

# ELM2SC3906xFA General purpose NPN epitaxial planar transistor

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## ■General description

ELM2SC3906xFA is designed for general purpose applications requiring high breakdown voltage.

## ■Features

- High collector-emitter breakdown voltage. ( $BV_{ceo}=160V @ I_c=1mA$ )
- Package : SC-70 (SOT-323)

## ■Maximum absolute ratings

$T_a=25^{\circ}C$

Parameter	Symbol	Limit	Unit
Collector-base voltage	$V_{cbo}$	180	V
Collector-emitter voltage	$V_{ceo}$	160	V
Emitter-base voltage	$V_{ebo}$	6	V
Collector current	$I_c$	600	mA
Power dissipation	$P_d$	200	mW
Thermal resistance, junction to ambient	$R_{\theta ja}$	625	$^{\circ}C/W$
Operating junction temperature range	$T_j$	-55 to +150	$^{\circ}C$
Storage temperature range	$T_{stg}$	-55 to +150	$^{\circ}C$

## ■Classification of Hfe4

Rank	Q	R
Range	120~270	180~390

## ■Selection guide

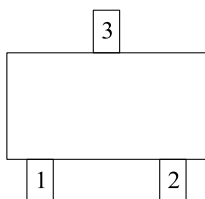
ELM2SC3906xFA-S

Symbol		
a	Product name	ELM2SC3906
b	Product rank	Q : 120~270 R : 180~390
c	Package	F : SC-70(SOT-323)
d	Product version	A
e	Taping direction	S: Please refer to page 7

ELM2SC3906 x F A - S  
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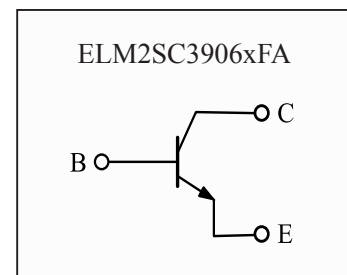
## ■Pin configuration

SC-70(TOP VIEW)



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

## ■Standard circuit



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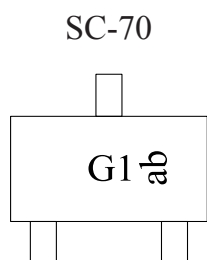
## ■Electrical characteristics

Top=25°C

Symbol	Condition	Min.	Typ.	Max.	Unit
BVcbo	Ic=100μA	180	-	-	V
BVceo	Ic=1mA	160	-	-	V
BVebo	Ie=10μA	6	-	-	V
Icbo	Vcb=120V	-	-	50	nA
Iebo	Veb=4V	-	-	50	nA
*Vce(sat)1	Ic=10mA, Ib=1mA	-	0.10	0.15	V
*Vce(sat)2	Ic=50mA, Ib=5mA	-	-	0.2	V
*Vbe(sat)1	Ic=10mA, Ib=1mA	-	-	1	V
*Vbe(sat)2	Ic=50mA, Ib=5mA	-	-	1	V
*Hfe1	Vce=5V, Ic=1mA	100	-	-	-
*Hfe2	Vce=5V, Ic=10mA	100	-	-	-
*Hfe3	Vce=5V, Ic=50mA	50	-	-	-
*Hfe4	Vce=6V, Ic=2mA	120	-	390	-
fr	Vce=20V, Ic=10mA, f=100MHz	100	-	-	MHz
Cob	Vcb=20V, Ie=0A, f=1MHz	-	-	6	pF

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

## ■Marking



Mark	Content
G1	Product code
a, b	Assembly lot number

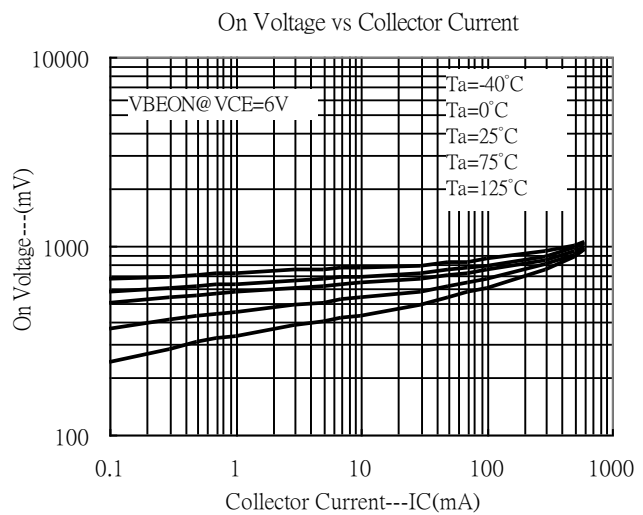
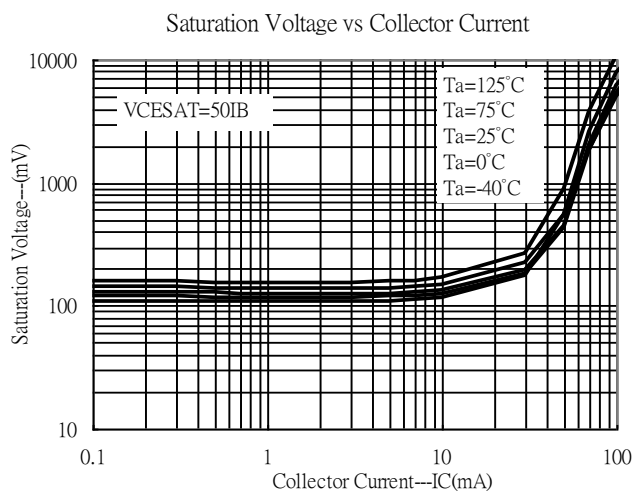
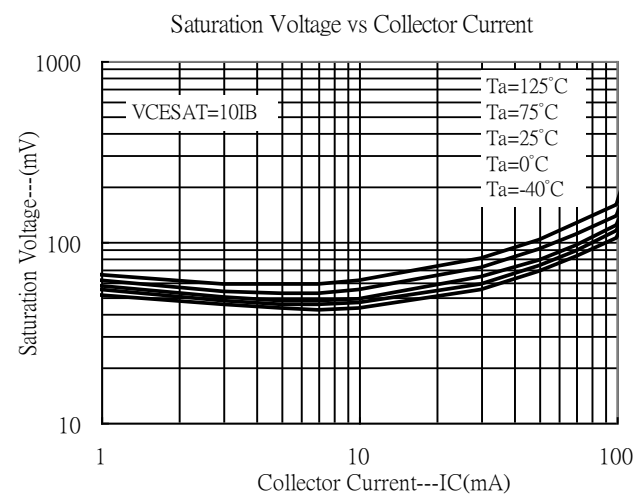
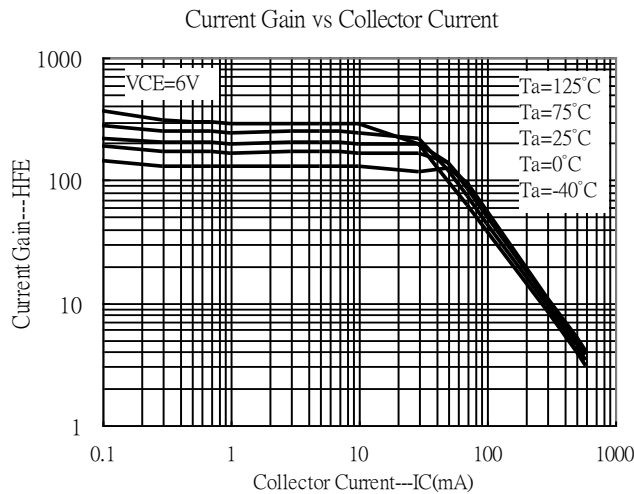
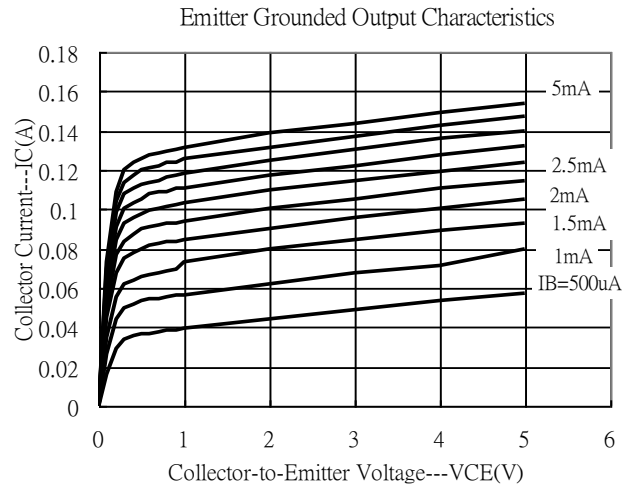
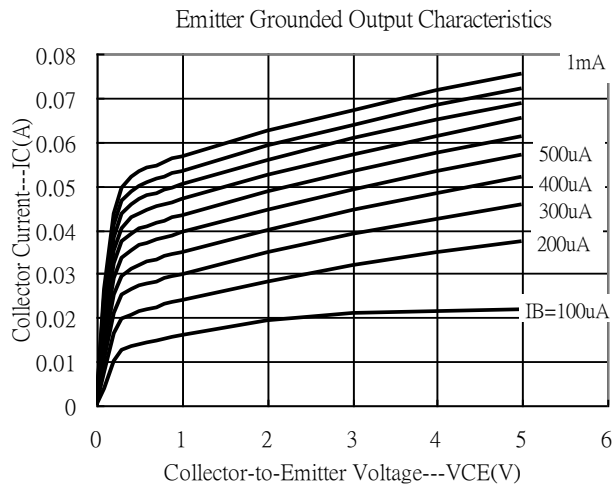
## ■Shipping

- 3000 pcs / Tape & Reel

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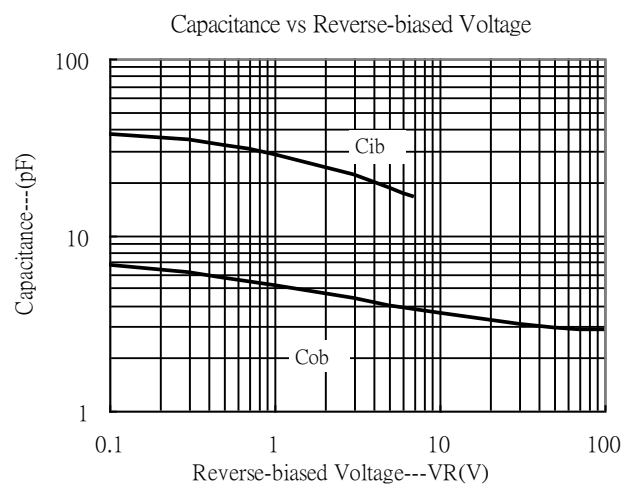
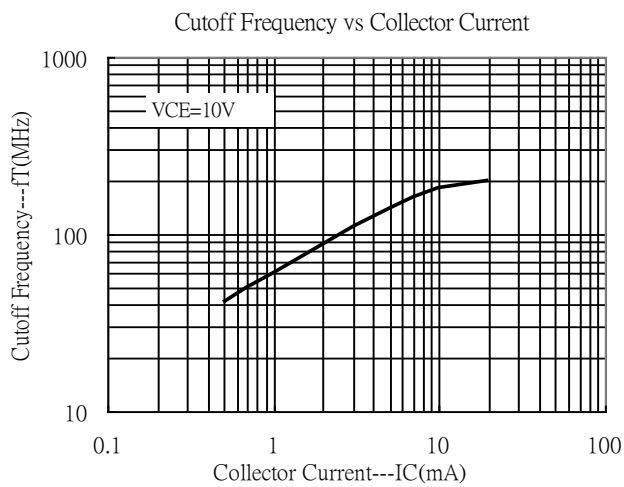
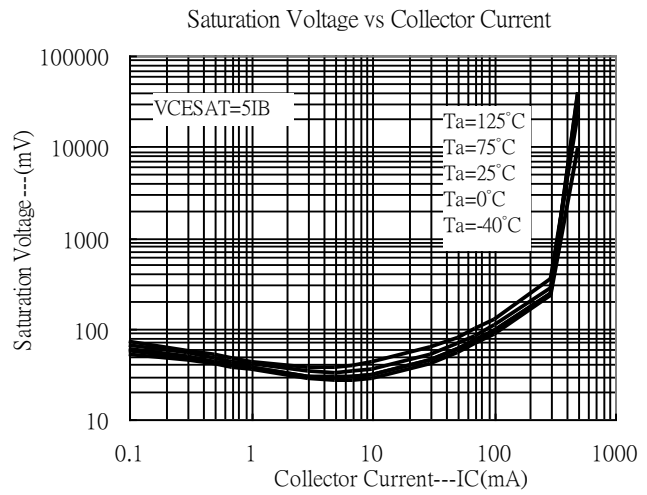
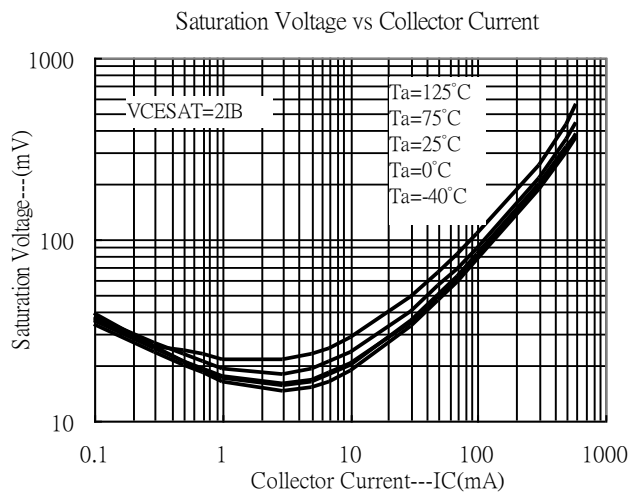
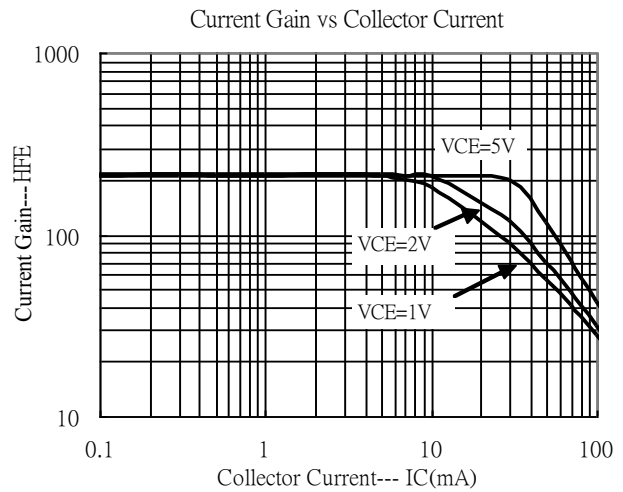
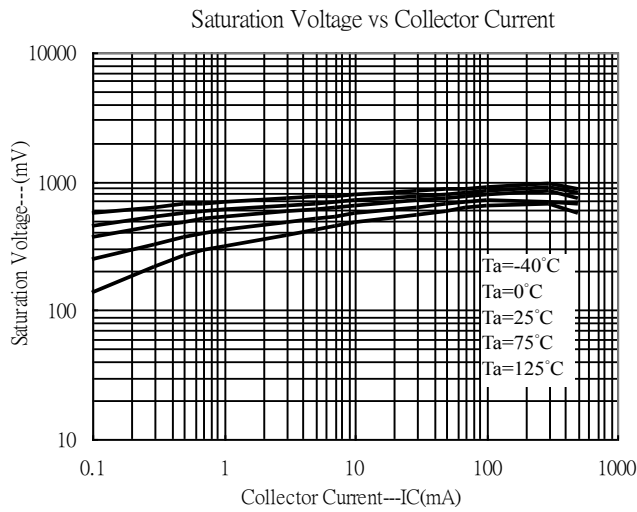
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## Typical characteristics



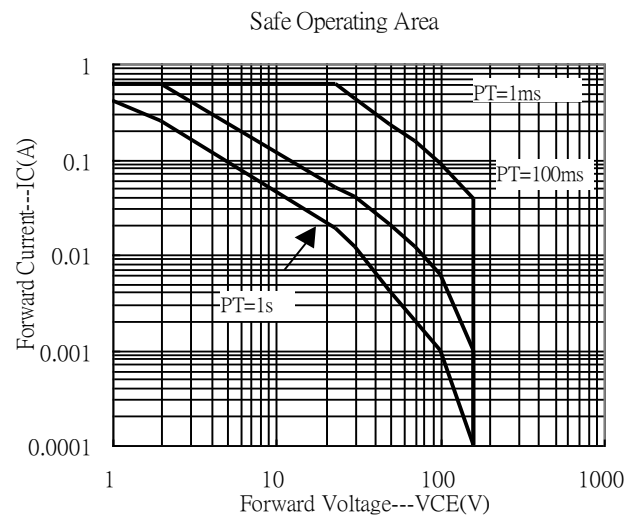
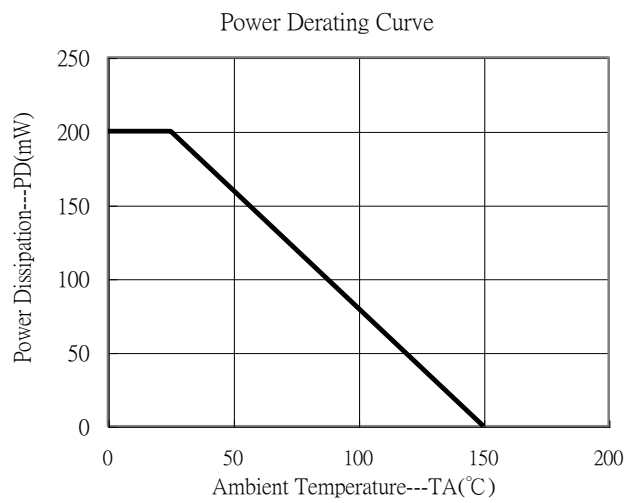
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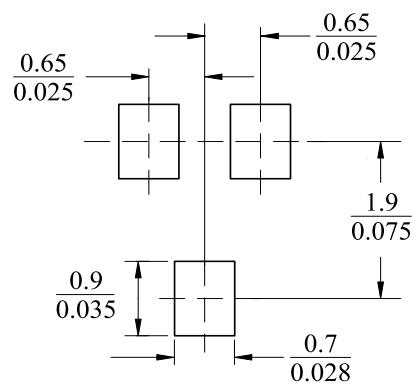


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## ■ Recommended soldering footprint

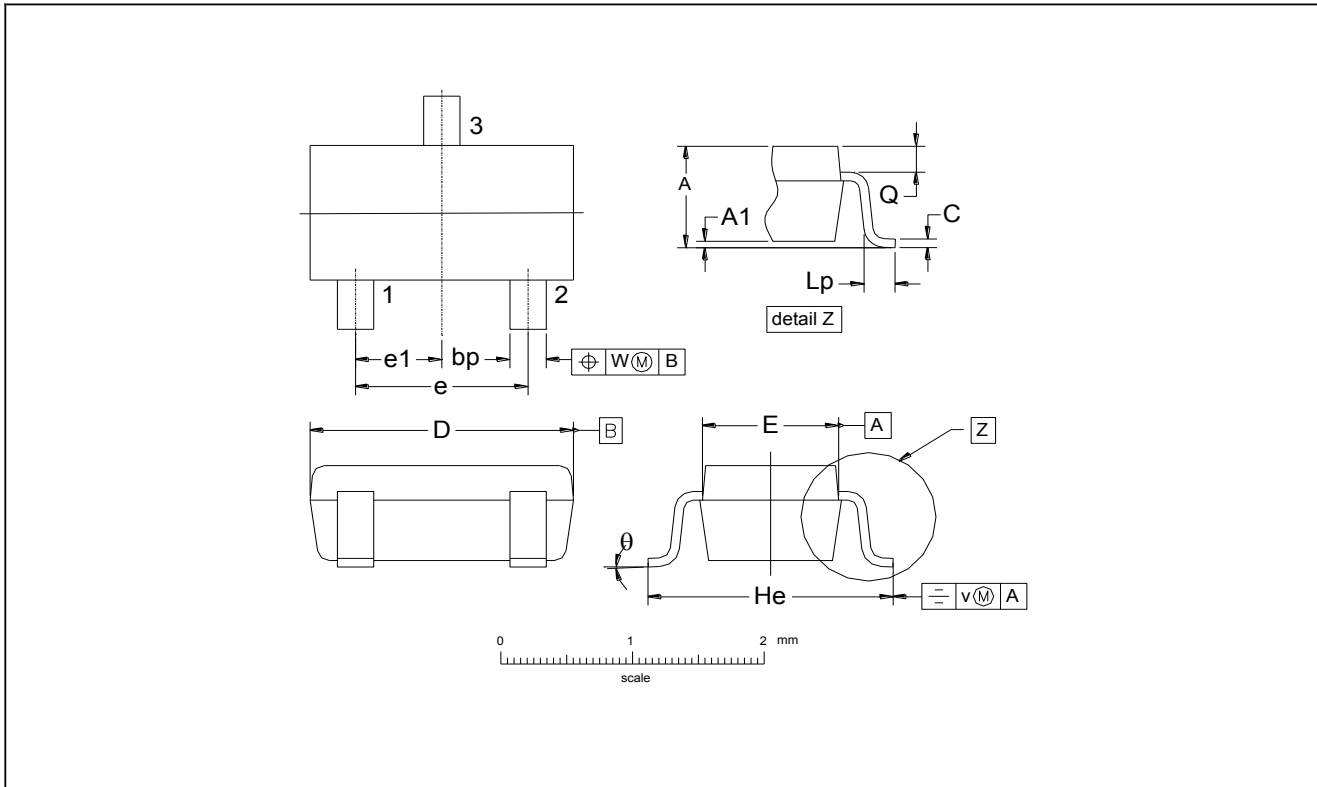


Unit :  $\frac{\text{mm}}{\text{inches}}$

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## ■SC-70 dimension



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0315	0.0433	0.80	1.10	e1	0.0256*		0.65*	
A1	0.0000	0.0039	0.00	0.10	He	0.0846	0.0965	2.15	2.45
bp	0.0078	0.0157	0.20	0.40	Lp	0.0105	0.0181	0.26	0.46
C	0.0031	0.0059	0.08	0.15	Q	0.0051	0.0091	0.13	0.23
D	0.0709	0.0866	1.80	2.20	v	0.0079	-	0.2	-
E	0.0453	0.0531	1.15	1.35	w	0.0079	-	0.2	-
e	0.0472	0.0551	1.20	1.40	theta	0°	8°	0°	8°

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:

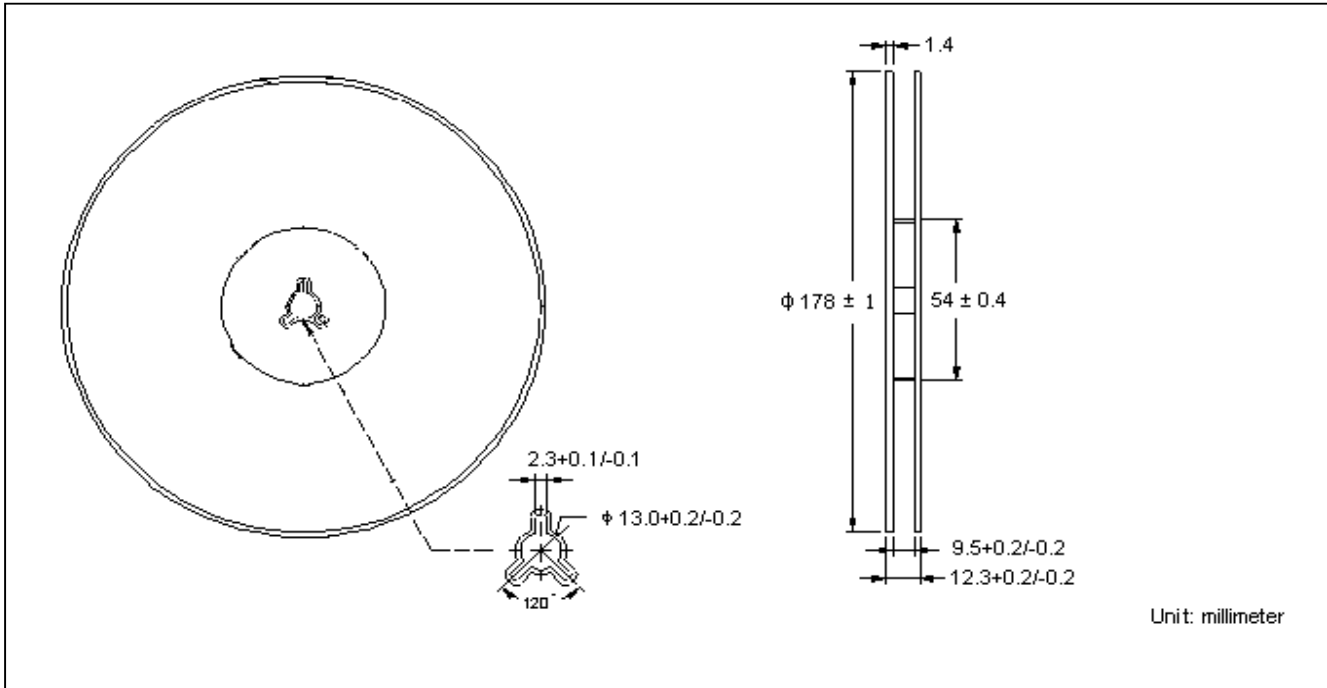
- Lead: Pure tin plated
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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## ■ Reel & carrier tape dimension

### • Reel



### • Carrier tape

