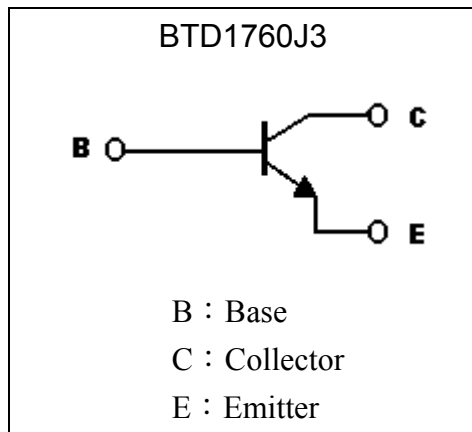
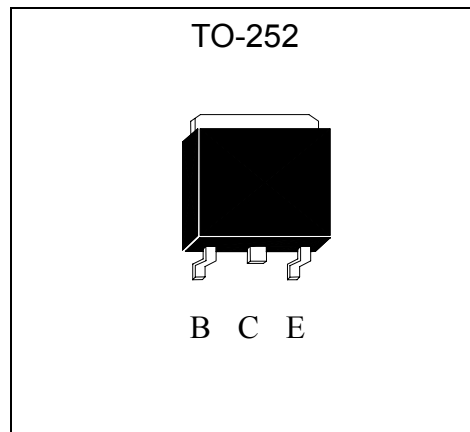


**Low Vcesat NPN Epitaxial Planar Transistor**

# BTD1760J3

**Features**

- Low  $V_{CE(sat)}$ ,  $V_{CE(sat)}=0.25\text{ V}$  (typical), at  $I_C / I_B = 2\text{A} / 0.2\text{A}$
- Excellent current gain characteristics
- Complementary to BTB1184J3
- 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	$V_{EBO}$	5	V
Collector Current(DC)	$I_C$	3	A
Collector Current(Pulse)	$I_{CP}$	7 *1	
Power Dissipation( $T_A=25^\circ\text{C}$ )	$P_d(T_A=25^\circ\text{C})$	1	W
Power Dissipation( $T_C=25^\circ\text{C}$ )	$P_d(T_C=25^\circ\text{C})$	15 *2	
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

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

\*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
$BV_{CB0}$	50	-	-	V	$I_C=50\mu A, I_E=0$
$BV_{CE0}$	50	-	-	V	$I_C=1mA, I_B=0$
$BV_{EB0}$	5	-	-	V	$I_E=50\mu A, I_C=0$
$I_{C0}$	-	-	1	$\mu A$	$V_{CB}=30V, I_E=0$
$I_{E0}$	-	-	1	$\mu A$	$V_{EB}=4V, I_C=0$
* $V_{CE(sat)}$	-	0.25	0.5	V	$I_C=2A, I_B=0.2A$
* $V_{BE(sat)}$	-	-	2	V	$I_C=2A, I_B=0.2A$
* $h_{FE1}$	52	-	-	-	$V_{CE}=2V, I_C=20mA$
* $h_{FE2}$	82	-	560	-	$V_{CE}=2V, I_C=0.1A$
* $h_{FE3}$	82	-	-	-	$V_{CE}=2V, I_C=1A$
$f_T$	-	90	-	MHz	$V_{CE}=5V, I_C=0.5A, f=100MHz$
Cob	-	45	-	pF	$V_{CB}=10V, f=1MHz$

\*Pulse Test : Pulse Width  $\leq 380\mu s$ , Duty Cycle  $\leq 2\%$ **Classification Of  $h_{FE2}$** 

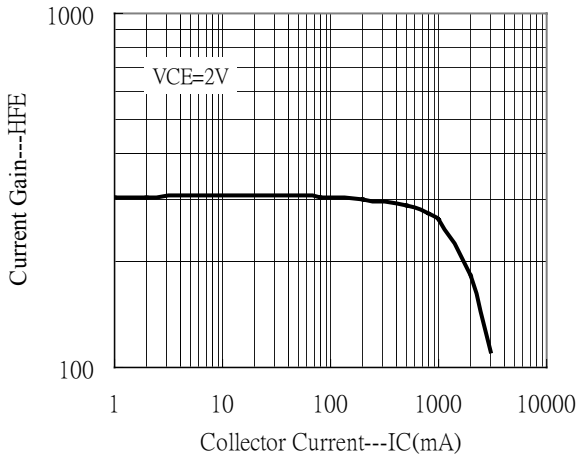
Rank	P	Q	R	S
Range	82~180	120~270	180~390	270~560

**Ordering Information**

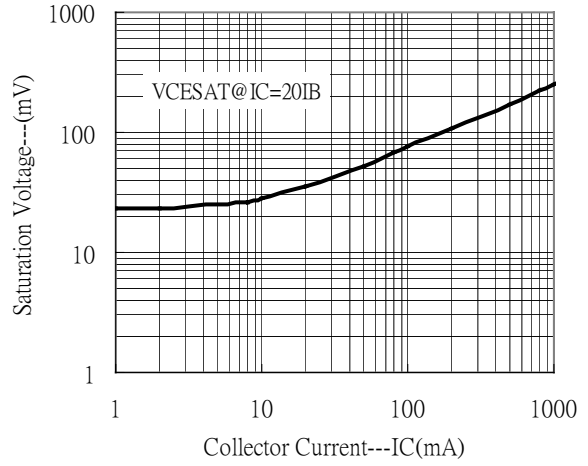
Device	Package	Shipping	Marking
BTD1760J3	TO-252 (Pb-free)	2500 pcs / Tape & Reel	D1760

**Characteristic Curves**

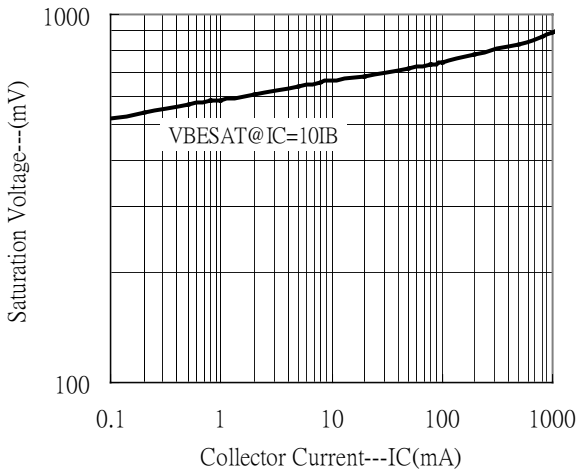
Current Gain vs Collector Current



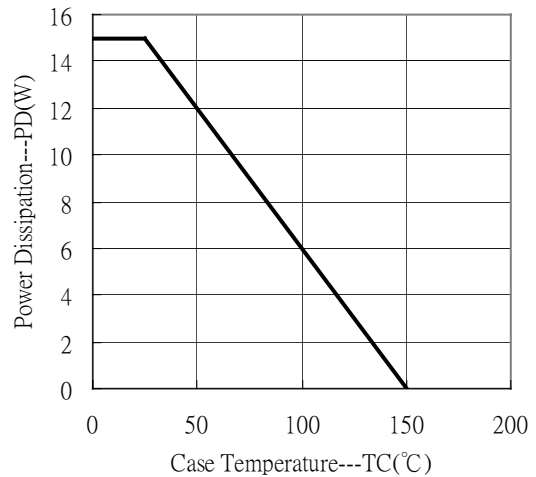
Saturation Voltage vs Collector Current



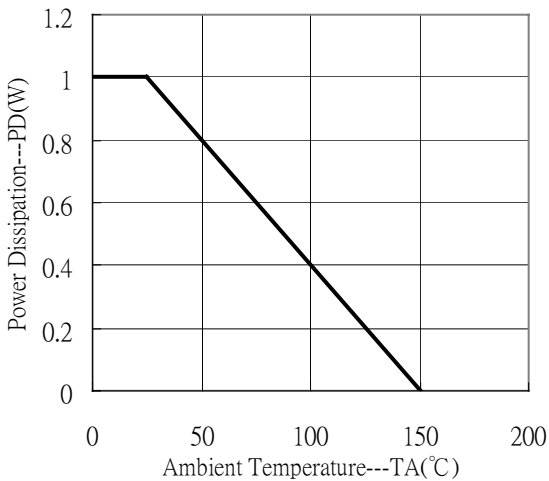
Saturation Voltage vs Collector Current



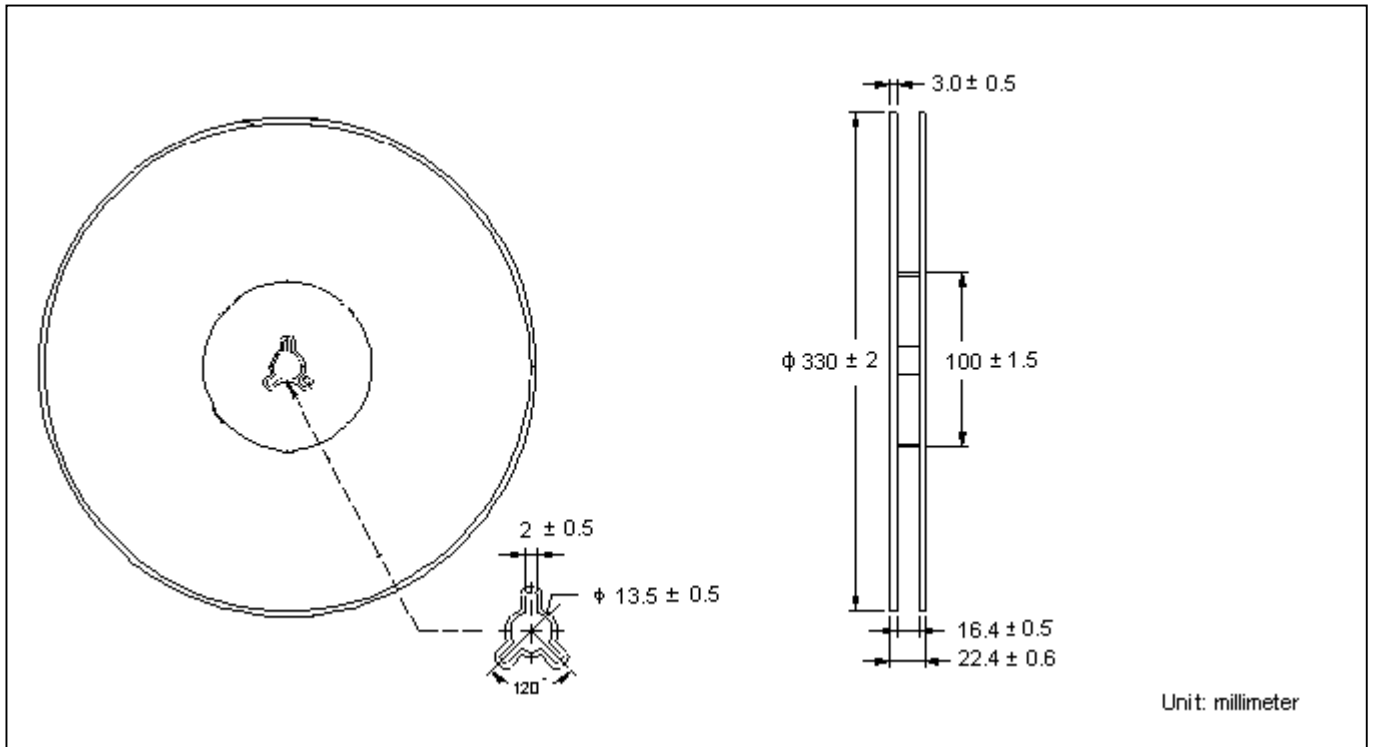
Power Derating Curve



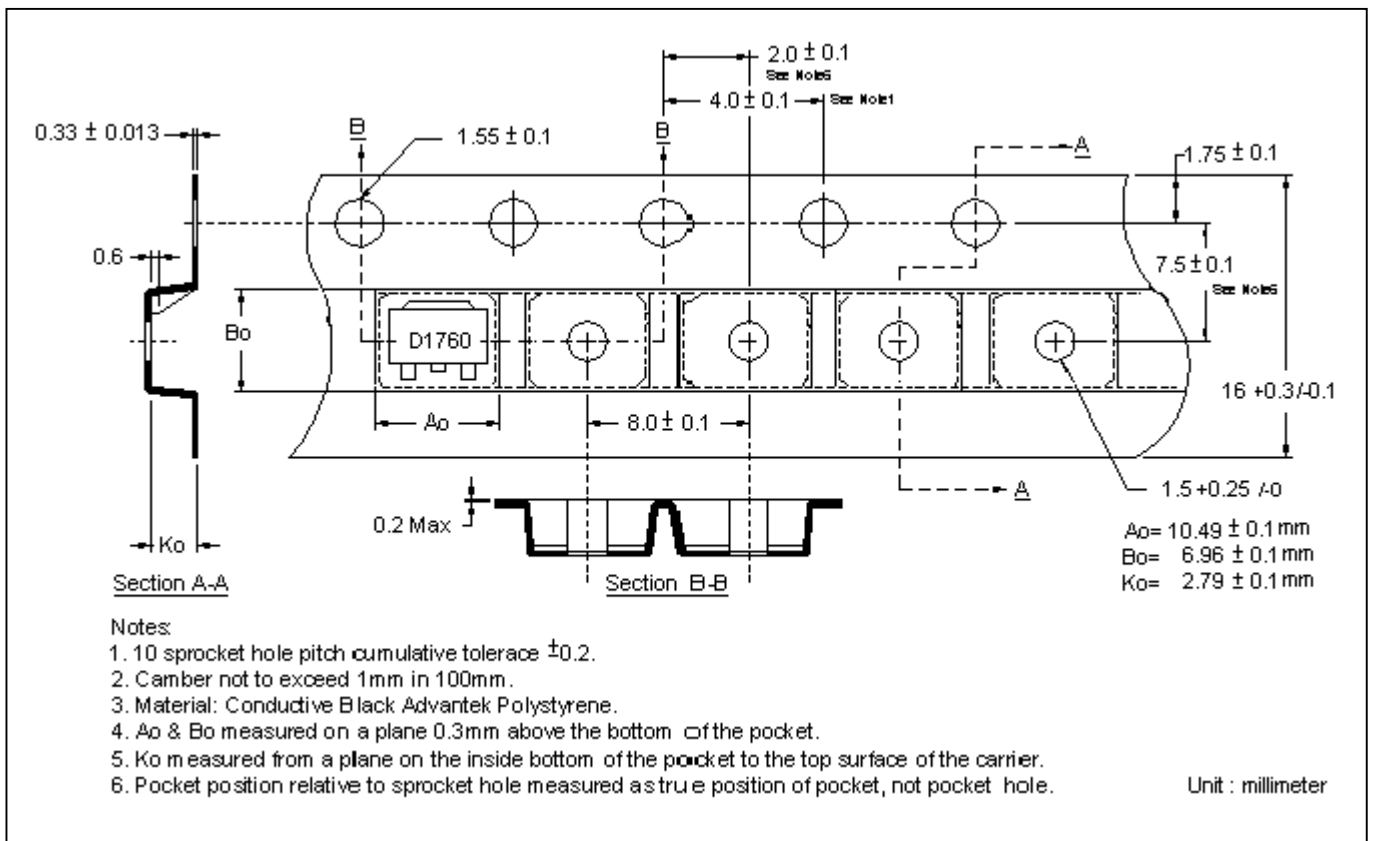
Power Derating Curve



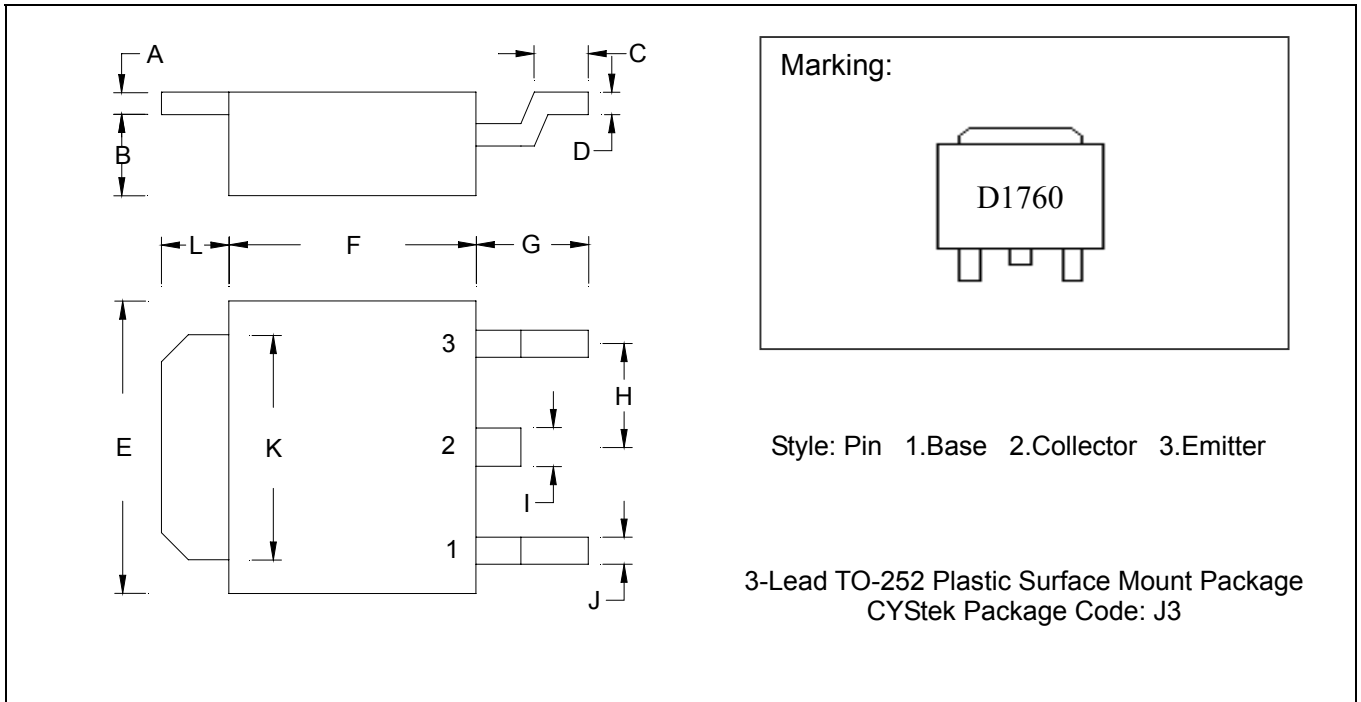
## Reel Dimension



## Carrier Tape Dimension



**TO-252 Dimension**



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

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

\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0177	0.0217	0.45	0.55	G	0.0866	0.1102	2.20	2.80
B	0.0650	0.0768	1.65	1.95	H	-	*0.0906	-	*2.30
C	0.0354	0.0591	0.90	1.50	I	-	0.0354	-	0.90
D	0.0177	0.0236	0.45	0.60	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2125	0.2283	5.40	5.80	L	0.0551	0.0630	1.40	1.60

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: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

**Important Notice:**

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of CYStek.
- CYStek reserves the right to make changes to its products without notice.
- CYStek **semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- CYStek assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.