Low Vcesat NPN Epitaxial Planar Transistor

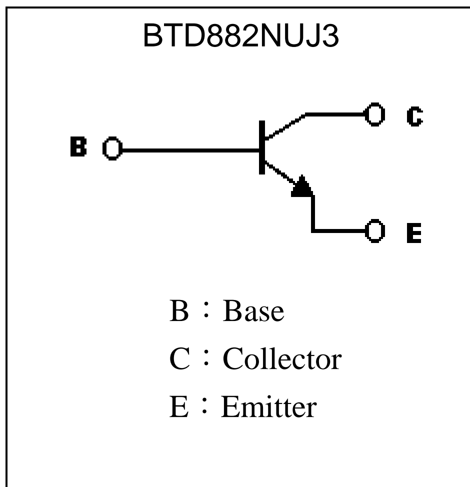
BTD882NUJ3

BV_{CEO}	30V
I_C	3A

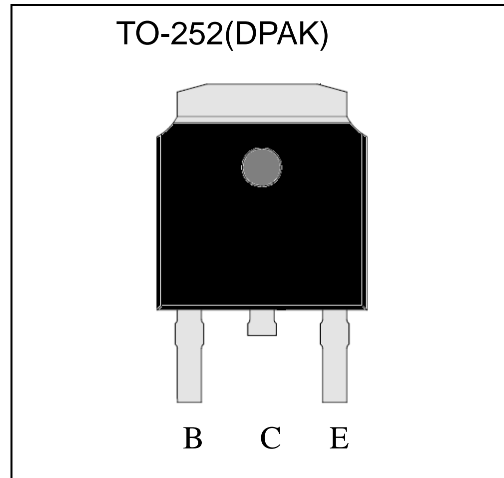
Features

- Low $V_{CE(sat)}$, 0.2V typ. at I_C / I_B = 2A / 0.2A
- Excellent current gain characteristics
- Complementary to BTB772NUJ3
- Pb-free lead plating and halogen-free package

Symbol

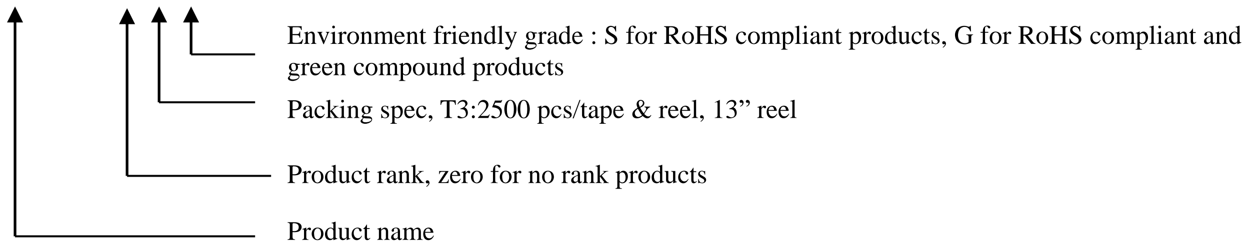


Outline



Ordering Information

Device	Package	Shipping
BTD882NUJ3-P-T3-G	TO-252 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel



Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	40	V
Collector-Emitter Voltage		V_{CEO}	30	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	3	A
	Pulse		7 *1	A
Power Dissipation	Ta=25℃	P_D	1	W
	Tc=25℃		10	
Operating Junction and Storage Temperature Range		Tj ; Tstg	-55~+150	°C

Note : *1. Single Pulse Pw≦350μs,Duty≦2%.

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient, max	$R_{\theta JA}$	125	°C/W
Thermal Resistance, Junction-to-Case, max	$R_{\theta JC}$	12.5	

Characteristics (Ta=25°C)

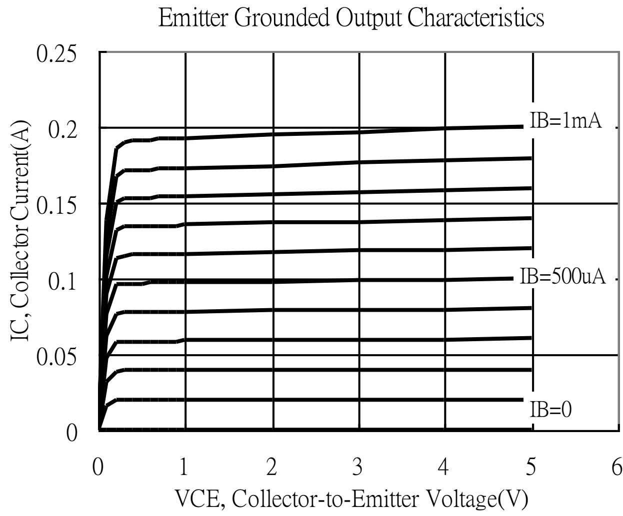
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	40	-	-	V	I_C=50μA, I_E=0
BV_{CEO}	30	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	9	-	-	V	I_E=50μA, I_C=0
I_{CBO}	-	-	100	nA	V_{CB}=40V, I_E=0
I_{EBO}	-	-	100	nA	V_{EB}=6V, I_C=0
*$V_{CE(sat)}$	-	0.2	0.5	V	I_C=2A, I_B=0.2A
*$V_{BE(sat)}$	-	1	1.5	V	I_C=2A, I_B=0.2A
*h_{FE} 1	100	-	-	-	V_{CE}=2V, I_C=20mA
*h_{FE} 2	160	-	320	-	V_{CE}=2V, I_C=1A
f_T	-	90	-	MHz	V_{CE}=5V, I_C=0.1A, f=100MHz
Cob	-	17	-	pF	V_{CB}=10V, f=1MHz

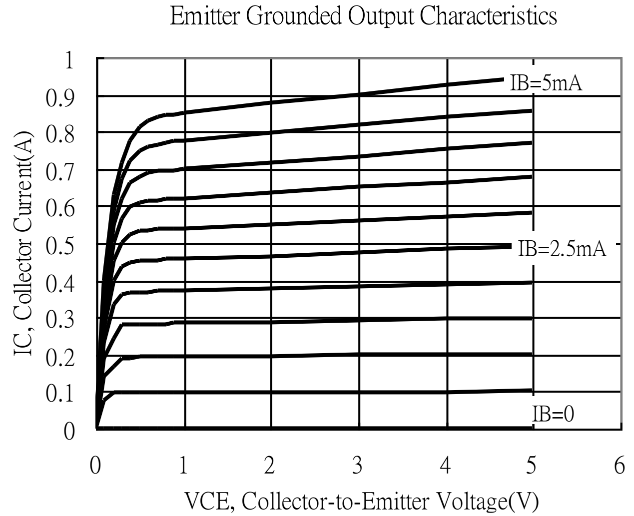
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

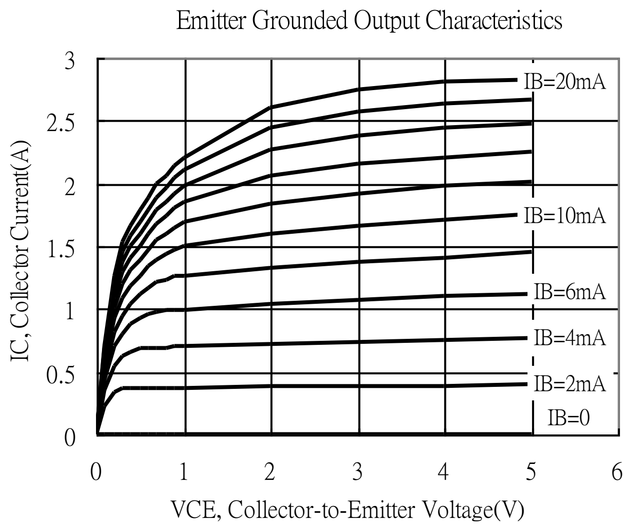
Classification Of h_{FE} 2

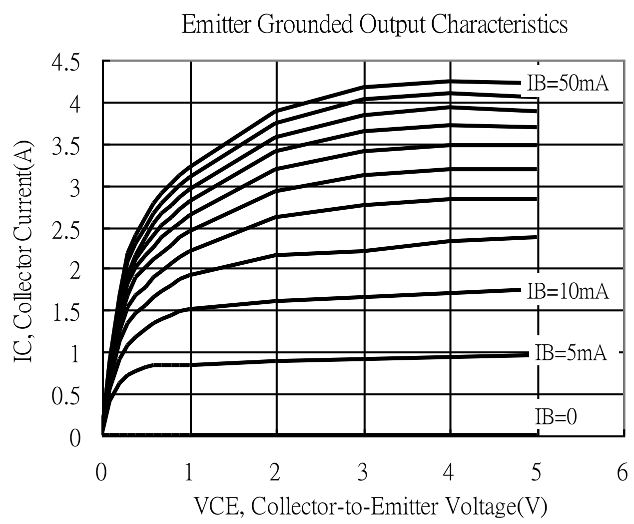
Rank	P
Range	160~320

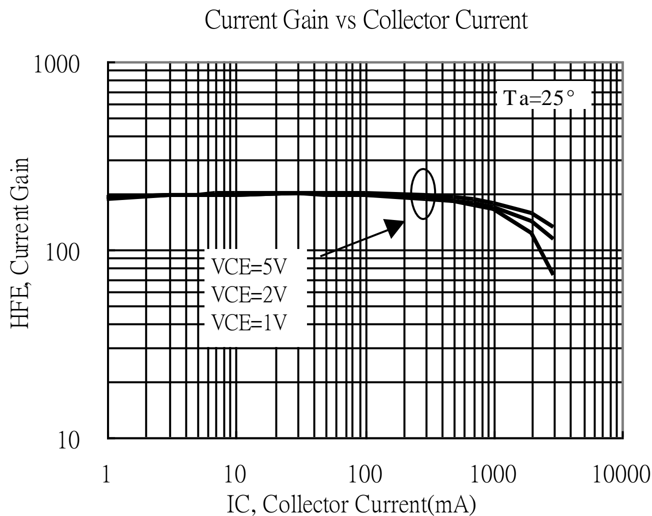
Typical Characteristics

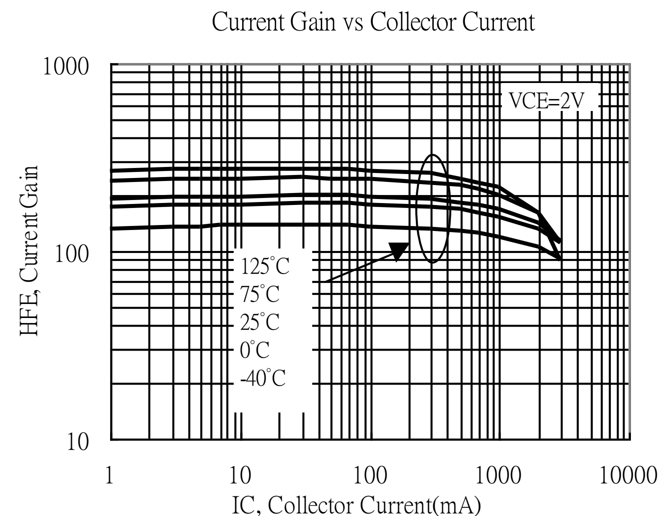




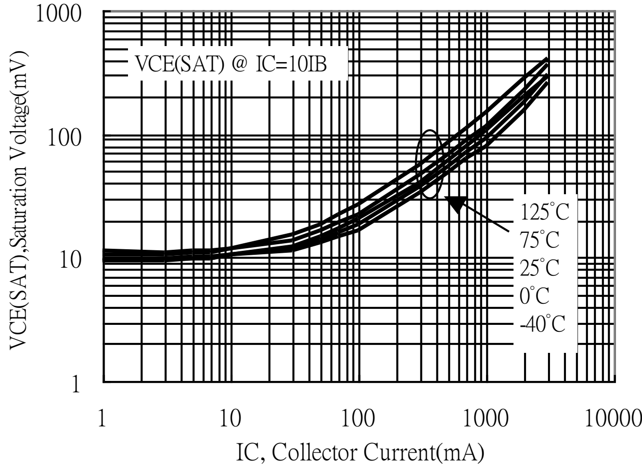


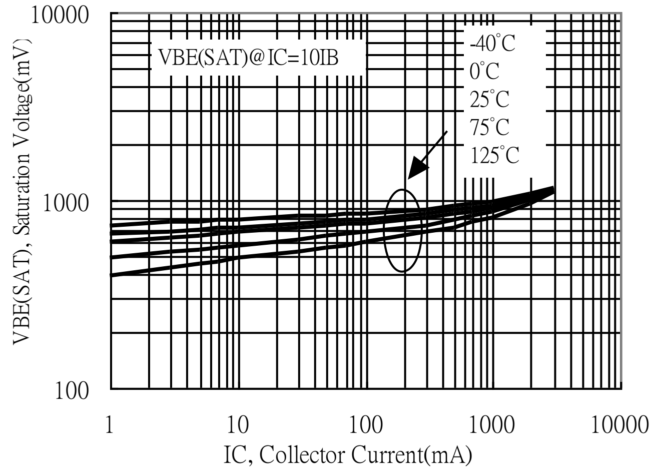


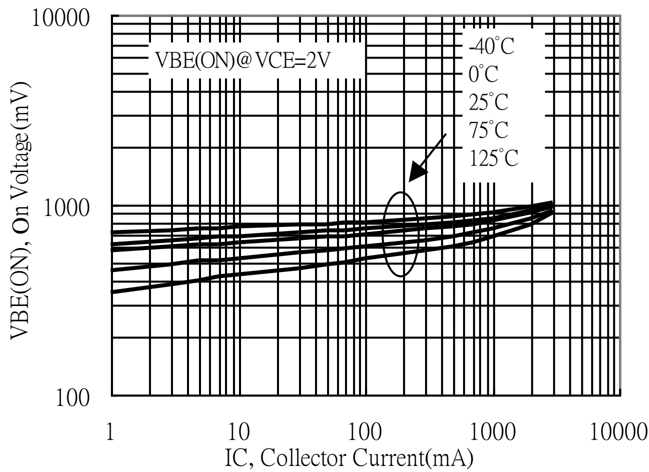


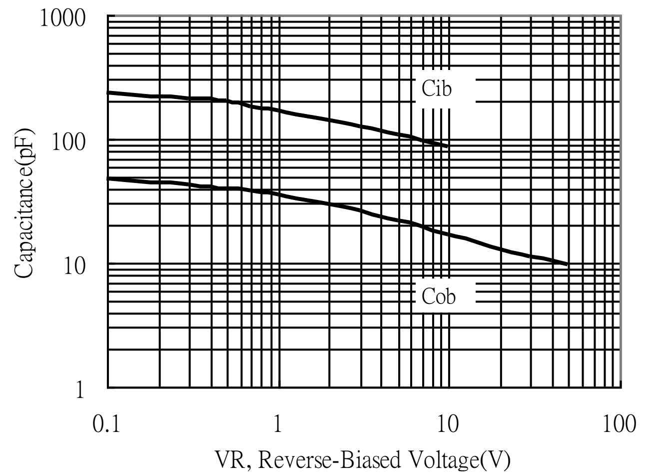


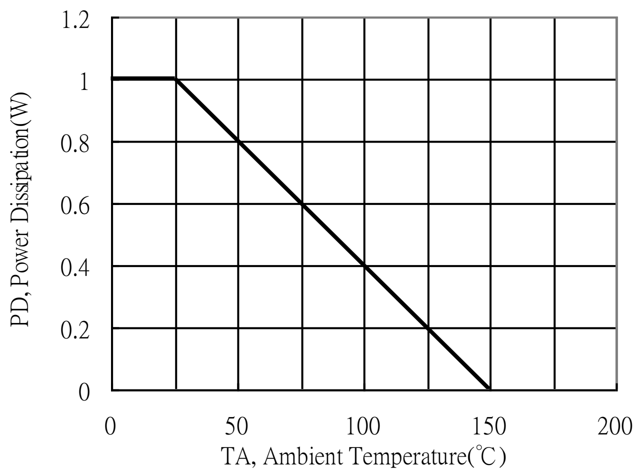
Typical Characteristics(Cont.)

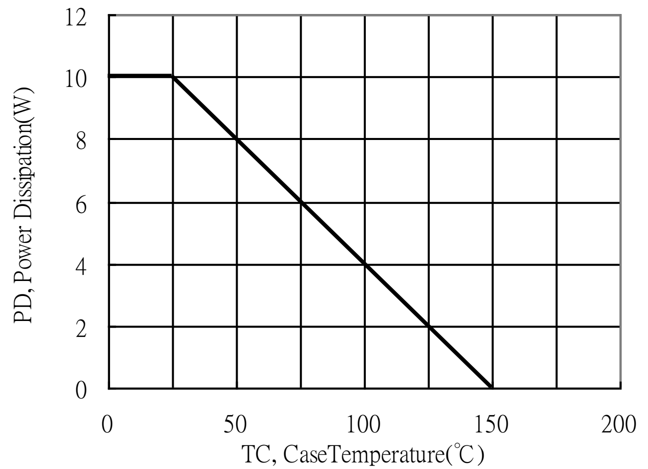




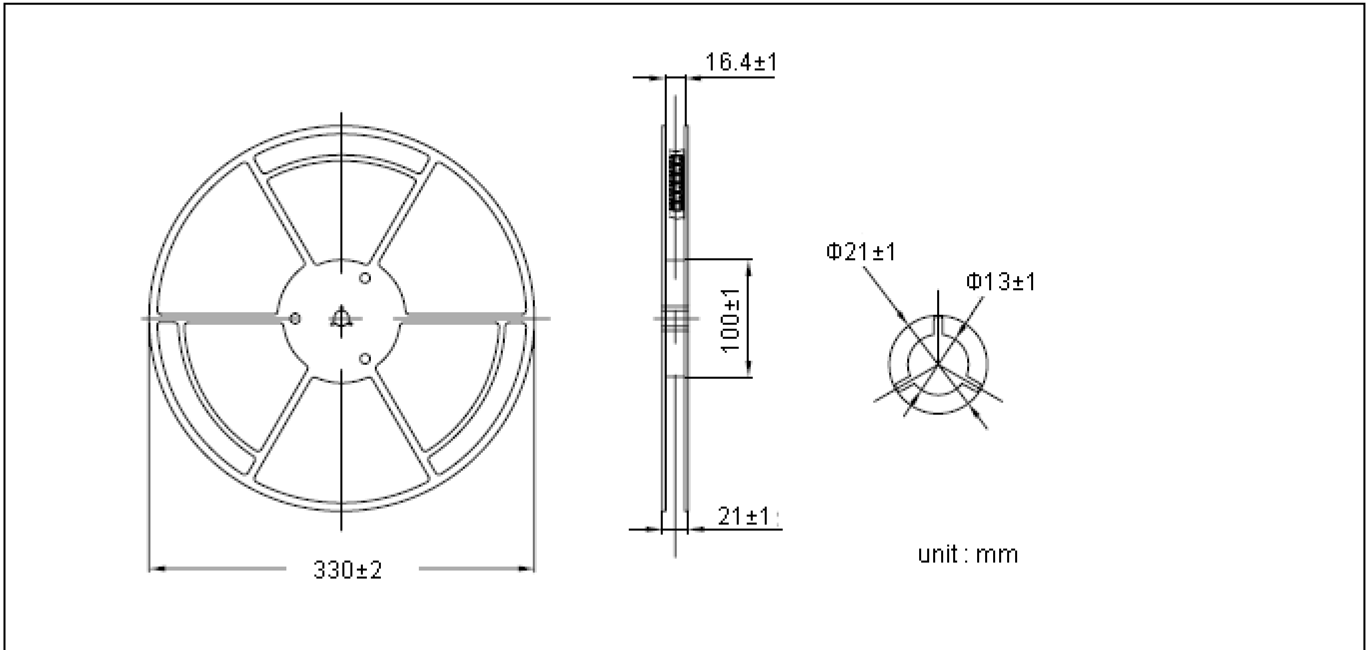




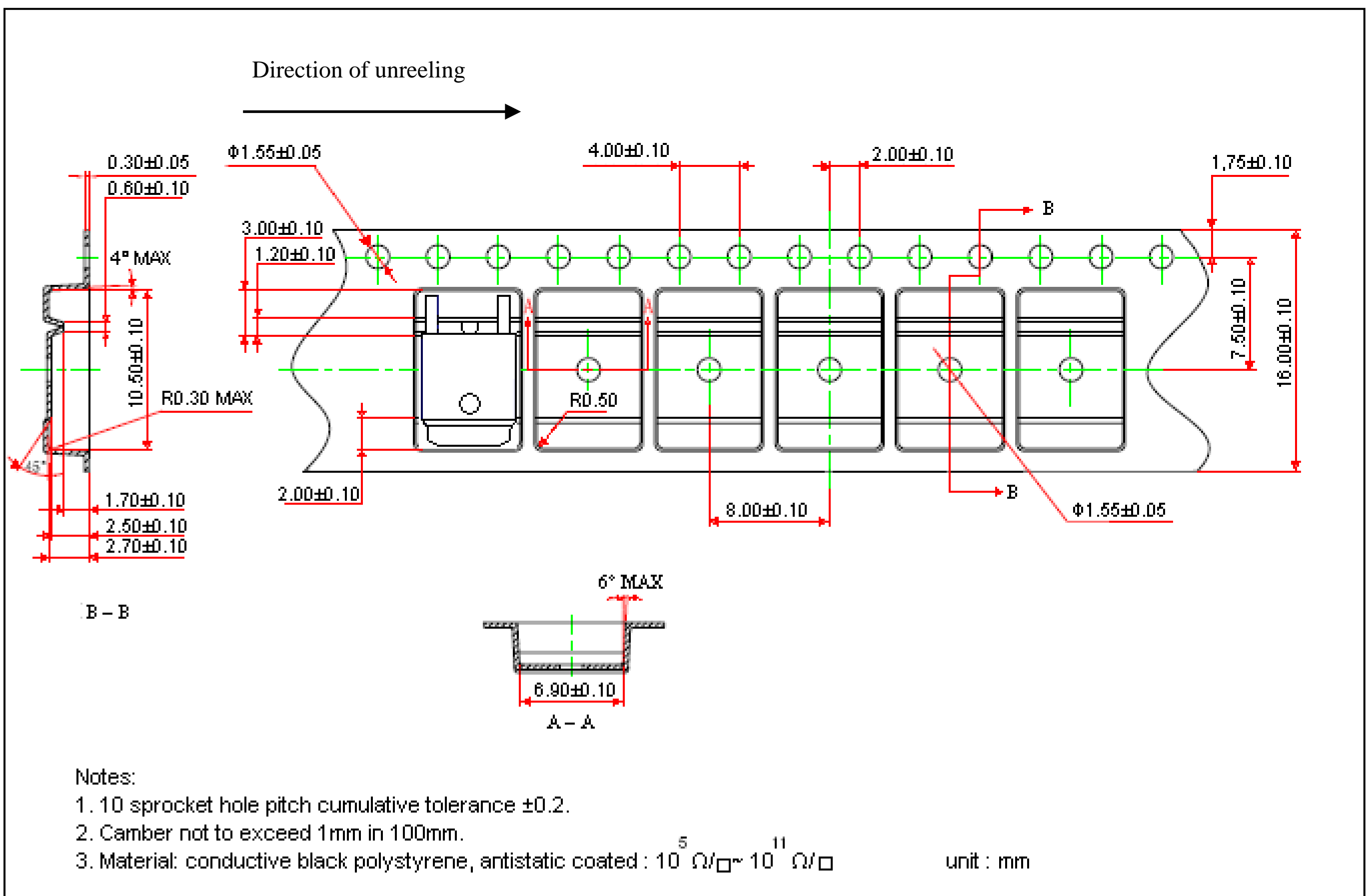




Reel Dimension



Carrier Tape Dimension



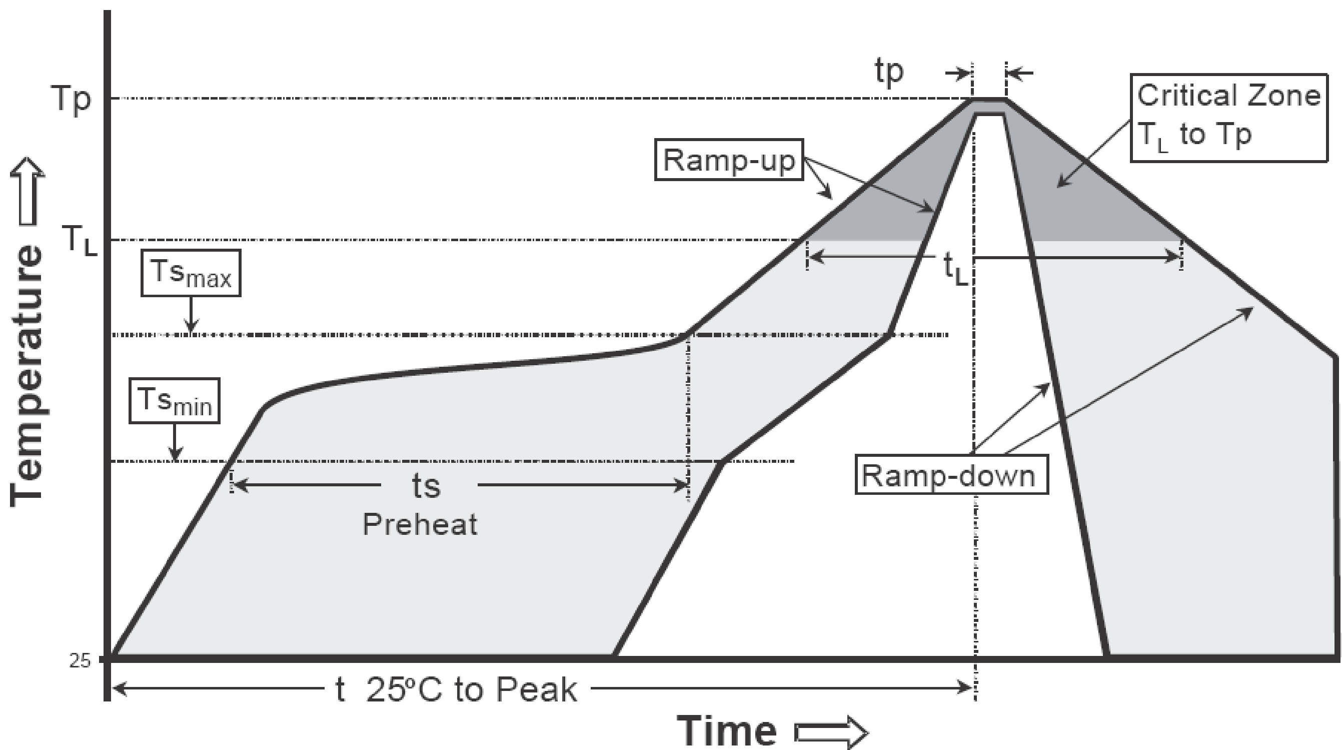
Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: conductive black polystyrene, antistatic coated : 10^5 Ω/□ ~ 10^{11} Ω/□

unit : mm

Recommended wave soldering condition

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

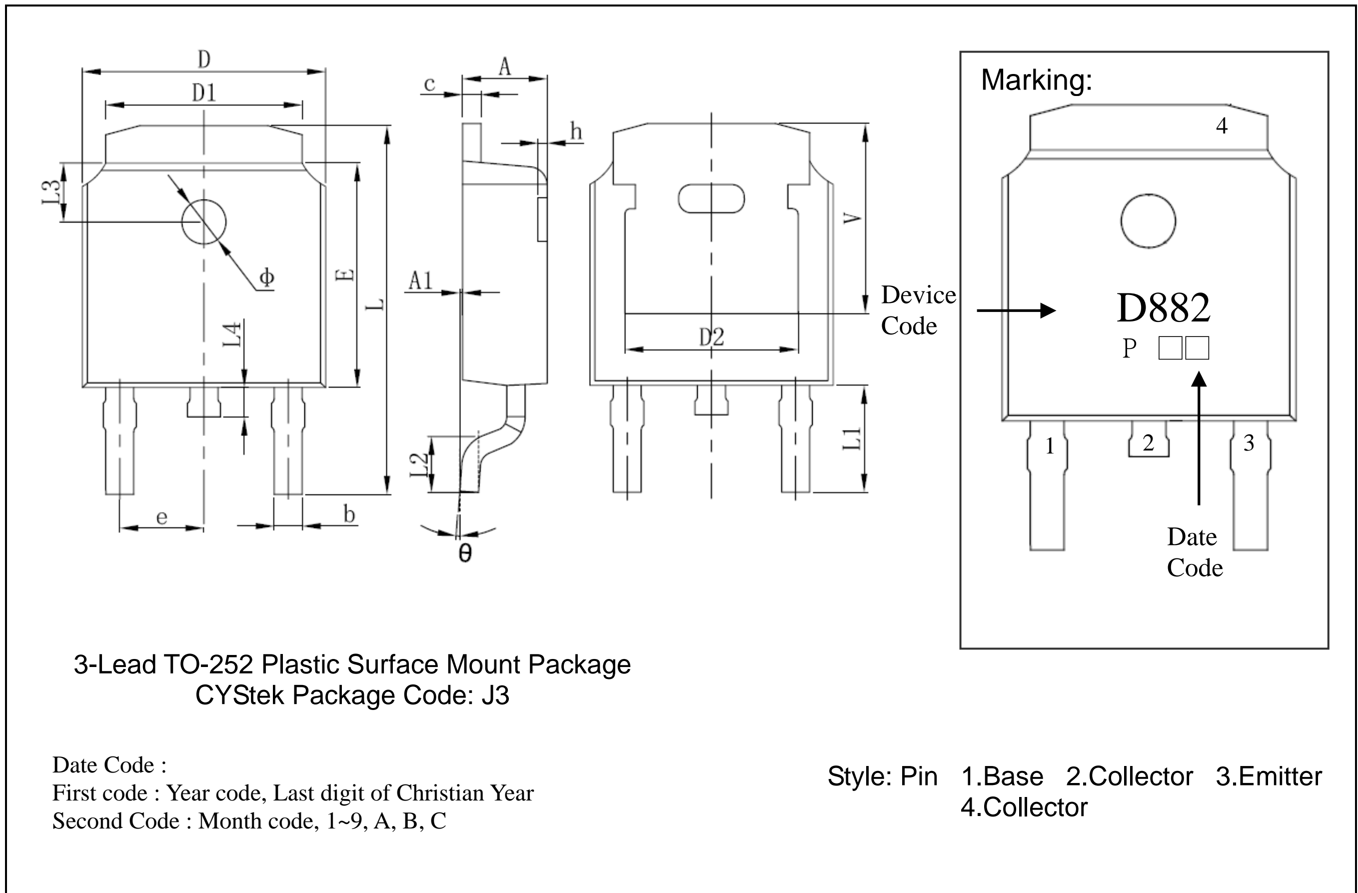
Recommended temperature profile for IR reflow



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) −Temperature Max(Ts max) −Time(ts min to ts 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

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

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	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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