

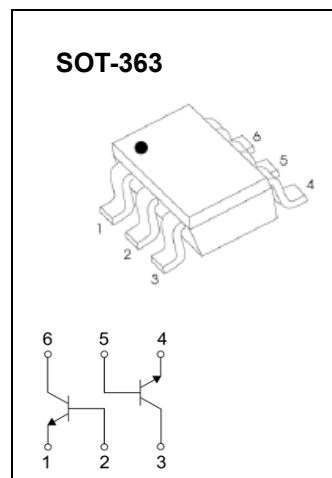
## SOT-363 Plastic-Encapsulate Transistors

### BC847DW DUAL TRANSISTOR (NPN+NPN)

#### FEATURES

- Two transistors in one package
- Reduces number of components and board space
- No mutual interference between the transistors

**MARKING:** BC847A 1Et  
BC847B 1Ft  
BC847C 1Gt



#### MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

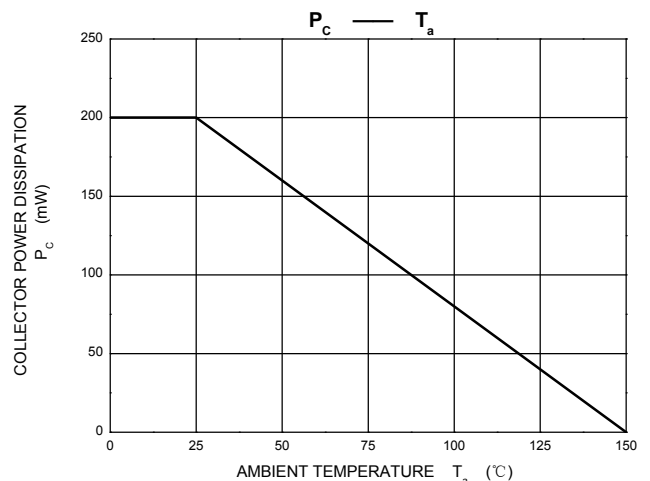
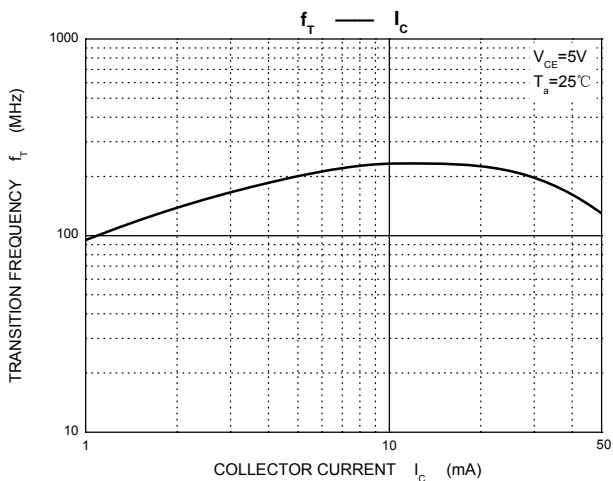
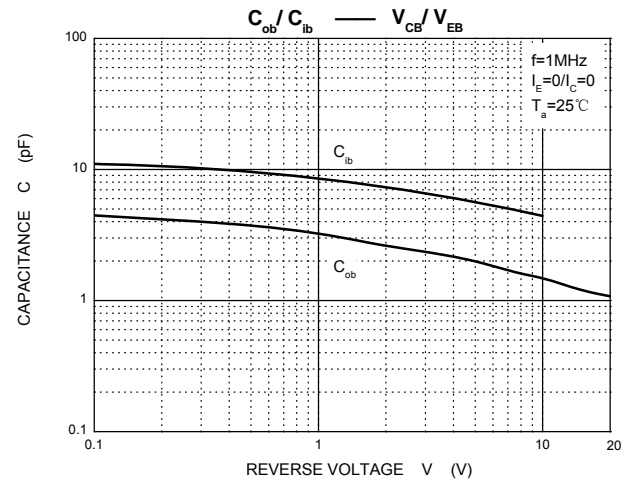
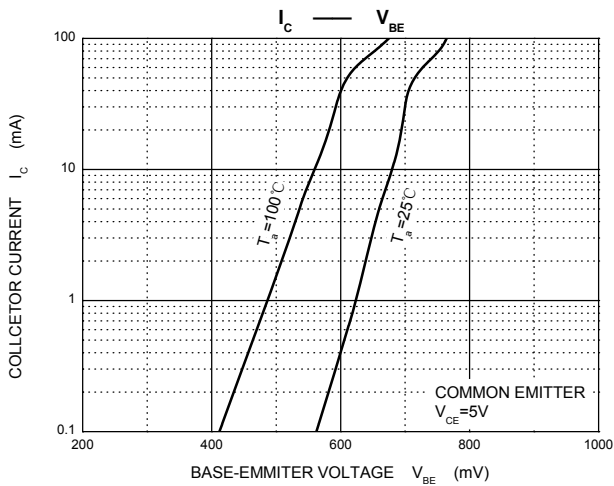
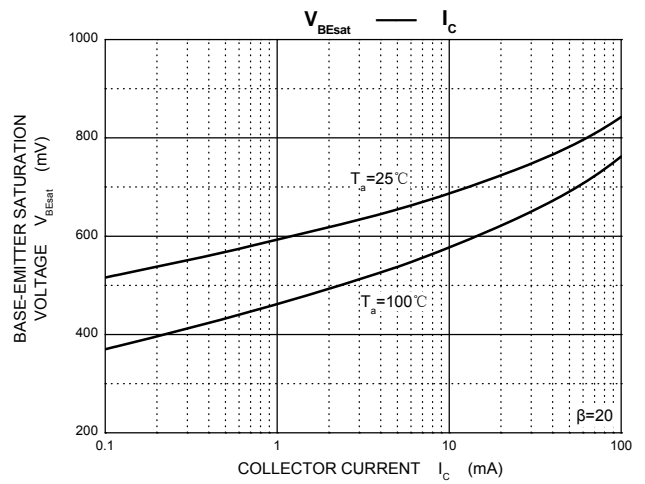
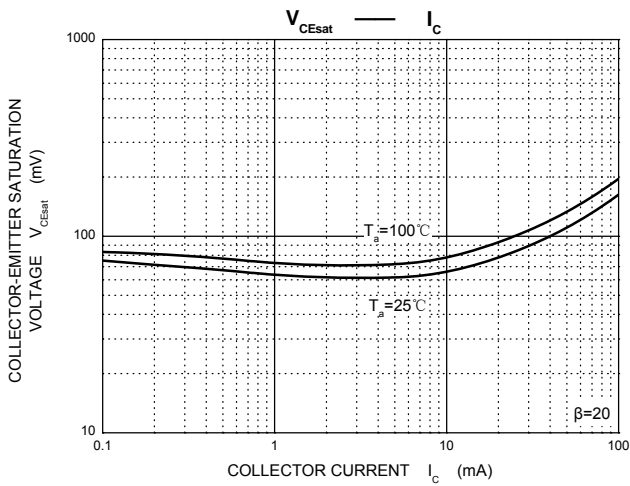
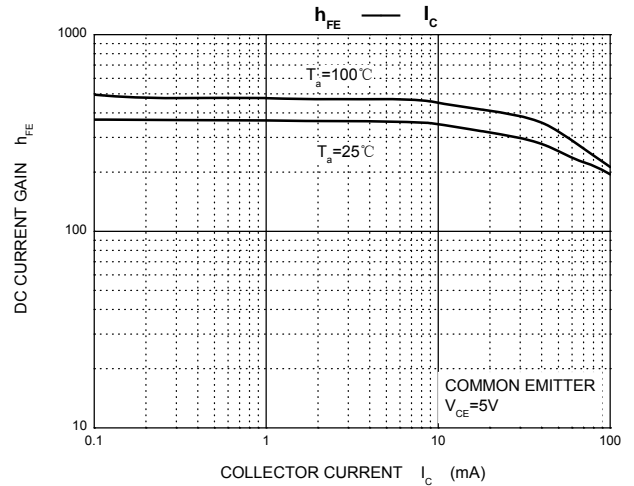
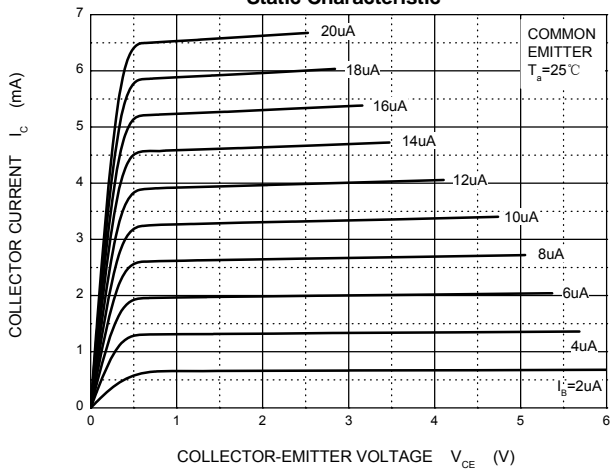
| Symbol    | Parameter                     | Value   | Units              |
|-----------|-------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage        | 50      | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage     | 45      | V                  |
| $V_{EBO}$ | Emitter-Base Voltage          | 6       | V                  |
| $I_C$     | Collector Current –Continuous | 0.1     | A                  |
| $P_C$     | Collector Dissipation         | 200     | mW                 |
| $T_J$     | Junction Temperature          | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^{\circ}\text{C}$ |

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                            | Symbol           | Test conditions                                      | Min | Typ  | Max | Unit          |
|--------------------------------------|------------------|--|-----|------|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$    | $I_C=10\mu\text{A}, I_E=0$                           | 50  |      |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$    | $I_C=10\text{mA}, I_B=0$                             | 45  |      |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$    | $I_E=10\mu\text{A}, I_C=0$                           | 6   |      |     | V             |
| Collector cut-off current            | $I_{CBO}$        | $V_{CB}=30\text{V}, I_E=0$                           |     |      | 15  | nA            |
| Emitter cut-off current              | $I_{EBO}$        | $I_C=0, V_{EB}=5\text{V}$                            |     |      | 5   | $\mu\text{A}$ |
| DC current gain Group                | $h_{FE}$         | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   | A   | 110  | 220 |               |
|                                      |                  |  | B   | 200  | 450 |               |
|                                      |                  |  | C   | 420  | 800 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)(1)}$ | $I_C=10\text{mA}, I_B=0.5\text{mA}$                  |     |      | 0.1 | V             |
|                                      | $V_{CE(sat)(2)}$ | $I_C=100\text{mA}, I_B=5\text{mA}$                   |     |      | 0.3 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$    | $I_C=10\text{mA}, I_B=0.5\text{mA}$                  |     | 0.77 |     | V             |
| Transition frequency                 | $f_T$            | $V_{CB}=5\text{V}, I_E=10\text{mA}, f=100\text{MHz}$ | 100 |      |     | MHz           |
| Collector output capacitance         | $C_{ob}$         | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$            |     |      | 1.5 | pF            |



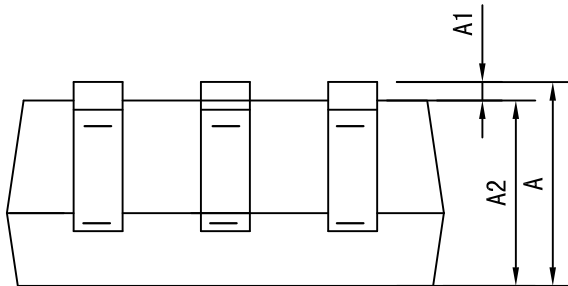
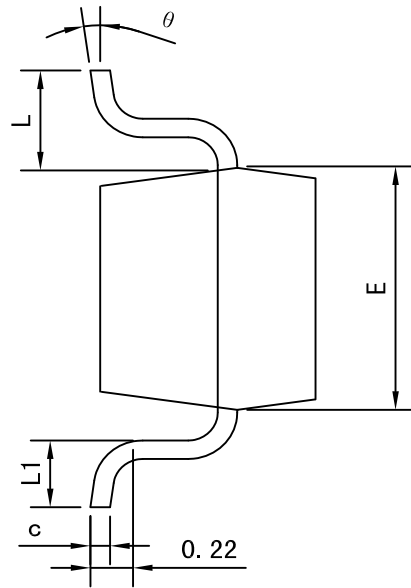
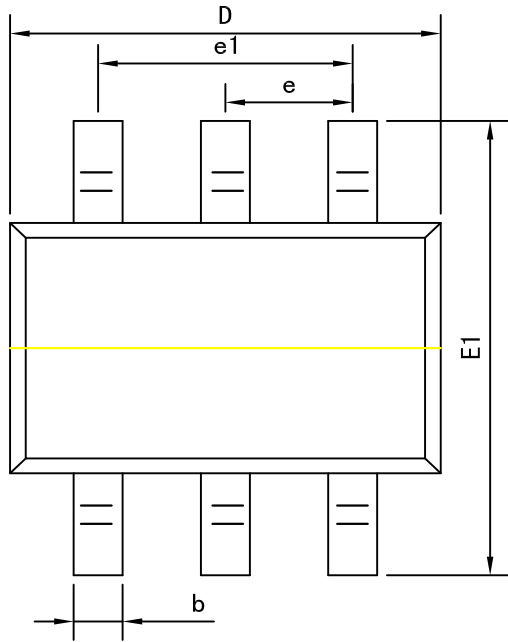
Static Characteristic





Package outline dimensions

SOT-363



| 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°    |