

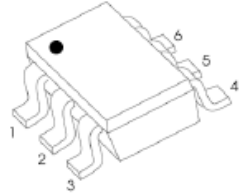
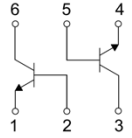


### BC847S DUAL TRANSISTOR (NPN+NPN)

#### APPLICATION

This device is designed for general purpose amplifier applications

Marking :1C



SOT-363

#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

| Symbol                            | Parameter                                        | Value    | Unit |
|-----------------------------------|--------------------------------------------------|----------|------|
| V <sub>CB0</sub>                  | Collector-Base Voltage                           | 50       | V    |
| V <sub>CE0</sub>                  | Collector-Emitter Voltage                        | 45       |      |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 6        |      |
| I <sub>C</sub>                    | Collector Current-Continuous                     | F00      | mA   |
| P <sub>D</sub>                    | Power Dissipation                                | 200      | mW   |
| R <sub>θJA</sub>                  | Thermal Resistance. Junction to Ambient          | 625      | °C/W |
| T <sub>J</sub> , T <sub>stg</sub> | Operation Junction and Storage Temperature Range | -55~+150 | °C   |

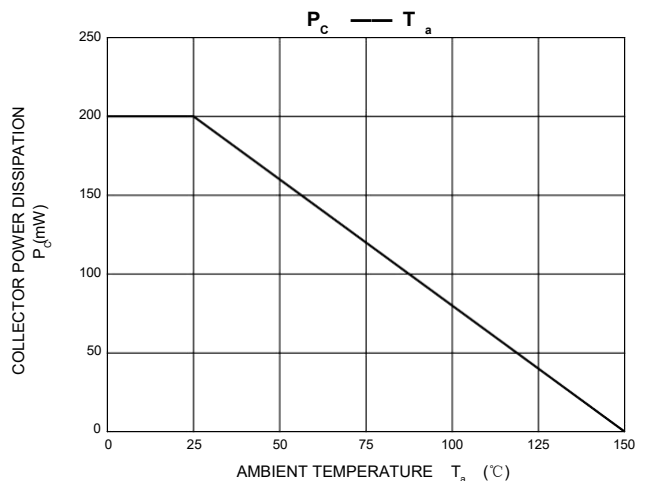
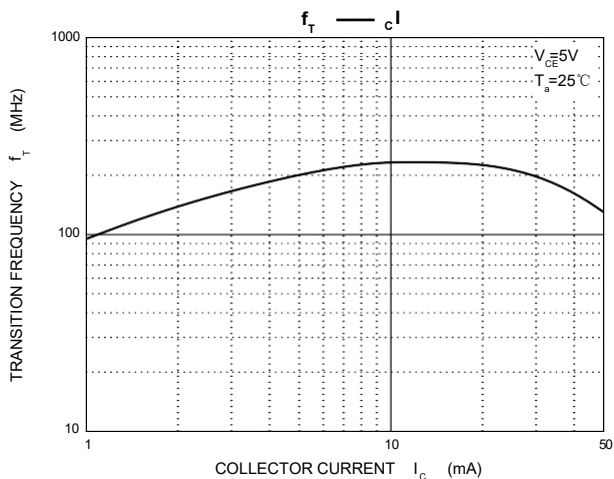
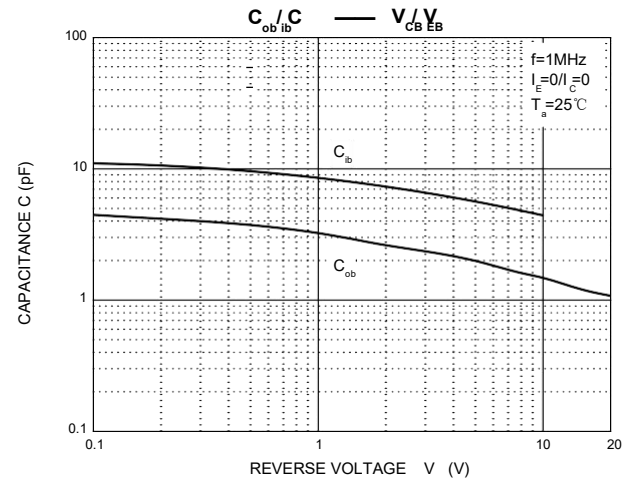
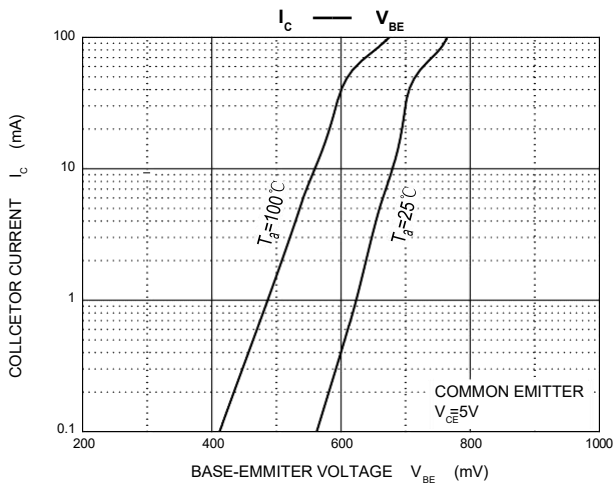
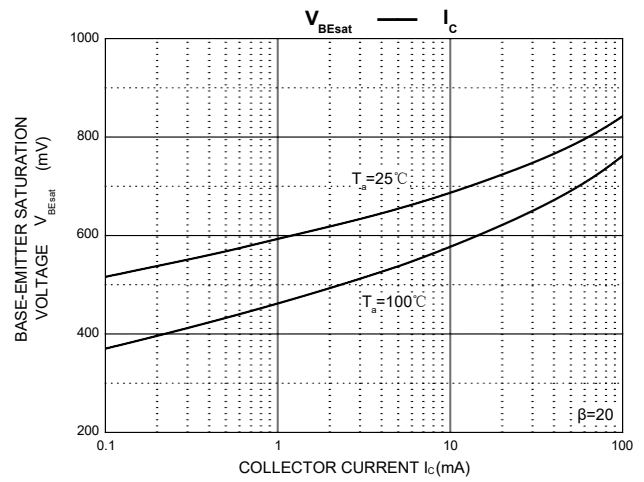
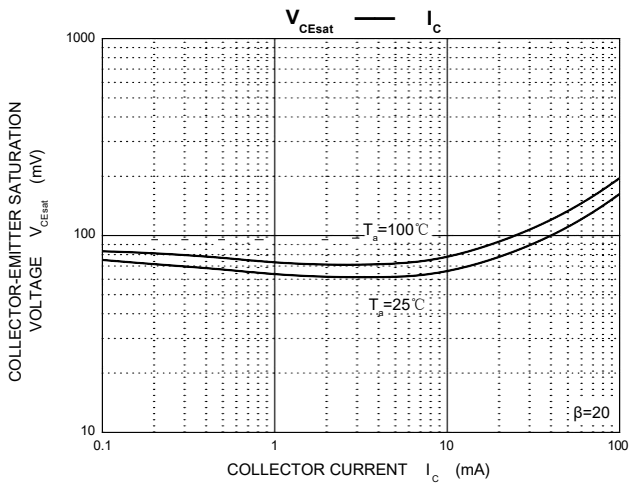
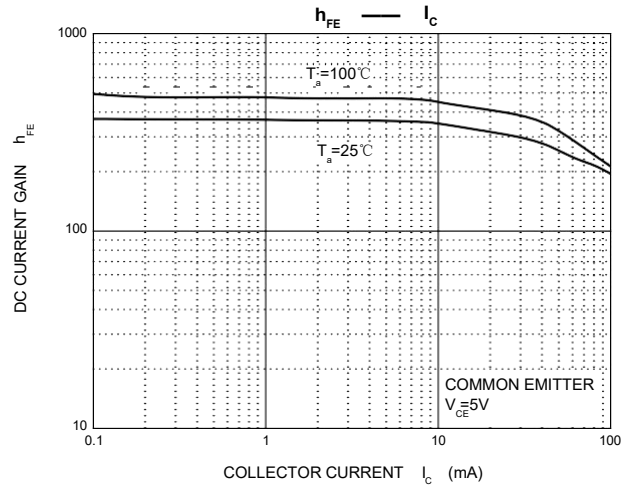
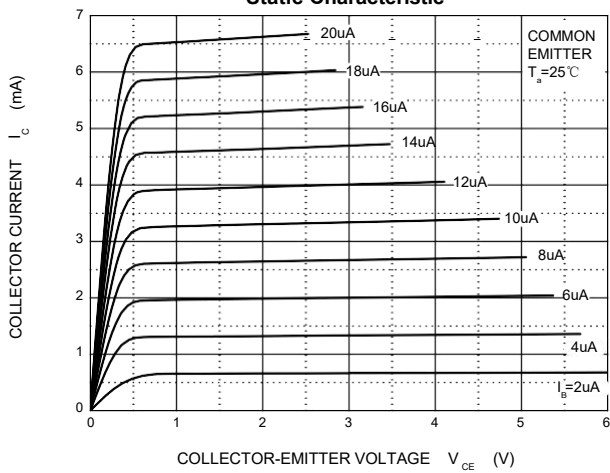
#### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

| Parameter                            | Symbol                  | Test conditions                                     | Min  | Typ | Max  | Unit |
|--------------------------------------|-------------------------|-----------------------------------------------------|------|-----|------|------|
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub>    | I <sub>C</sub> =10μA, I <sub>E</sub> =0             | 50   |     |      | V    |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub>    | I <sub>C</sub> =1mA, I <sub>B</sub> =0              | 45   |     |      | V    |
| Emitter-base breakdown voltage       | V <sub>(BR)EBO</sub>    | I <sub>E</sub> =10μA, I <sub>C</sub> =0             | 6    |     |      | V    |
| Collector cut-off current            | I <sub>CB0</sub>        | V <sub>CB</sub> =30V, I <sub>E</sub> =0             |      |     | 15   | nA   |
| Emitter cut-off current              | I <sub>EBO</sub>        | V <sub>EB</sub> =4V, I <sub>C</sub> =0              |      |     | 15   |      |
| DC current gain*                     | h <sub>FE</sub>         | V <sub>CE</sub> =5V, I <sub>C</sub> =2mA            | 200  |     | 450  |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)(1)</sub> | I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA         |      |     | 0.25 | V    |
|                                      | V <sub>CE(sat)(2)</sub> | I <sub>C</sub> =100mA, I <sub>B</sub> =5mA          |      |     | 0.65 | V    |
| Base-emitter voltage                 | V <sub>BE(1)</sub>      | V <sub>CE</sub> =5V, I <sub>C</sub> =2mA            | 0.58 |     | 0.7  | V    |
|                                      | V <sub>BE(2)</sub>      | V <sub>CE</sub> =5V, I <sub>C</sub> =10mA           |      |     | 0.77 | V    |
| Transition frequency                 | f <sub>T</sub>          | V <sub>CE</sub> =5V, I <sub>C</sub> =20mA, f=100MHz |      | 200 |      | MHz  |
| Collector output capacitance         | C <sub>ob</sub>         | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz     |      | 2   |      | pF   |

\*pulse test: Pulse Width ≤300μs, Duty Cycles ≤ 2.0%.

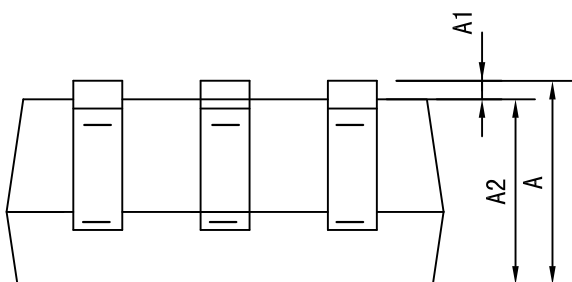
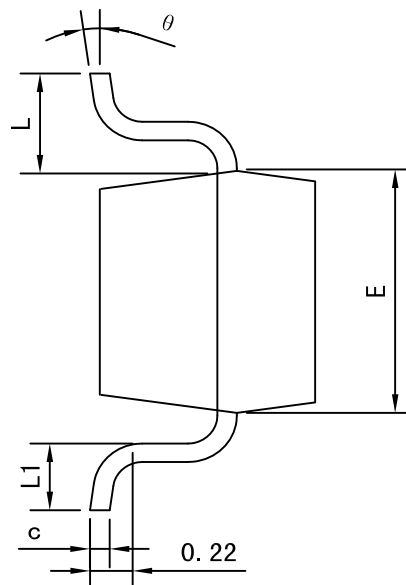
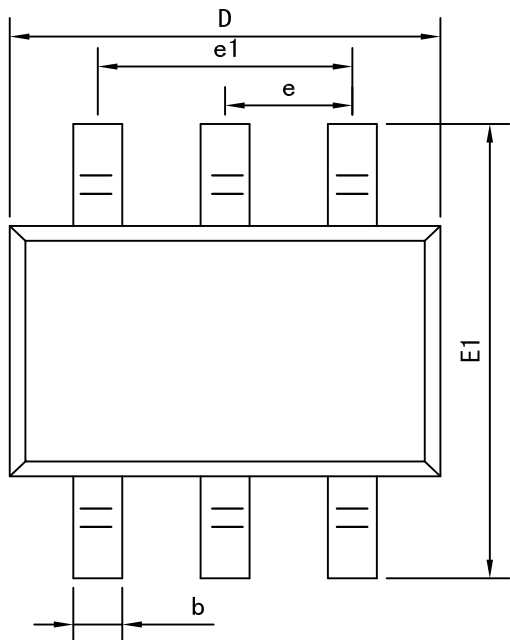


**Static Characteristic**





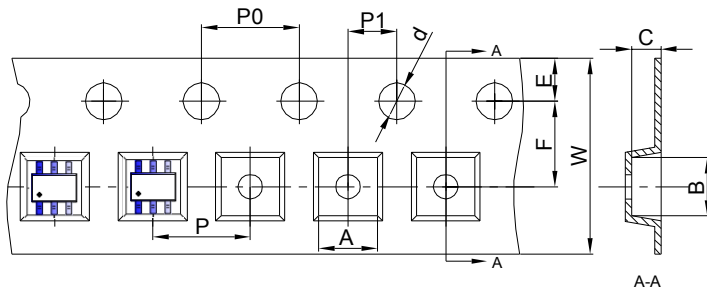
## SOT-363 Package outline dimensions



| Symbol   | Dimension in Millimeters |       |
|----------|--------------------------|-------|
|          | Min                      | Max   |
| A        | 0.900                    | 1.100 |
| A1       | 0.000                    | 0.100 |
| A2       | 0.900                    | 1.000 |
| b        | 0.150                    | 0.350 |
| c        | 0.080                    | 0.150 |
| D        | 2.000                    | 2.200 |
| E        | 1.150                    | 1.350 |
| E1       | 2.150                    | 2.450 |
| e        | 0.650 TYP                |       |
| e1       | 1.200                    | 1.400 |
| L        | 0.525 REF                |       |
| L1       | 0.260                    | 0.460 |
| $\theta$ | 0°                       | 8°    |



### SOT-363 Embossed Carrier Tape



#### Packaging Description:

SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |      |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
| SOT-363                      | 2.25 | 2.55 | 1.20 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### SOT-363 Tape Leader and Trailer

