

# ELM2SC3734BA General purpose NPN epitaxial planar transistor

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## ■General description

ELM2SC3734BA is designed for use in general purpose amplification and switching applications.

## ■Features

- ESD JEDEC rated HBM class : 3B(>8KV).
- Package : SOT-23

## ■Maximum absolute ratings (Ta=25°C)

| Parameter                               | Symbol | Limit       | Unit |
|-----------------------------------------|--------|-------------|------|
| Collector-base voltage                  | Vcbo   | 60          | V    |
| Collector-emitter voltage               | Vceo   | 40          | V    |
| Emitter-base voltage                    | Vebo   | 6           | V    |
| Collector current                       | Ic     | 200         | mA   |
| Power dissipation                       | Pd     | 225 (Note)  | mW   |
| Power dissipation (Tc=25°C)             | Pd     | 560         | mW   |
| Thermal resistance, junction to ambient | Rθja   | 556 (Note)  | °C/W |
| Thermal resistance, junction to case    | Rθjc   | 223         | °C/W |
| Operating junction temperature          | Tj     | 150         | °C   |
| Storage temperature range               | Tstg   | -55 to +150 | °C   |

Note : Free air conditioner.

## ■Selection guide

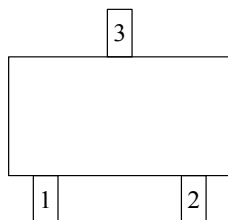
ELM2SC3734BA-S

| Symbol |                  |                           |
|--------|------------------|---------------------------|
| a      | Product name     | ELM2SC3734                |
| b      | Package          | B : SOT-23                |
| c      | Product version  | A                         |
| d      | Taping direction | S: Please refer to page 5 |

ELM2SC3734 B A - S  
↑ ↑ ↑ ↑  
a b c d

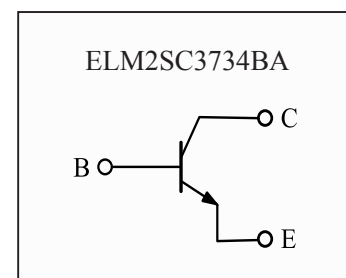
## ■Pin configuration

SOT-23(TOP VIEW)



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

## ■Standard circuit



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## ■Electrical characteristics

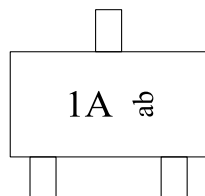
Ta=25°C

| Symbol     | Condition                  | Min. | Typ. | Max. | Unit |
|------------|----------------------------|------|------|------|------|
| BVcbo      | Ic=10μA                    | 60   | -    | -    | V    |
| BVceo      | Ic=1mA                     | 40   | -    | -    | V    |
| BVebo      | Ie=10μA                    | 6    | -    | -    | V    |
| Icex       | Vce=30V, Vbe=-3V           | -    | -    | 50   | nA   |
| *Vce(sat)1 | Ic=10mA, Ib=1mA            | -    | 0.10 | 0.20 | V    |
| *Vce(sat)2 | Ic=50mA, Ib=5mA            | -    | 0.15 | 0.30 | V    |
| *Vbe(sat)1 | Ic=10mA, Ib=1mA            | 0.65 | 0.75 | 0.85 | V    |
| *Vbe(sat)2 | Ic=50mA, Ib=5mA            | -    | 0.85 | 0.95 | V    |
| *Hfe1      | Vce=1V, Ic=100μA           | 40   | -    | -    |      |
| *Hfe2      | Vce=1V, Ic=1mA             | 70   | -    | -    |      |
| *Hfe3      | Vce=1V, Ic=10mA            | 100  | -    | 300  |      |
| *Hfe4      | Vce=1V, Ic=50mA            | 60   | -    | -    |      |
| *Hfe5      | Vce=1V, Ic=100mA           | 30   | -    | -    |      |
| ft         | Vce=20V, Ic=10mA, f=100MHz | 300  | -    | -    | MHz  |
| Cob        | Vcb=5V, Ie=0A, f=1MHz      | -    | -    | 4    | pF   |

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

## ■Marking

SOT-23

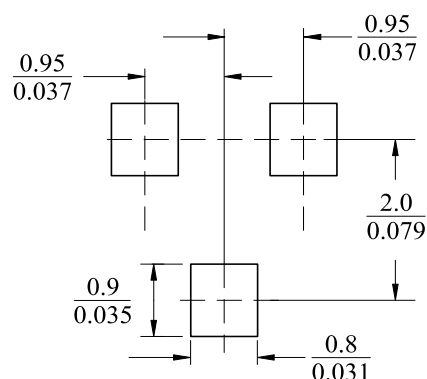


| Mark | Content      |
|------|--------------|
| 1A   | Product code |
| a b  | Date code    |

## ■Shipping

- 3000 pcs / Tape & Reel

## ■Recommended soldering footprint



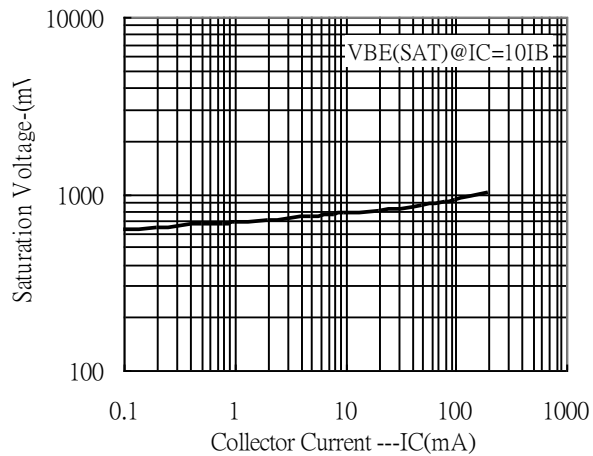
Unit :  $\frac{\text{mm}}{\text{inches}}$

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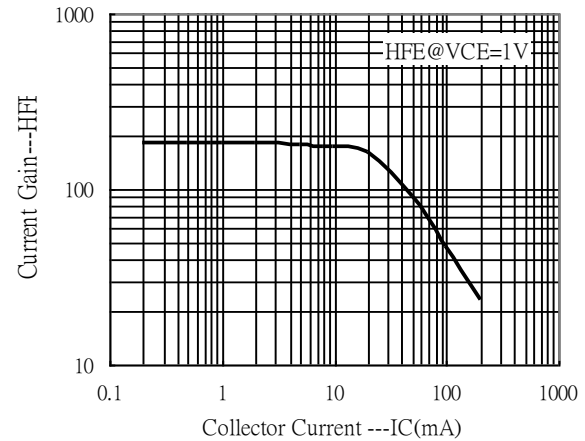
<https://www.elm-tech.com>

## ■ Typical characteristics

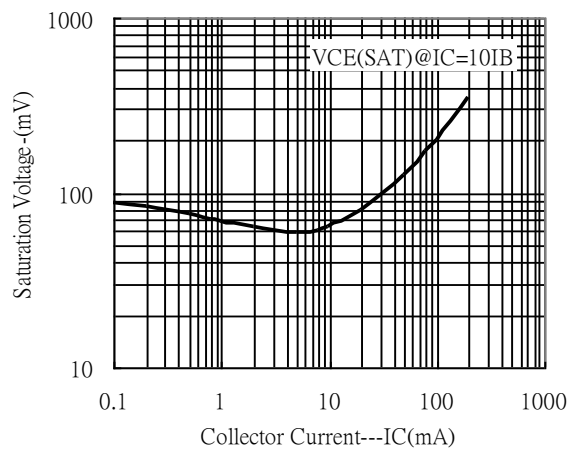
Saturation Voltage vs Collector Current



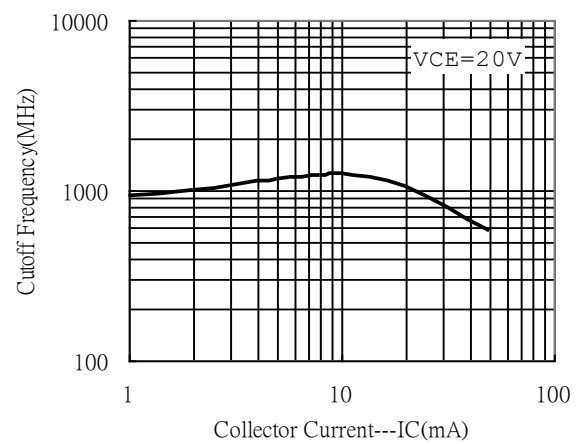
Current Gain vs Collector Current



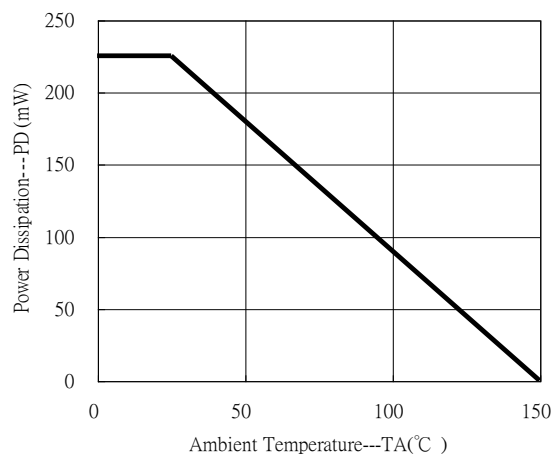
Saturation Voltage vs Collector Current



Cutoff Frequency vs Collector Current



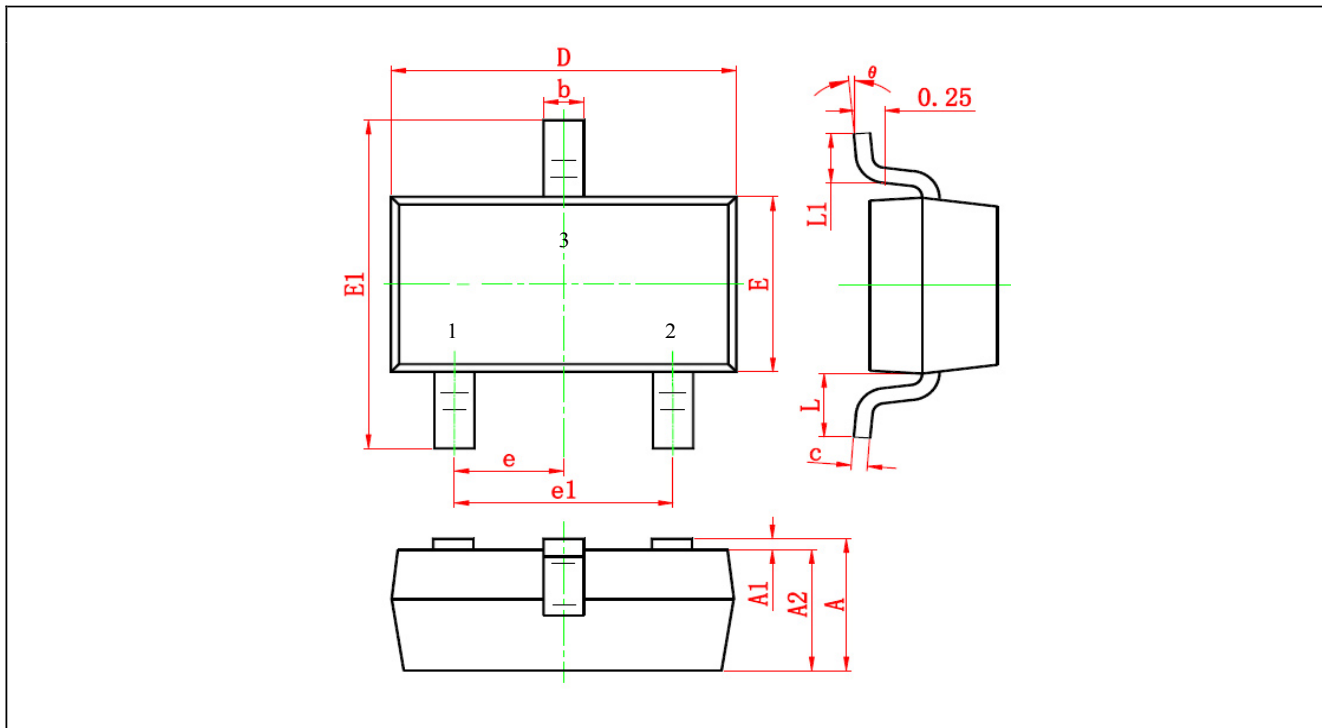
Power Derating Curve



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## ■SOT-23 dimension



| DIM | Millimeters |       | Inches |       | DIM | Millimeters |       | Inches    |       |
|-----|-------------|-------|--------|-------|-----|-------------|-------|-----------|-------|
|     | Min.        | Max.  | Min.   | Max.  |     | Min.        | Max.  | Min.      | Max.  |
| A   | 0.900       | 1.150 | 0.035  | 0.045 | E1  | 2.250       | 2.550 | 0.089     | 0.100 |
| A1  | 0.000       | 0.100 | 0.000  | 0.004 | e   | 0.950 TYP   |       | 0.037 TYP |       |
| A2  | 0.900       | 1.050 | 0.035  | 0.041 | e1  | 1.800       | 2.000 | 0.071     | 0.079 |
| b   | 0.300       | 0.500 | 0.012  | 0.020 | L   | 0.550 REF   |       | 0.022 REF |       |
| c   | 0.080       | 0.150 | 0.003  | 0.006 | L1  | 0.300       | 0.500 | 0.012     | 0.020 |
| D   | 2.800       | 3.000 | 0.110  | 0.118 | θ   | 0°          | 8°    | 0°        | 8°    |
| E   | 1.200       | 1.400 | 0.047  | 0.055 |     |             |       |           |       |

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 :

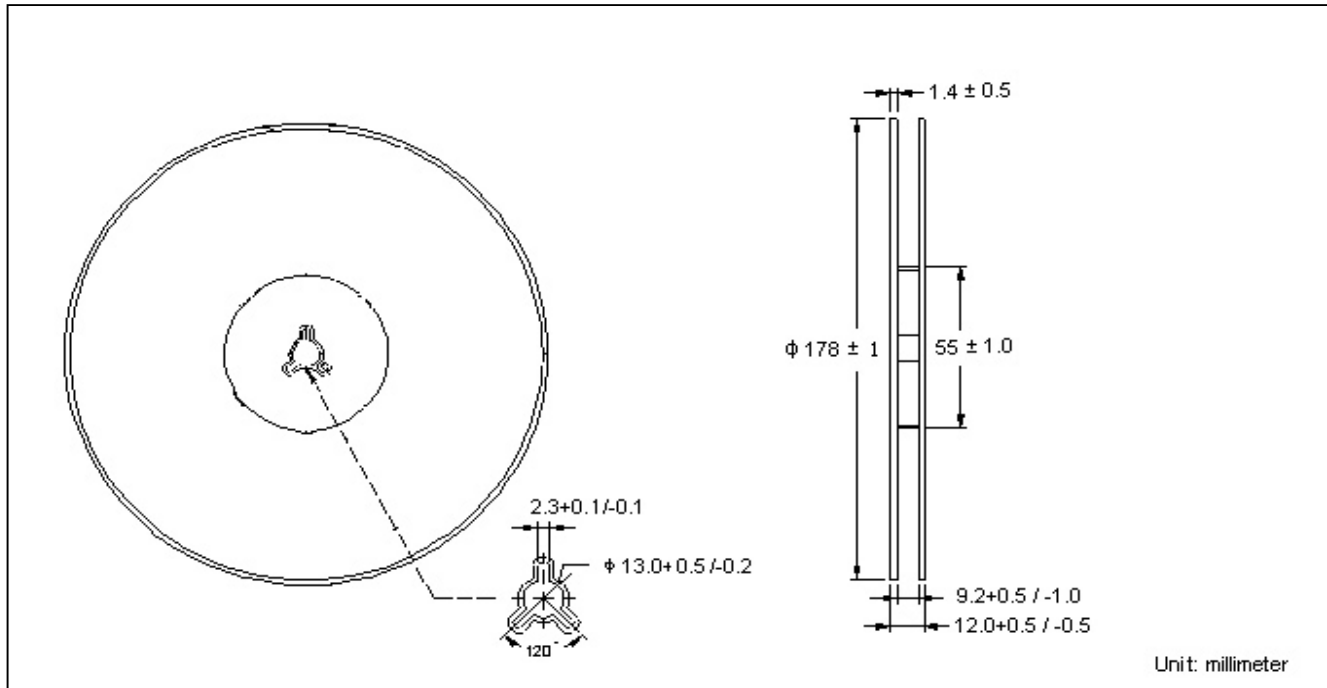
- Lead : Pure tin plated.
- Mold Compound : Epoxy resin family, flammability solid burning class : UL94V-0.

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## ■ Reel & carrier tape dimension

### • Reel



### • Carrier tape

