ELM2SC4081BA General purpose NPN epitaxial planar transistor

■General description

ELM2SC4081BA is designed for using in driver stage of AF amplifier and general purpose switching application.

■Features

- Low Cob : Typ.2.0pF
- Package : SOT-23
- AEC-Q101 qualified.

■Maximum absolute ratings

Parameter	Symbol	Limit	Unit
Collector-base voltage	Vcbo	60	V
Collector-emitter voltage	Vceo	50	V
Emitter-base voltage	Vebo	7	V
Collector current	Ic	200	mA
Power dissipation	Pd	225	mW
Thermal resistance, Junction to ambient	Rθja	556	°C/W
Operating junction temperature range	Tj	-55 to +150	°C
Storage temperature range	Tstg	-55 to +150	°C

■Classification of Hfe

Rank	RA
Range	180~390

■Selection guide

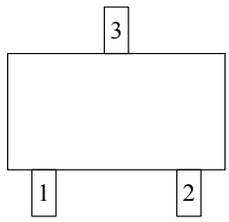
ELM2SC4081BA-S

Symbol		
a	Product name	ELM2SC4081
b	Package	B : SOT-23
c	Product version	A
d	Taping direction	S: Please refer to page 7

ELM2SC4081 B A - S
↑ ↑ ↑ ↑
a b c d

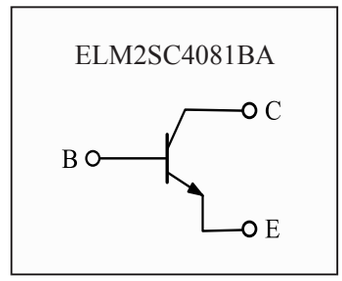
■Pin configuration

SOT-23(TOP VIEW)



Pin No.	Pin name	Pin description
1	B	Base
2	E	Emitter
3	C	Collector

■Standard circuit



■Electrical characteristics

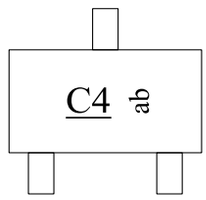
Top=25°C

Symbol	Condition	Min.	Typ.	Max.	Unit
BVcbo	Ic=100μA	60	-	-	V
BVceo	Ic=1mA	50	-	-	V
BVebo	Ie=50μA	7	-	-	V
Icbo	Vcb=60V	-	-	100	nA
Iebo	Veb=7V	-	-	100	nA
*Vce(sat)	Ic=50mA, Ib=5mA	-	0.1	0.3	V
*Vce(sat)	Ic=100mA, Ib=10mA	-	0.2	0.4	V
*Vbe(sat)	Ic=100mA, Ib=10mA	-	0.9	1.2	V
*Vbe(on)	Vce=6V, Ic=1mA	0.50	0.64	0.70	V
*Hfe	Vce=6V, Ic=1mA	180	-	390	
ft	Vce=12V, Ic=2mA, f=100MHz	80	180	-	MHz
Cob	Vcb=12V, f=1MHz	-	2.0	3.5	pF

* Pulse test: Pulse width ≤ 380μs, duty cycle ≤ 2%.

■Marking

SOT-23

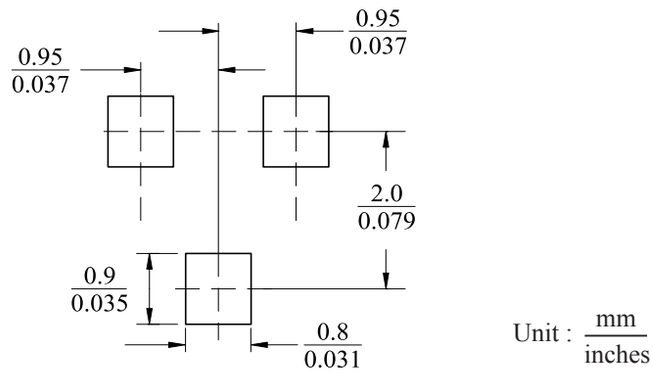


Mark	Content
C4	Product code
a b	Date code

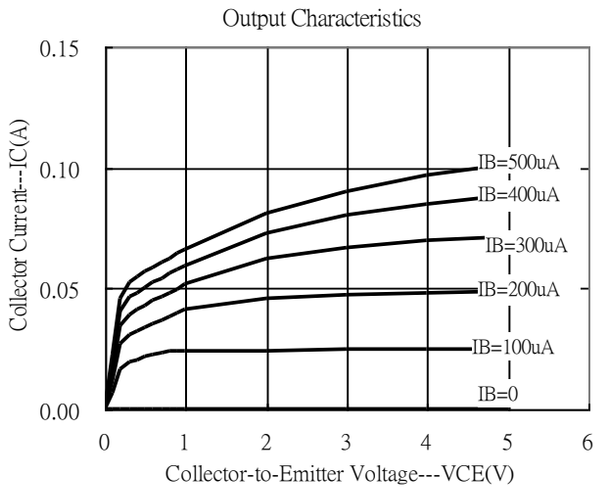
■Shipping

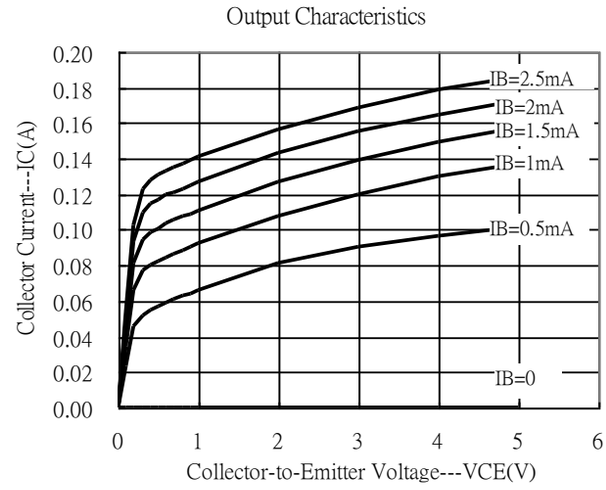
• 3000 pcs / Tape & Reel

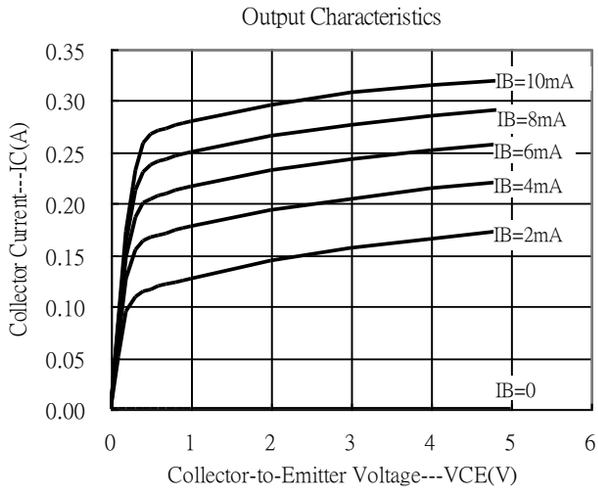
■Recommended soldering footprint

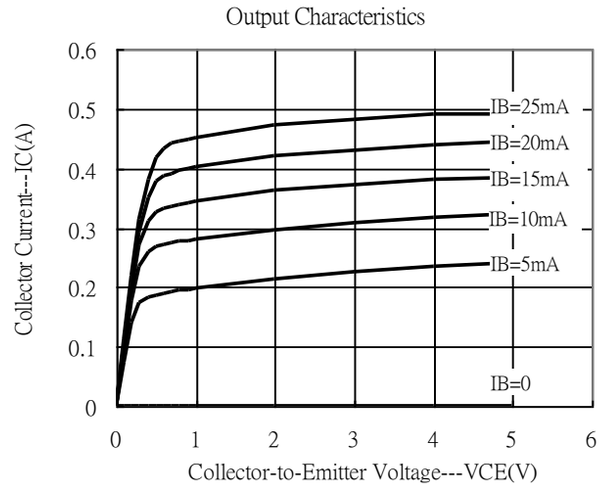


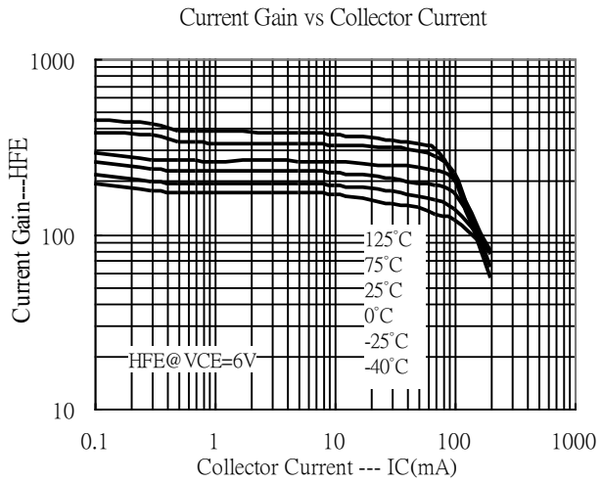
■Typical characteristics

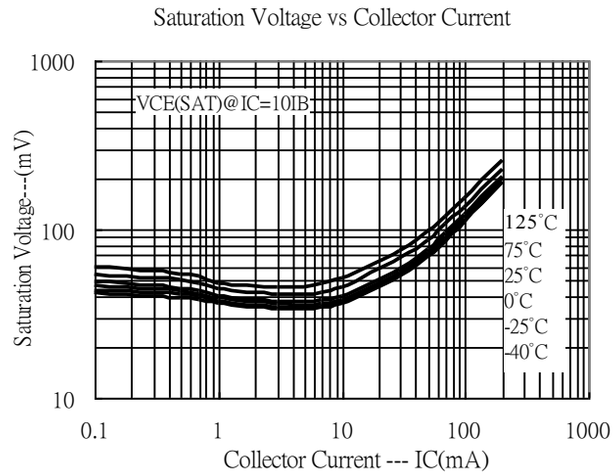




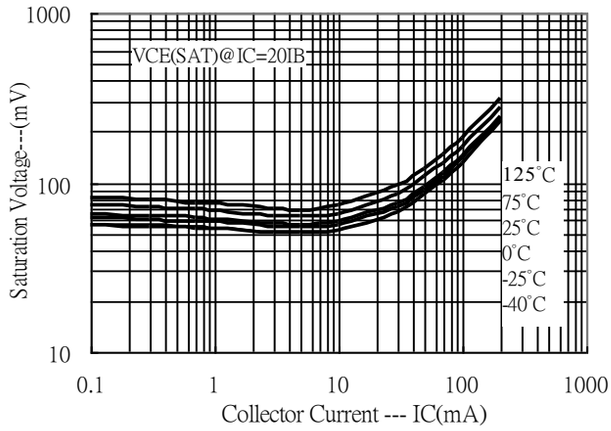




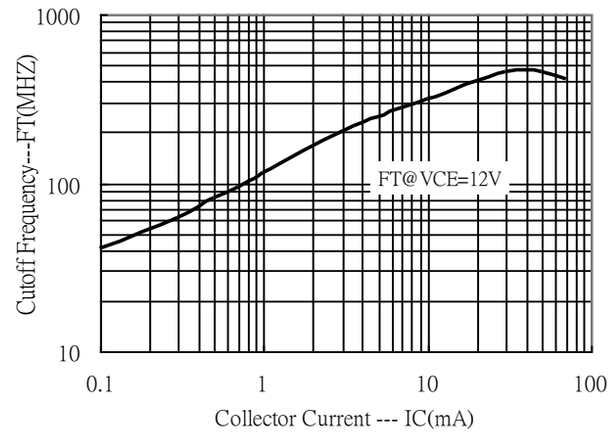




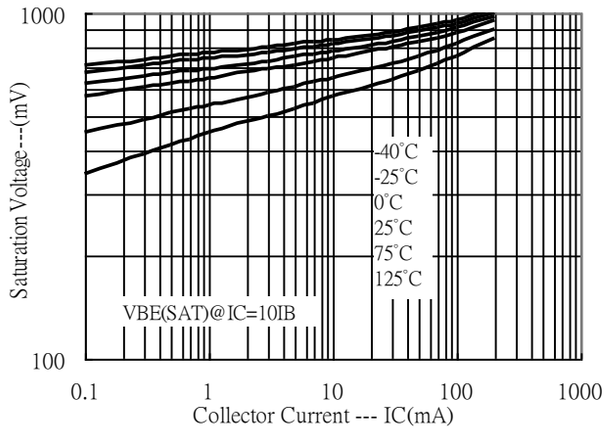
Saturation Voltage vs Collector Current



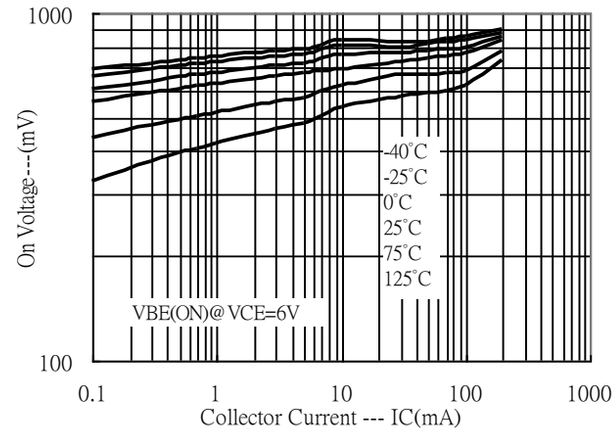
Cutoff Frequency vs Collector Current



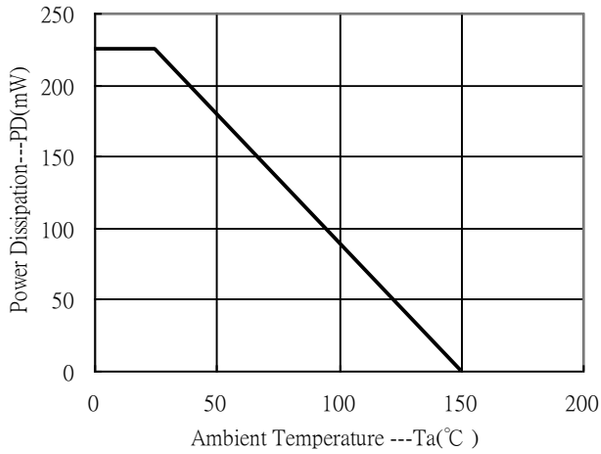
Saturation Voltage vs Collector Current



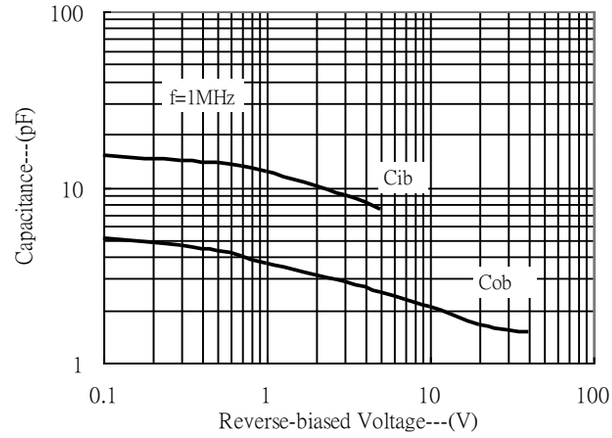
On Voltage vs Collector Current

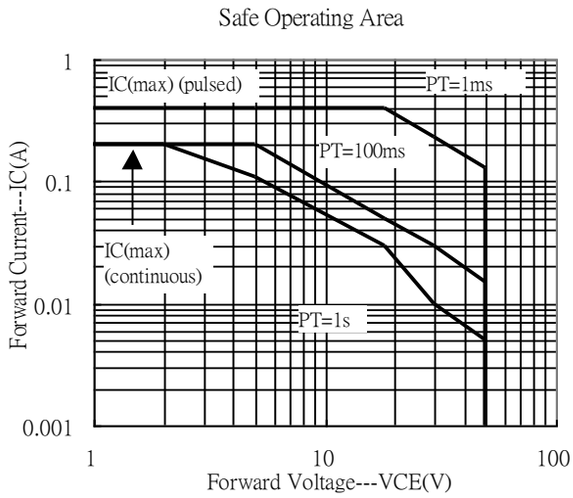


Power Derating Curve

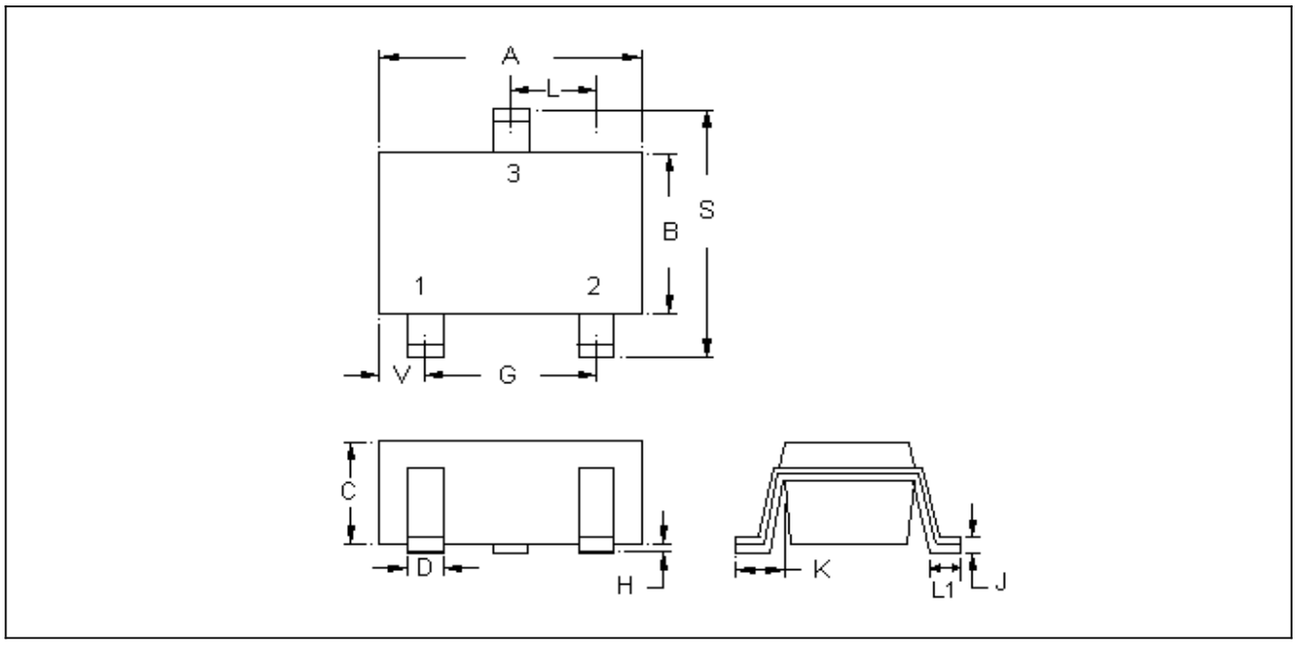


Capacitance Characteristics




Safe Operating Area
IC(max) (pulsed)
PT=1ms
PT=100ms
IC(max)
(continuous)
PT=1s
1
0.1
0.01
0.001
1
10
100
Forward Current---IC(A)
Forward Voltage---VCE(V)

■SOT-23 dimension



*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0032	0.0079	0.08	0.20
B	0.0472	0.0669	1.20	1.70	K	0.0118	0.0266	0.30	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1161	2.10	2.95
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0000	0.0040	0.00	0.10	L1	0.0118	0.0197	0.30	0.50

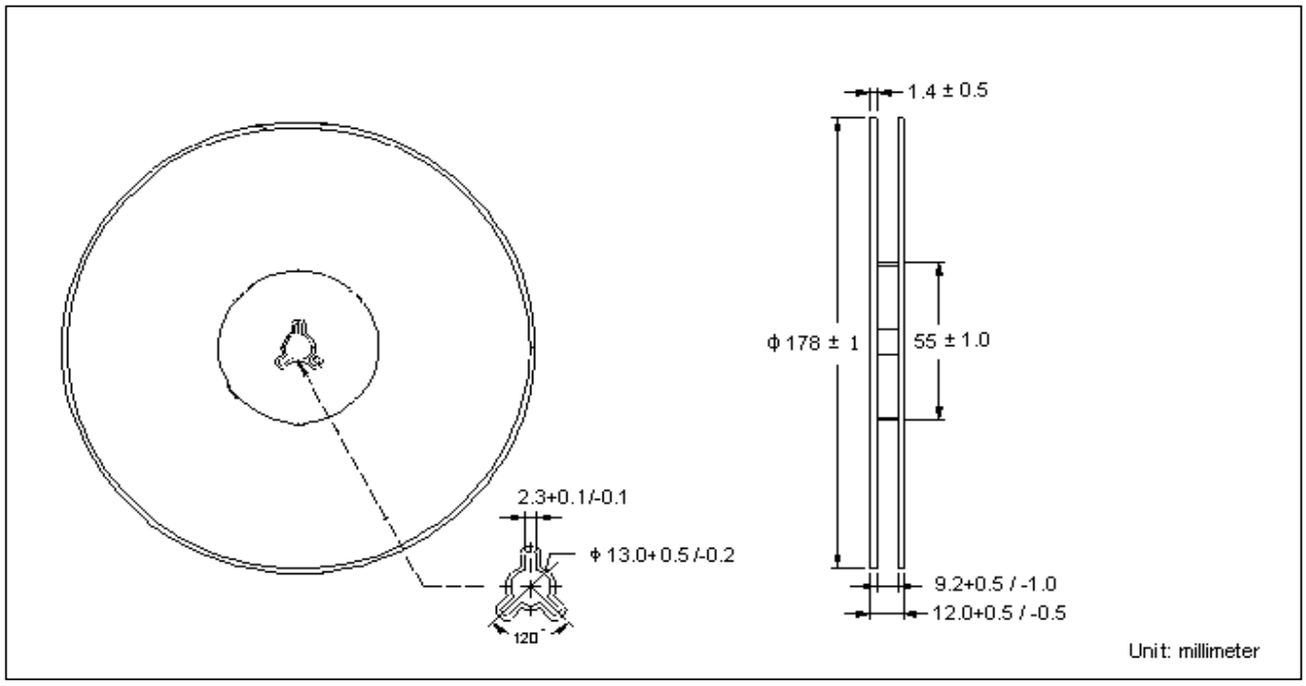
Notes : 1. Controlling dimension : millimeters.
2. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.

Material :

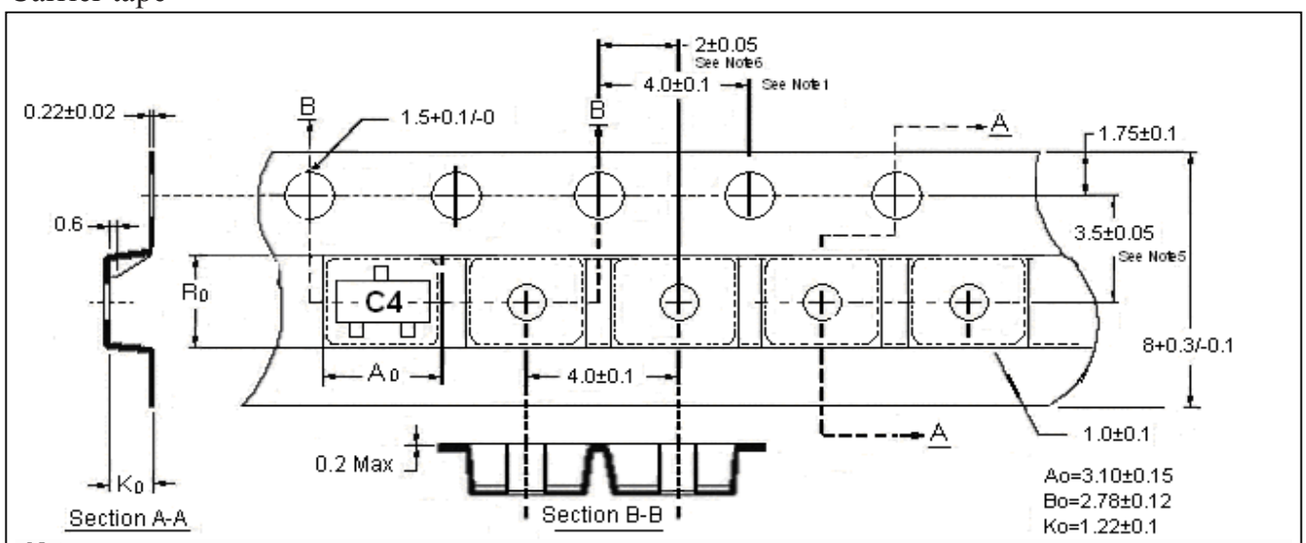
- Lead : Pure tin plated.
- Mold Compound : Epoxy resin family, flammability solid burning class : UL94V-0.

■Reel & carrier tape dimension

• Reel



• Carrier tape



Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter