5 (Note 1)	A
Power Dissipation	$P_d(T_A = 25^\circ\text{C})$	1	W
	$P_d(T_C = 25^\circ\text{C})$	15	W
Operating Junction and Storage Temperature Range	$T_j ; T_{stg}$	-55~+150	$^\circ\text{C}$



Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	R _{th,j-c}	8.33	°C/W
Thermal Resistance, Junction-to-ambient, max	R _{th,j-a}	125	°C/W

Note : 1. Single Pulse , Pw=10ms

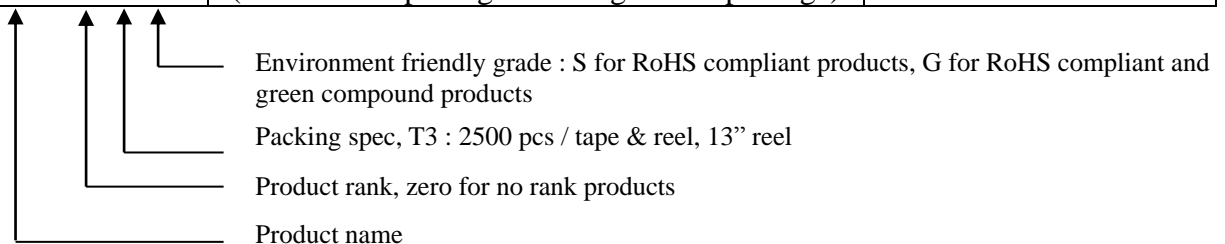
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	-50	-	-	V	I _C =-50μA, I _E =0
BV _{CEO}	-30	-	-	V	I _C =-1mA, I _B =0
BV _{EBO}	-7	-	-	V	I _E =-50μA, I _C =0
I _{CBO}	-	-	-100	nA	V _{CB} =-50V, I _E =0
I _{EBO}	-	-	-100	nA	V _{EB} =-7V, I _C =0
*V _{CE(sat)}	-	-0.05	-0.2	V	I _C =-400mA, I _B =-20mA
*V _{CE(sat)}	-	-0.2	-0.3	V	I _C =-2A, I _B =-100mA
*R _{CE(sat)}	-	0.1	0.15	Ω	I _C =-2A, I _B =-100mA
*V _{BE(sat)}	-	-1	-1.2	V	I _C =-2A, I _B =-200mA
*h _{FE 1}	160	-	-	-	V _{CE} =-2V, I _C =-100mA
*h _{FE 2}	180	-	390	-	V _{CE} =-2V, I _C =-500mA
*h _{FE 3}	150	-	-	-	V _{CE} =-2V, I _C =-1A
f _T	-	190	-	MHz	V _{CE} =-10V, I _C =-0.5A, f=100MHz
Cob	-	33	-	pF	V _{CB} =-10V, f = 1MHz

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

Ordering Information

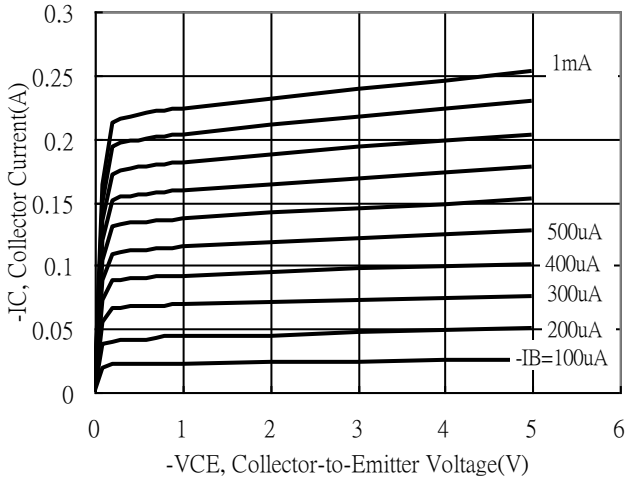
Device	Package	Shipping
BTB772AJ3-0-T3-G	TO-252 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel



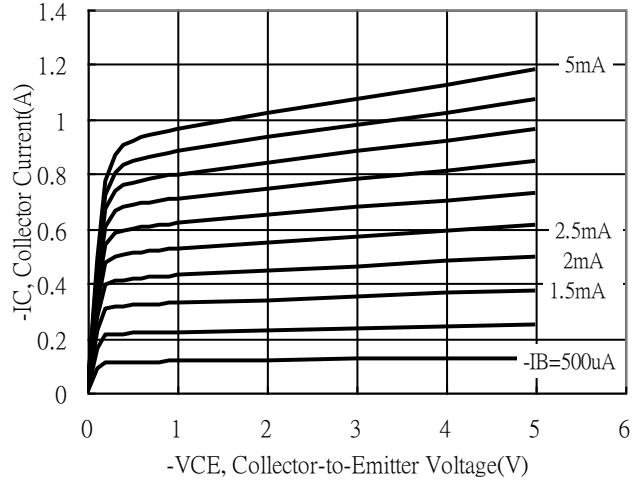


Typical Characteristics

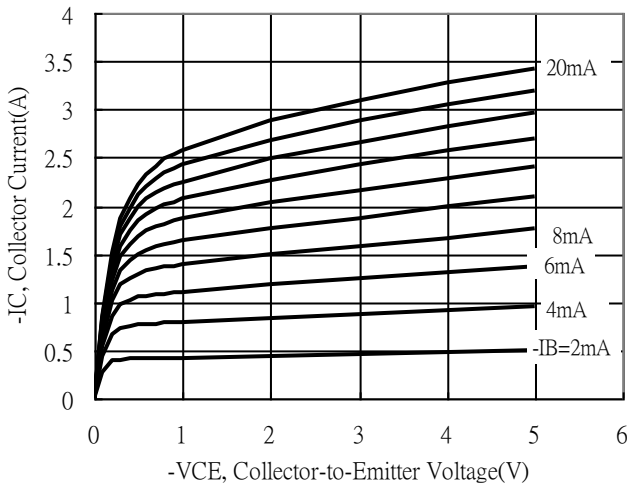
Emitter Grounded Output Characteristics



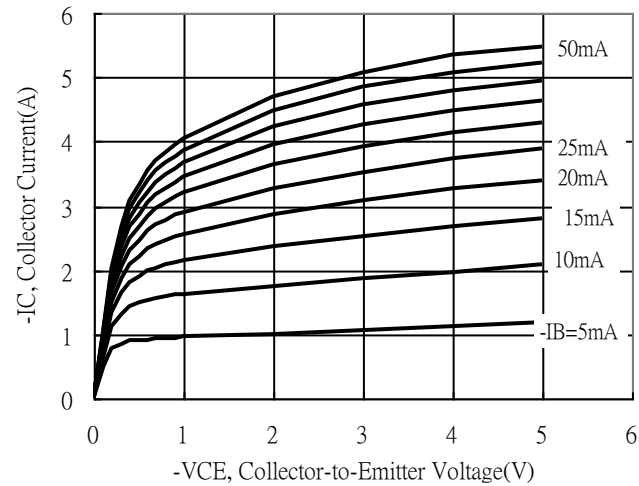
Emitter Grounded Output Characteristics



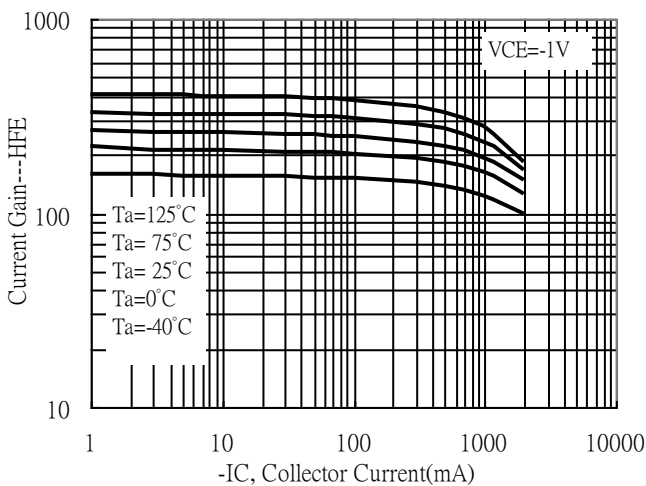
Emitter Grounded Output Characteristics



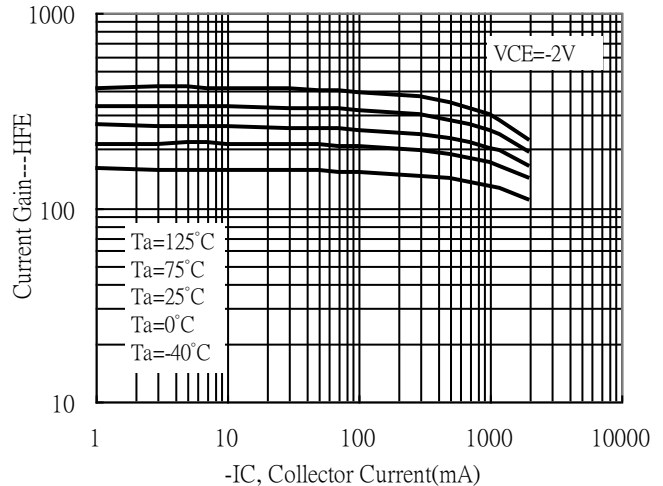
Emitter Grounded Output Characteristics



Current Gain vs Collector Current



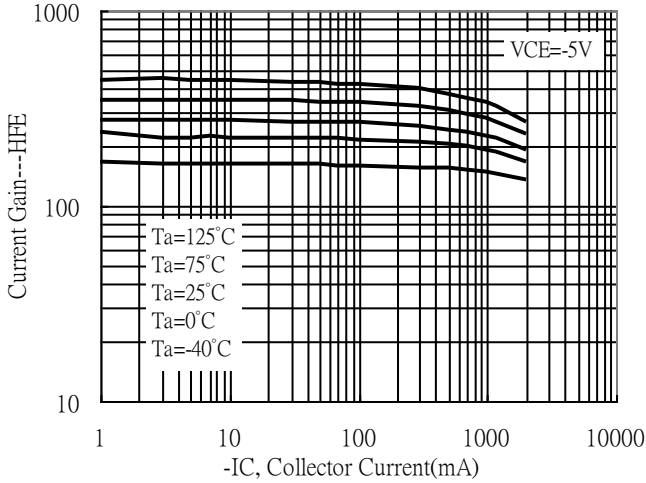
Current Gain vs Collector Current



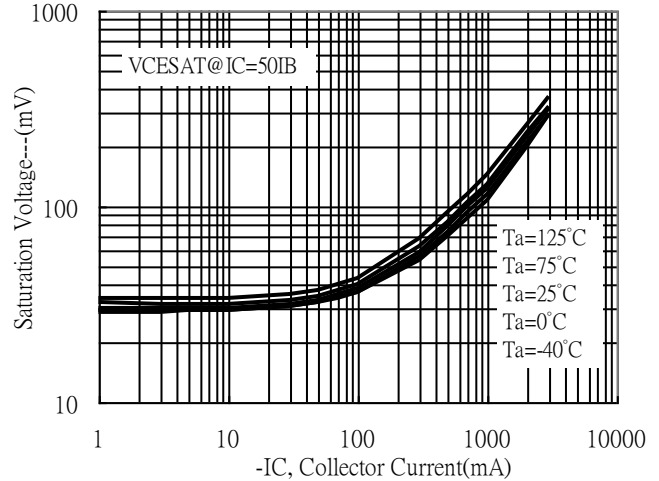


Typical Characteristics(Cont.)

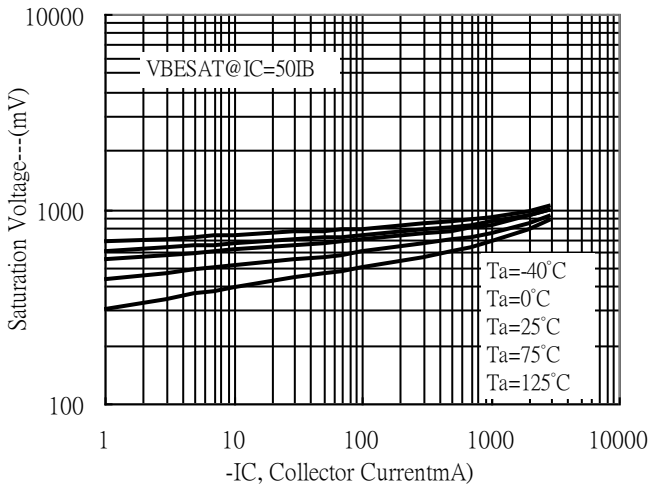
Current Gain vs Collector Current



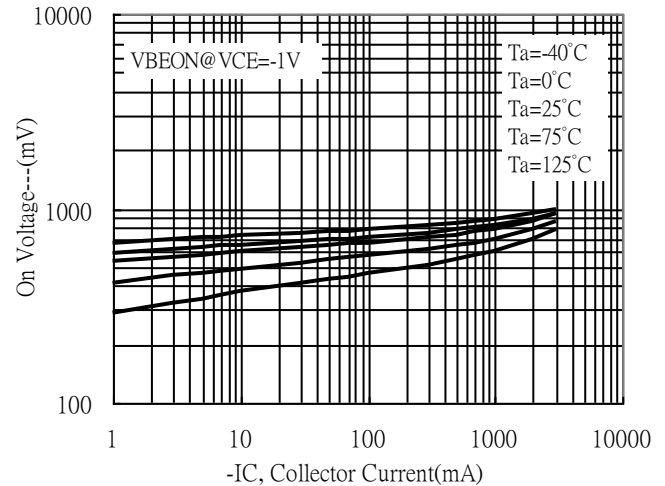
Saturation Voltage vs Collector Current



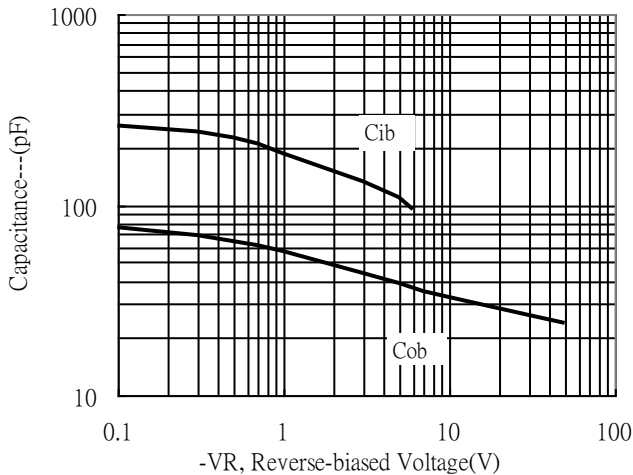
Saturation Voltage vs Collector Current



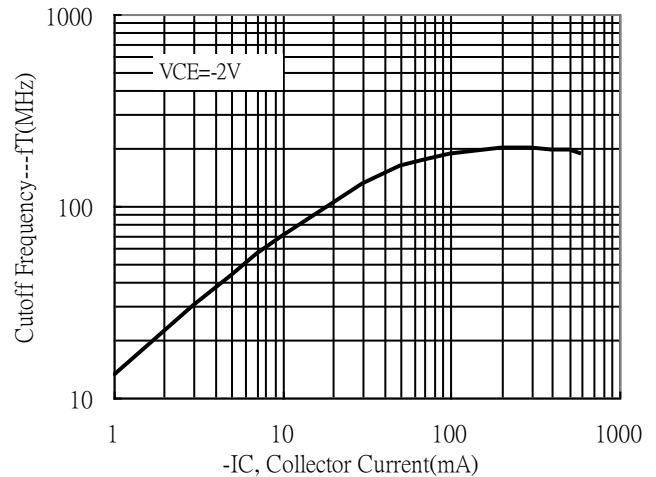
On Voltage vs Collector Current



Capacitance vs Reverse-biased Voltage



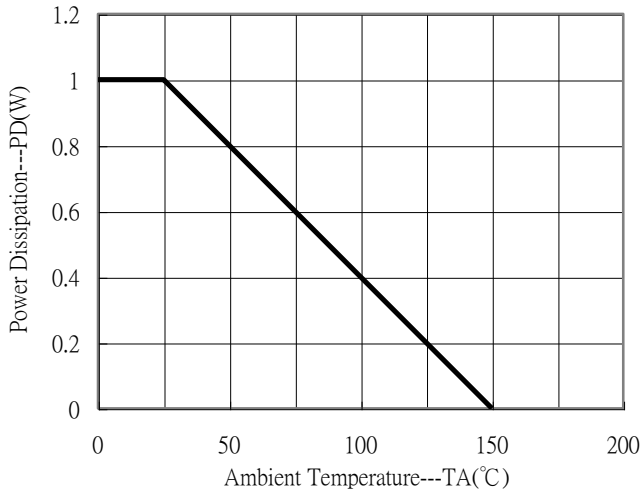
Cutoff Frequency vs Collector Current



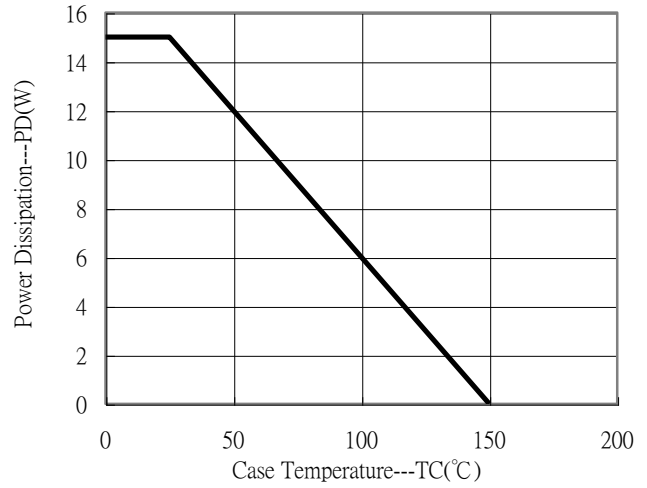


Typical Characteristics(Cont.)

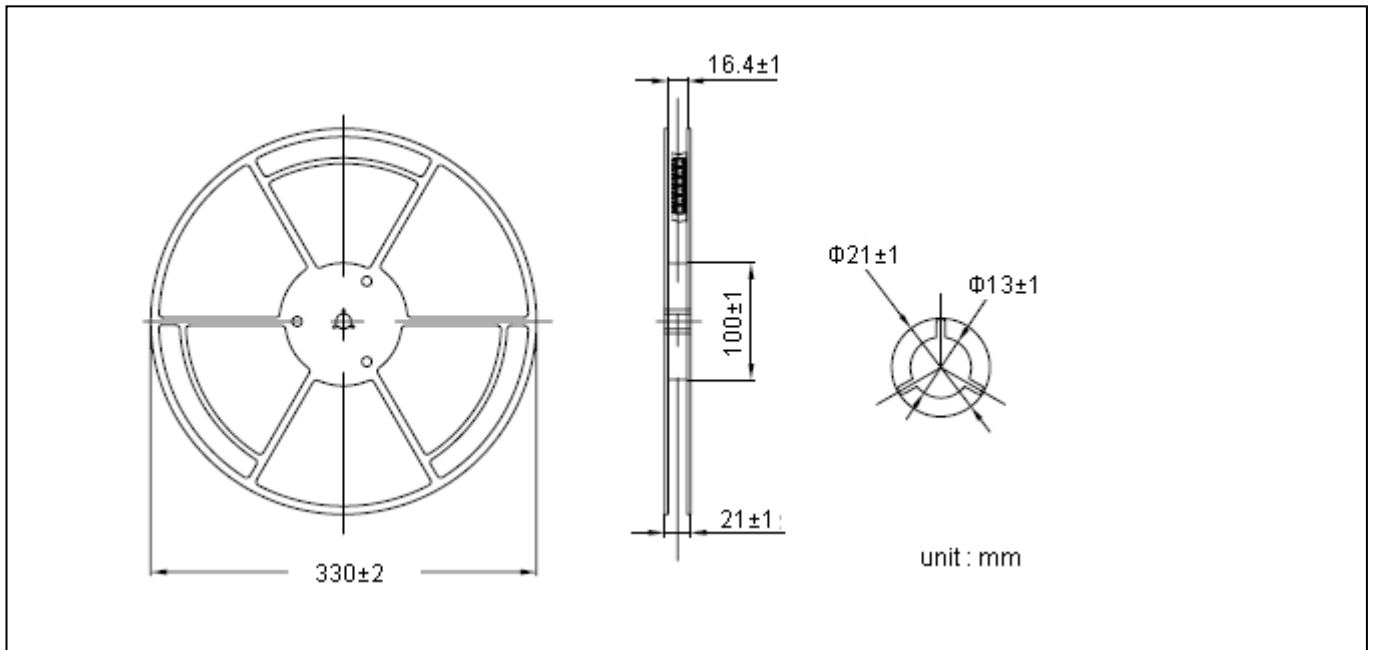
Power Derating Curve



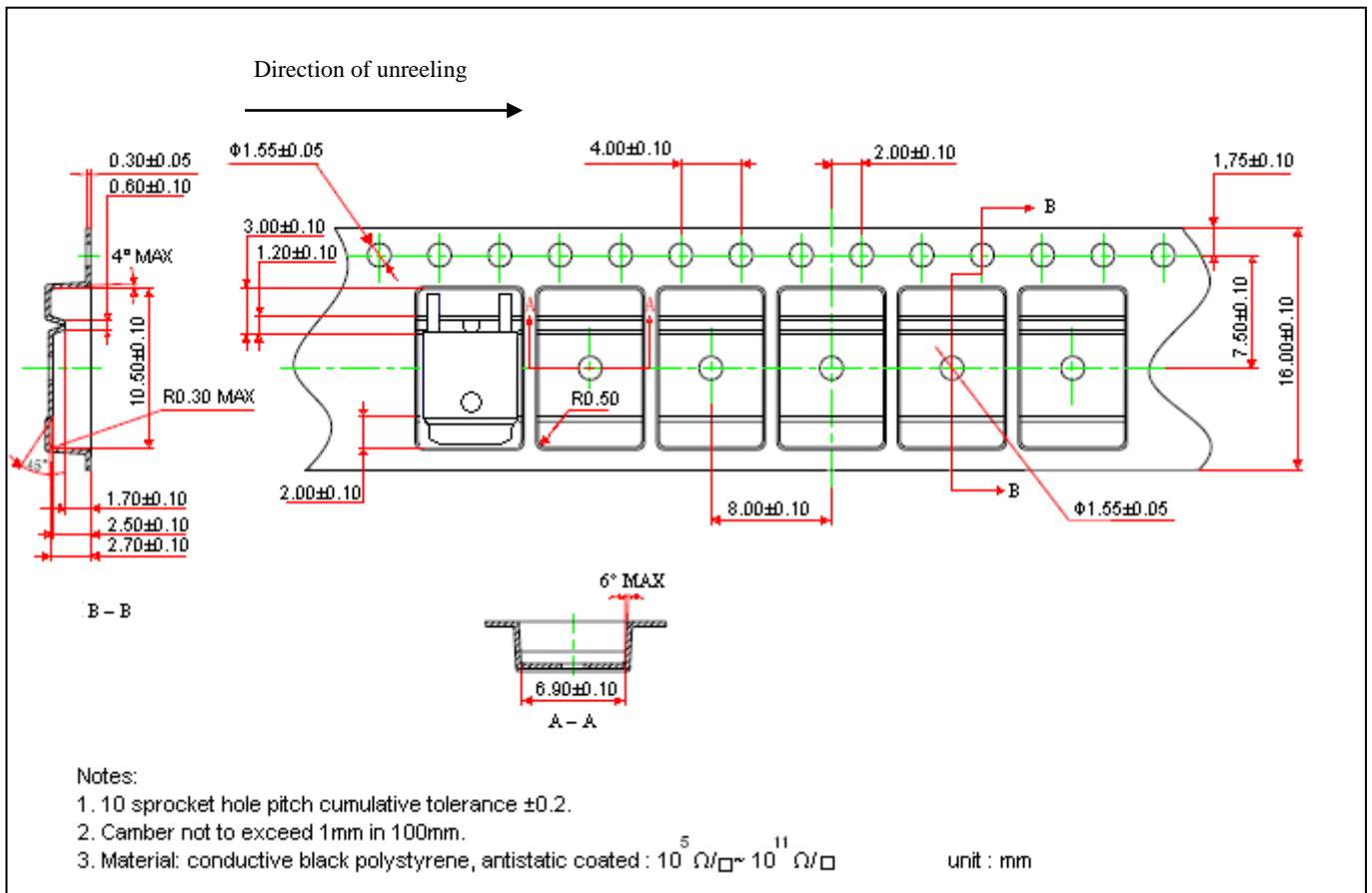
Power Derating Curve



Reel Dimension



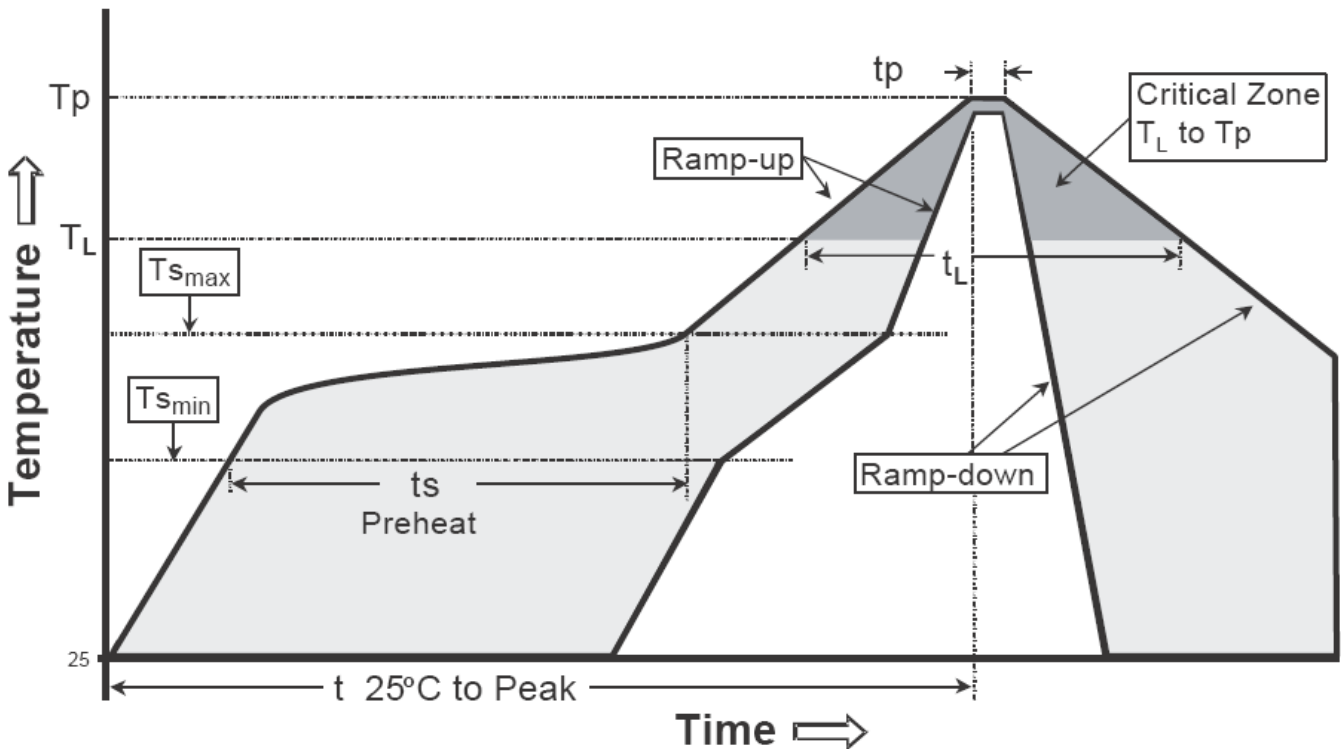
Carrier Tape Dimension



Recommended wave soldering condition

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

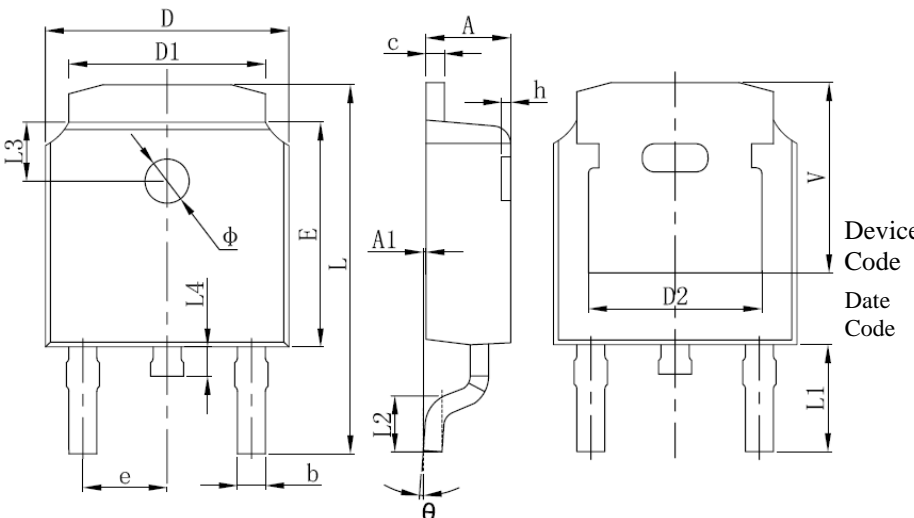
Recommended temperature profile for IR reflow



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(Ts min)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (Tl)	183°C	217°C
- Time (tl)	60-150 seconds	60-150 seconds
Peak Temperature(Tp)	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

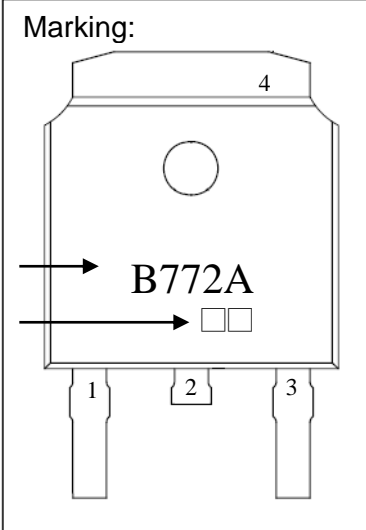


3-Lead TO-252 Plastic Surface Mount Package
 CYStek Package Code: J3

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

Date Code :
 First code : Year code, Last digit of Christian Year
 Second Code : Month code, 1~9, A, B, C

Marking:



DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.087	0.094	2.200	2.400	L	0.382	0.406	9.712	10.312
A1	0.000	0.005	0.000	0.127	L1	0.114	REF	2.900	REF
b	0.025	0.030	0.635	0.770	L2	0.055	0.067	1.400	1.700
c	0.018	0.023	0.460	0.580	L3	0.063	REF	1.600	REF
D	0.256	0.264	6.500	6.700	L4	0.024	0.039	0.600	1.000
D1	0.201	0.215	5.100	5.460	Φ	0.043	0.051	1.100	1.300
D2	0.190	REF	4.830	REF	θ	0°	8°	0°	8°
E	0.236	0.244	6.000	6.200	h	0.000	0.012	0.000	0.300
e	0.086	0.094	2.186	2.386	v	0.207	REF	5.250	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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