

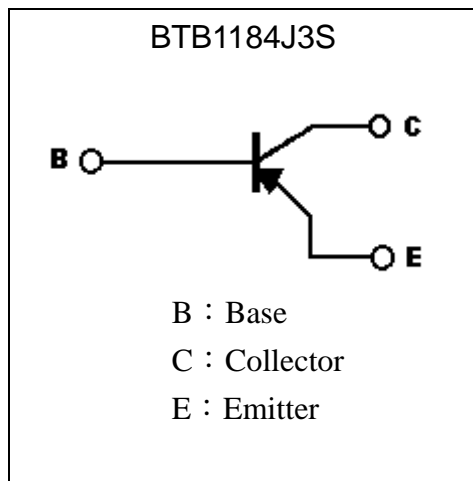
Low Vcesat PNP Epitaxial Planar Transistor
BTB1184J3S

BV_{CEO}	-50V
I_C	-3A
R_{CESAT}	130mΩ

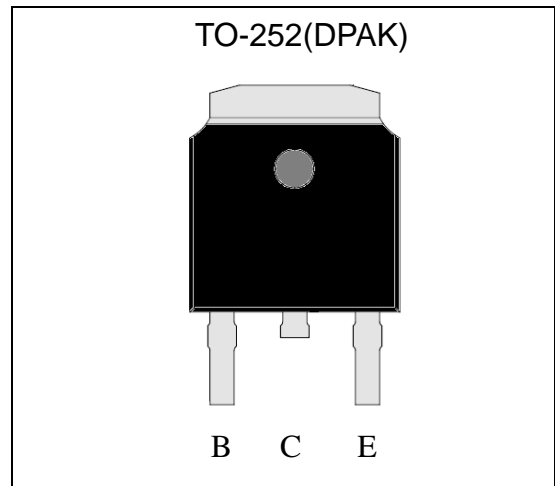
Features

- Low $V_{CE(sat)}$
- Excellent current gain characteristics
- RoHS compliant and halogen-free package

Symbol

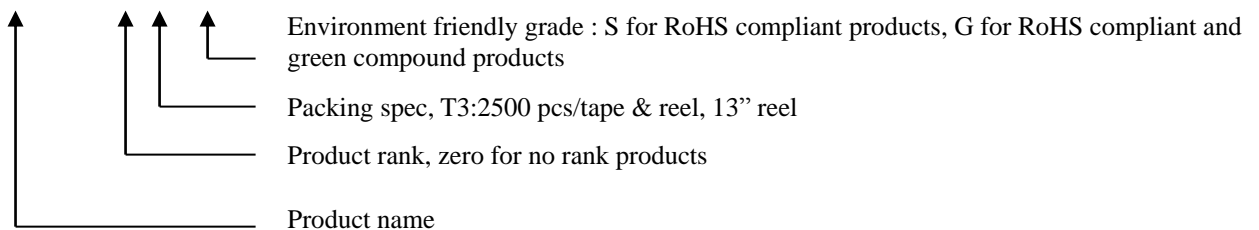


Outline



Ordering Information

Device	Package	Shipping
BTB1184J3S-X-T3-G	TO-252 (RoHS compliant and halogen-free package)	2500 pcs / Tape & Reel





Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	-60	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 (T _A =25°C)	P _d (T _A =25°C)	1	W
Power Dissipation (T _c =25°C)	P _d (T _c =25°C)	15 *2	
Thermal Resistance, Junction to Ambient	R _{θJA}	125	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	8.33 *2	
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55~+150	°C

Note : *1. Single Pulse Pw=10ms

*2 . Printed circuit board, 1.7mm thick, collector copper plating 10mm*10mm or larger.

Characteristics (Ta=25°C)

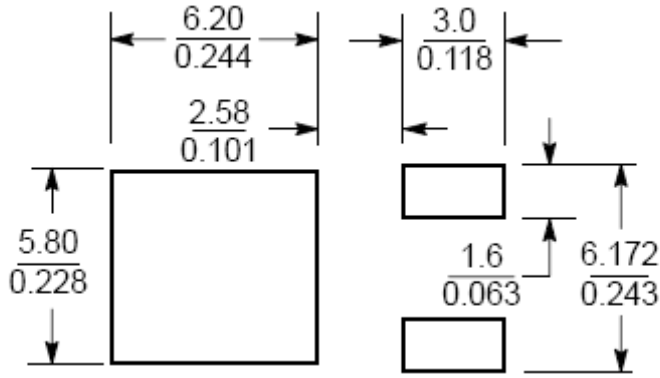
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	-60	-	-	V	I _C =-50μA, I _E =0
BV _{CEO}	-50	-	-	V	I _C =-1mA, I _B =0
BV _{EBO}	-6	-	-	V	I _E =-50μA, I _C =0
I _{CB0}	-	-	-1	μA	V _{CB} =-40V, I _E =0
I _{EBO}	-	-	-1	μA	V _{EB} =-4V, I _C =0
*V _{CE(sat)}	-	-0.26	-0.5	V	I _C =-2A, I _B =-0.1A
*R _{CE(sat)}	-	130	250	mΩ	I _C =-2A, I _B =-0.1A
*V _{BE(sat)}	-	-0.96	-1.2	V	I _C =-2A, I _B =-0.1A
*h _{FE1}	120	-	-	-	V _{CE} =-2V, I _C =-20mA
*h _{FE2}	180	-	560	-	V _{CE} =-3V, I _C =-500mA
*h _{FE3}	80	-	-	-	V _{CE} =-2V, I _C =-1A
f _T	-	80	-	MHz	V _{CE} =-5V, I _C =-0.1A, f=100MHz
Cob	-	35	-	pF	V _{CB} =-10V, f=1MHz

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

Classification Of hFE2

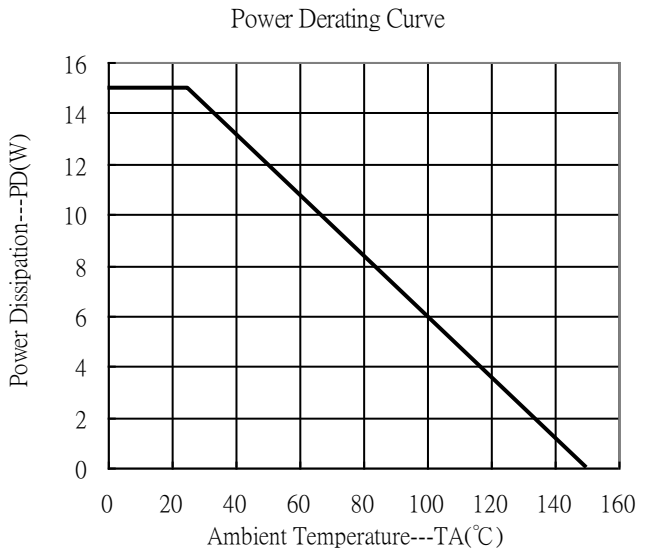
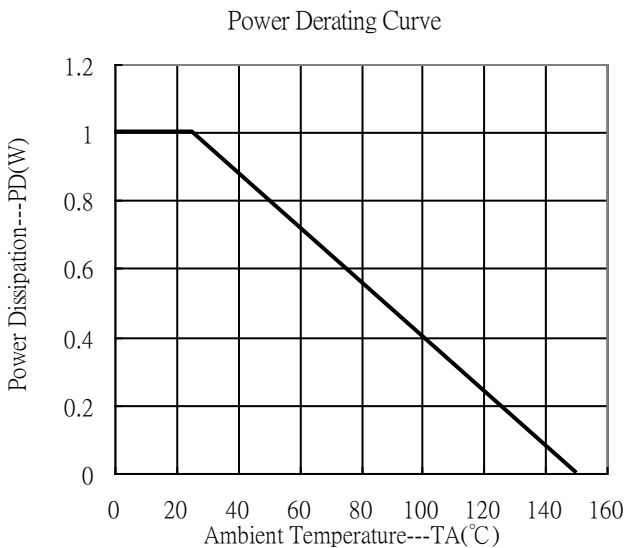
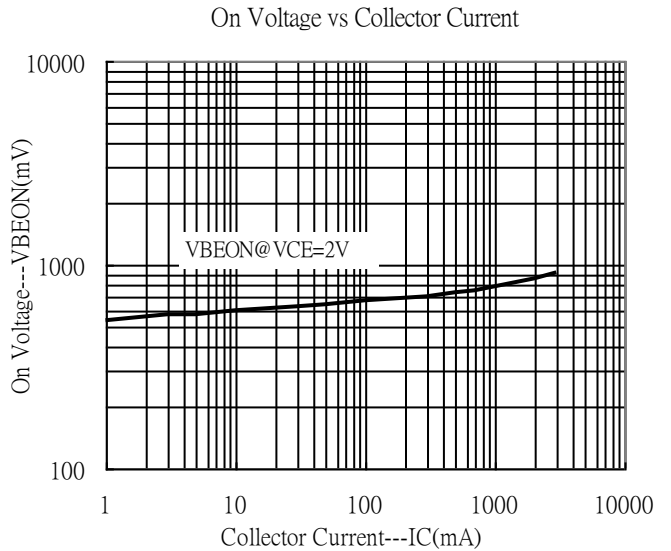
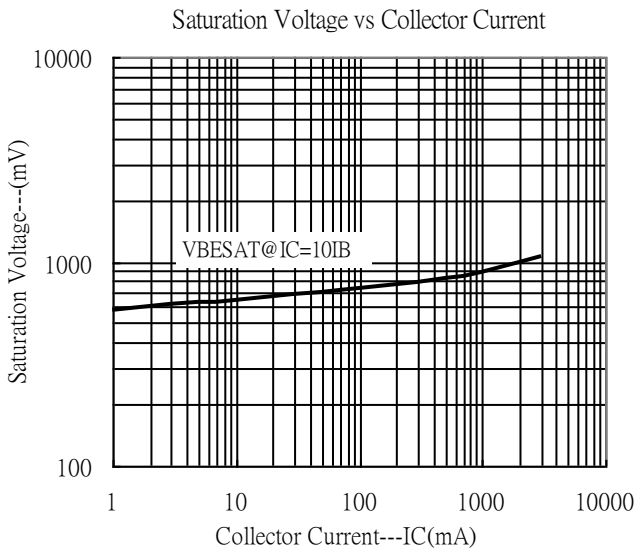
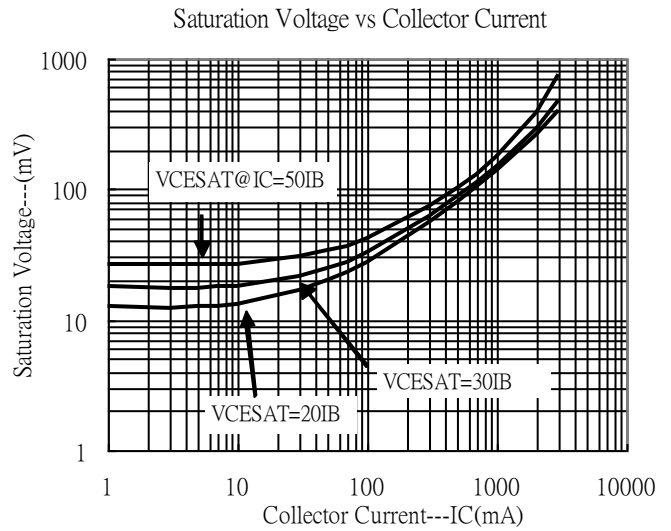
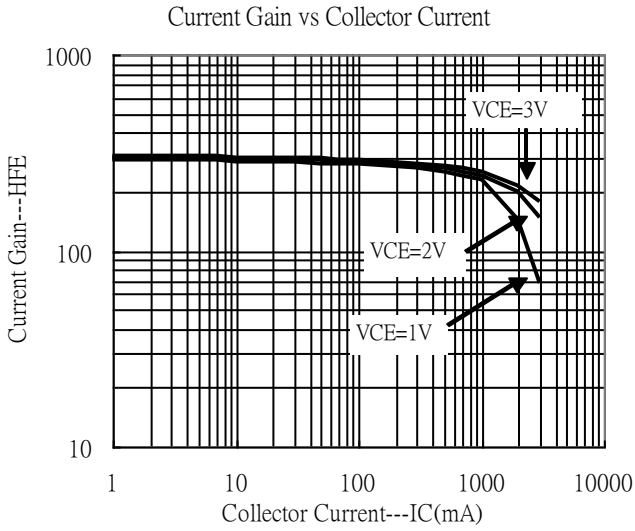
Rank	R	S
Range	180~390	270~560

Recommended soldering footprint



Unit ($\frac{\text{mm}}{\text{inch}}$)

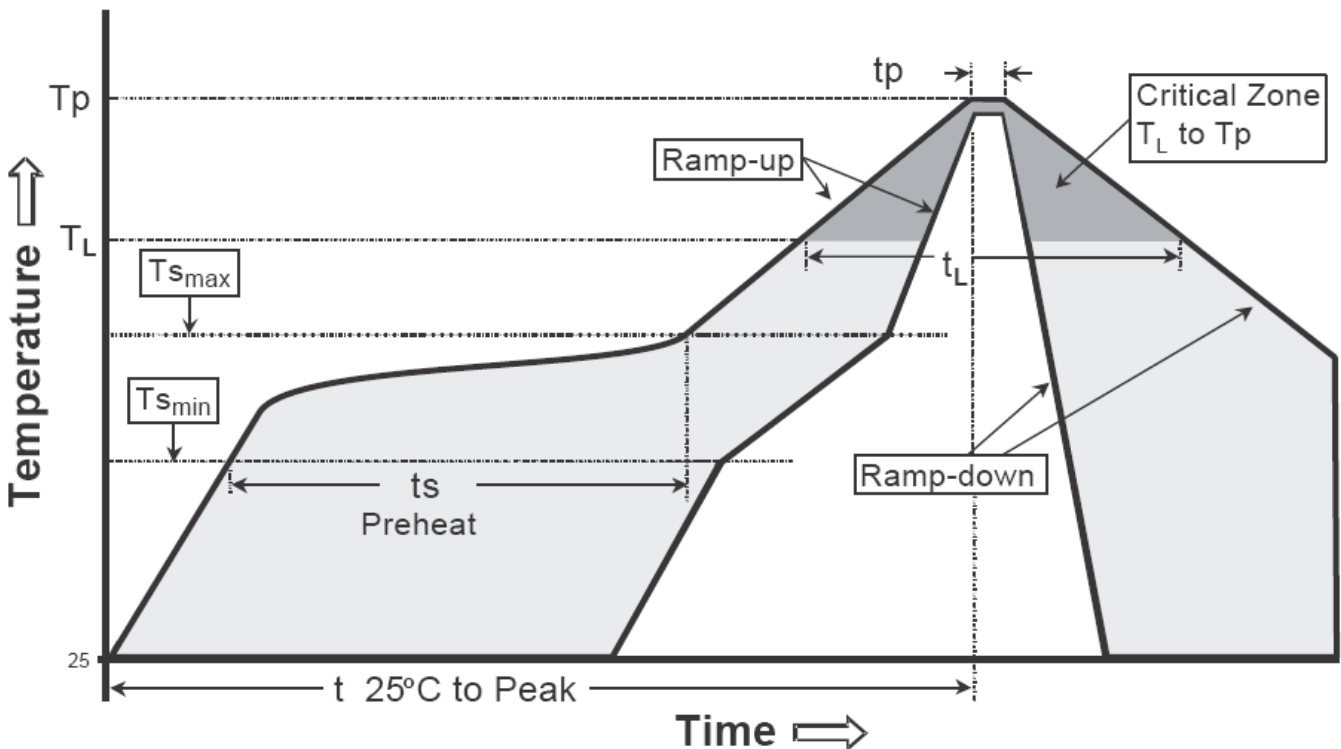
Typical Characteristics



Recommended wave soldering condition

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

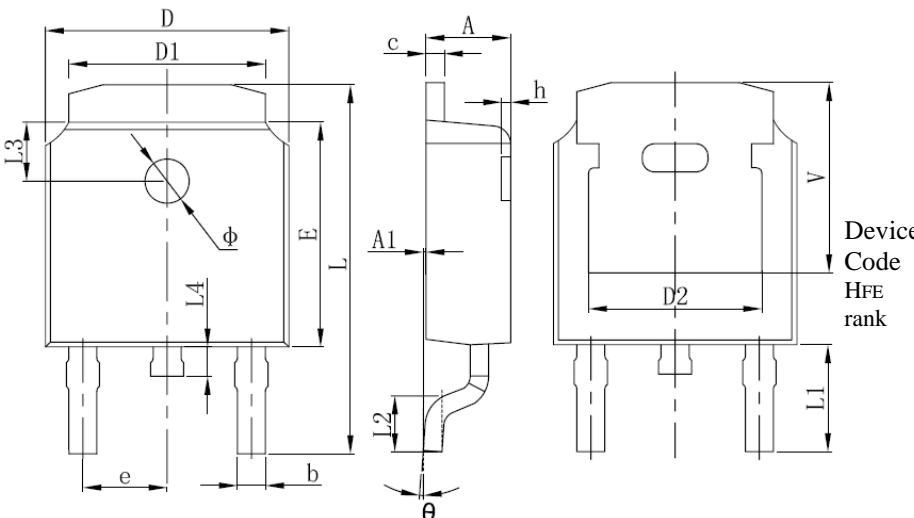
Recommended temperature profile for IR reflow



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 (T _L)	183°C	217°C
- Time (t _L)	60-150 seconds	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

Date Code :

1st Code : year code, the last digit of Christian year, 2018→8, 2019→9, 2020→0, 2021→1, ..., etc.

2nd Code : month code, Jan→1, Feb→2, Mar→3, Apr→4, May→5, Jun→6, Jul→7, Aug→8, Sep→9, Oct→A, Nov→B, Dec→C

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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