

3A NPN Epitaxial Planar Power Transistor

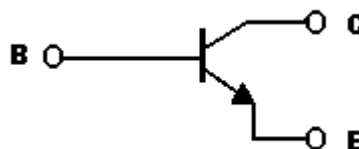
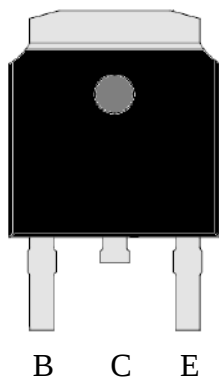
Description:

KJTIP31C is designed for use in general purpose amplifier and switching applications.

Features:

- Low collector-emitter saturation voltage, $V_{CE(sat)} = 0.5V(max) @ I_C = 3A$
- High collector-emitter sustaining voltage, $BV_{CEO(SUS)} = 100V(min)$
- High current gain-bandwidth product, $f_T = 3MHz(min) @ I_C = 500mA$
- Pb-free lead plating and halogen-free package

TO-252(DPAK)



B : Base
C : Collector
E : Emitter

Ordering Information

Device	Package	Shipping
KJTIP31C	TO-252 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	200	V
Collector-Emitter Voltage	V _{CEO}	100	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current (DC)	I _C	3	A
Collector Current (Pulse)	I _{CP}	5 (Note 1)	
Base Current	I _B	1	A
Power Dissipation @ Ta=25°C	P _D	1.56	W
Power Dissipation @ Tc=25°C	P _D	15	
Thermal Resistance, Junction to Ambient	R _{θJA}	80	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	8.3	°C/W
Operating Junction and Storage Temperature Range	T _j ; T _{stg}	-65~+150	°C

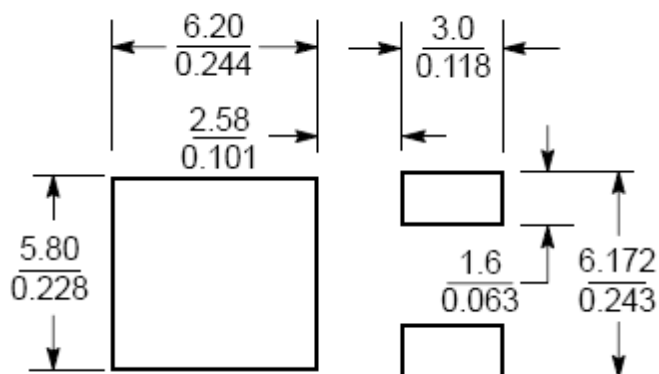
Note : 1. Single Pulse , P_w ≤ 300μs, Duty ≤ 2%.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
*BV _{CEO(SUS)}	100	-	-	V	I _C =30mA, I _B =0
I _{CBO}	-	-	100	nA	V _{CB} =200V, I _C =0
I _{CEO}	-	-	1	μA	V _{CE} =100V, I _B =0
I _{CES}	-	-	1	μA	V _{CE} =100V, V _{BE} =0
I _{EBO}	-	-	100	nA	V _{EB} =5V, I _C =0
*V _{CE(sat)}	-	-	0.5	V	I _C =3A, I _B =375mA
*V _{BE(on)}	-	-	1.2	V	V _{CE} =4V, I _C =3A
*h _{FE}	25	-	-	-	V _{CE} =4V, I _C =1A
*h _{FE}	10	-	50	-	V _{CE} =4V, I _C =3A
f _T	3	-	-	MHz	V _{CE} =10V, I _C =500mA, f=1MHz

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

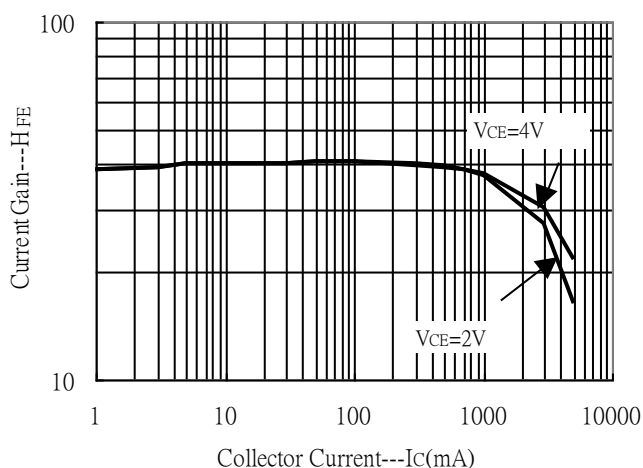
Recommended soldering footprint



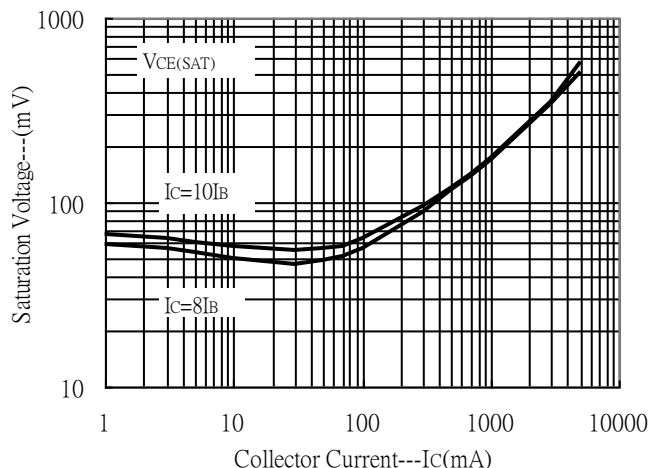
Unit ($\frac{\text{mm}}{\text{inch}}$)

Typical Characteristics

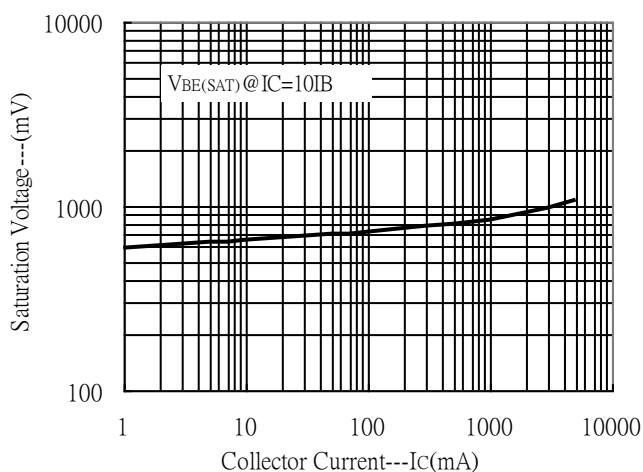
Current Gain vs Collector Current



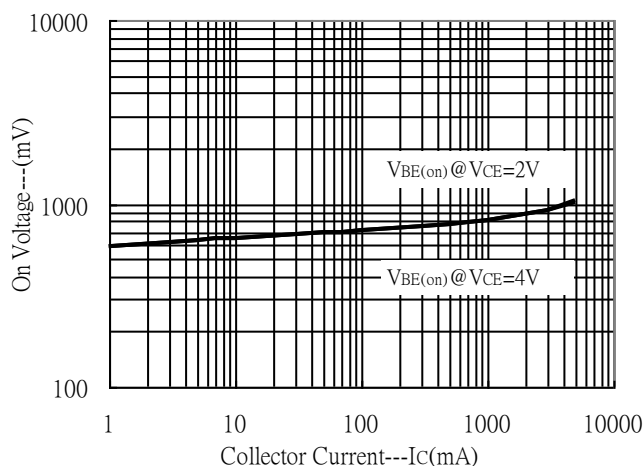
Saturation Voltage vs Collector Current



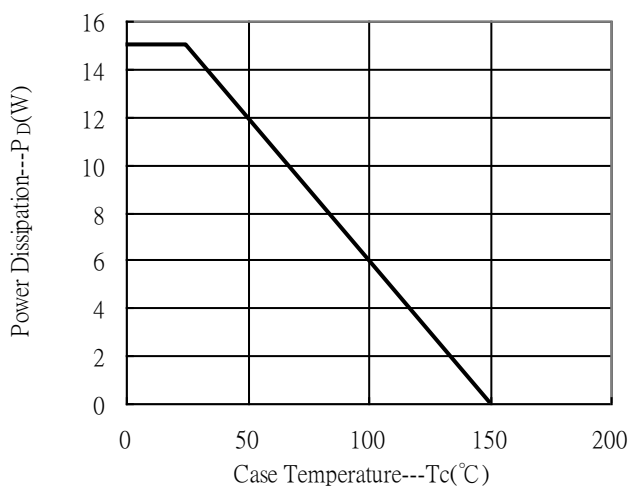
Saturation Voltage vs Collector Current



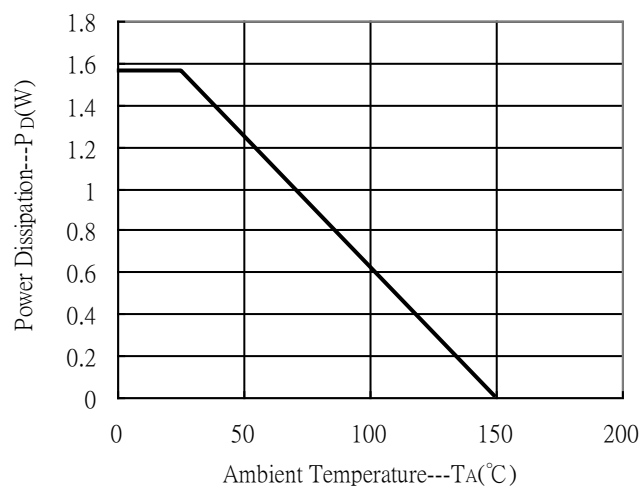
On Voltage vs Collector Current



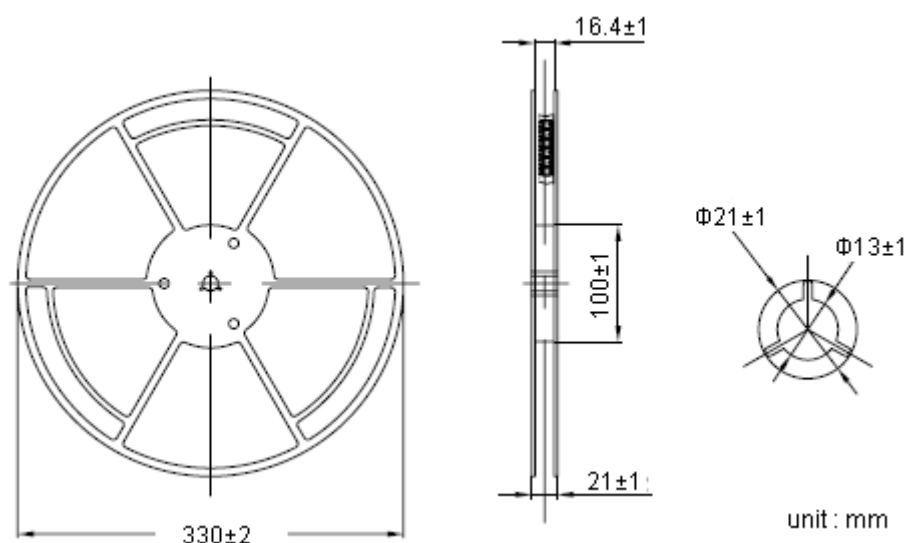
Power Derating Curve



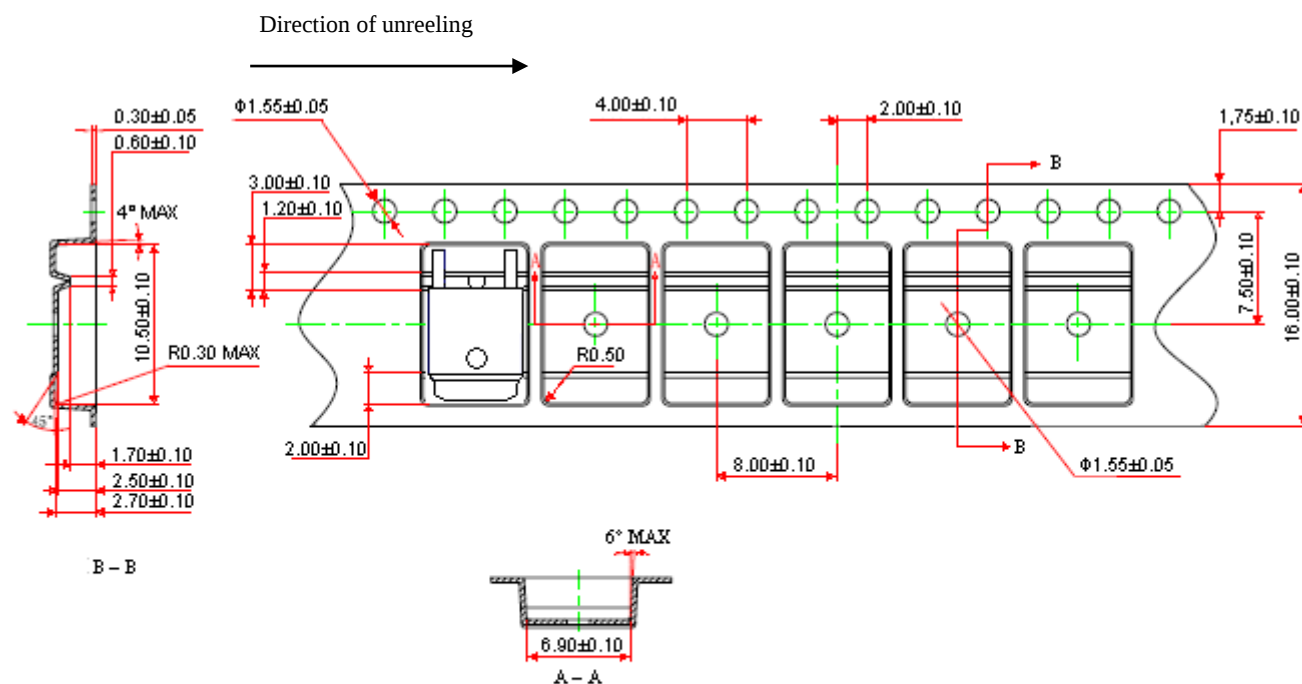
Power Derating Curve



Reel Dimension



Carrier Tape Dimension

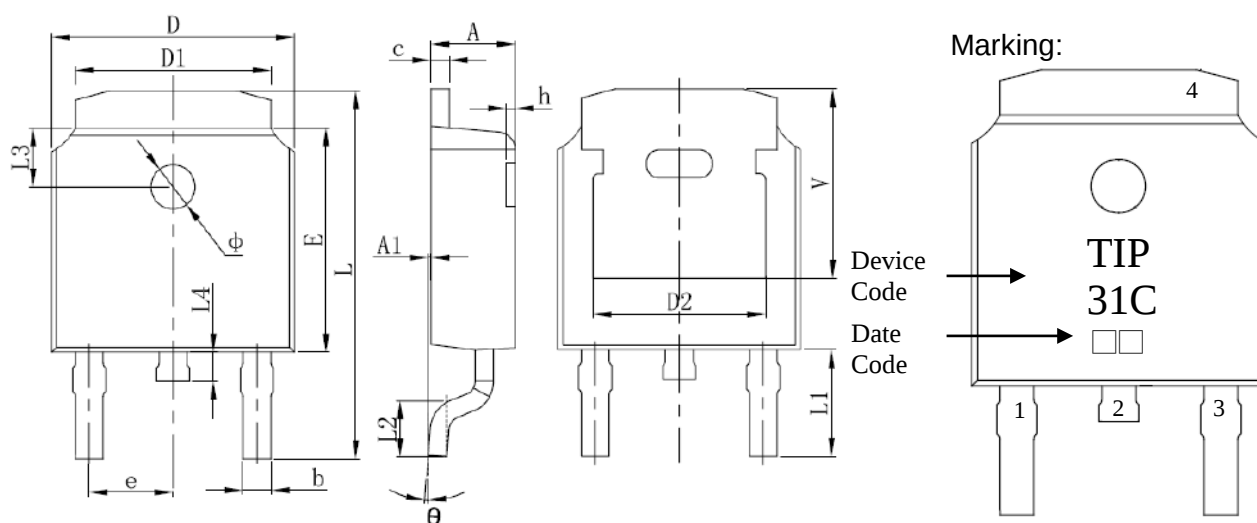


Notes:

1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: conductive black polystyrene, antistatic coated : $10^5 \Omega/\square \sim 10^{11} \Omega/\square$

unit : mm

TO-252 Dimension



3-Lead TO-252 Plastic Surface Mount Package

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