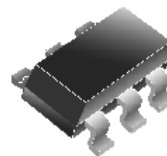


RoHS Compliant Product  
A suffix of "-C" specifies halogen and lead free

## FEATURES

- Power Dissipation  $P_C$ : 200mW ( $T_A=25^\circ\text{C}$ )
- Collector Current  $I_C$ : 100mA
- Collector-Base Voltage  $V_{(BR)CBO}$ : 50V

**SOT-363**



## MARKING

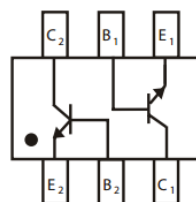
1C

## PACKAGING DIMENSION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-363 | 3K  | 7 inch      |

## ORDER INFORMATION

| Part Number | Type                            |
|-------------|---------------------------------|
| BC847S-C    | Lead (Pb)-free and Halogen-free |



## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter                           | Symbol          | Ratings | Unit               |
|-------------------------------------|-----------------|---------|--------------------|
| Collector-Base Voltage              | $V_{CBO}$       | 50      | V                  |
| Collector-Emitter Voltage           | $V_{CEO}$       | 45      | V                  |
| Emitter-Base Voltage                | $V_{EBO}$       | 6       | V                  |
| Collector Current-Continuous        | $I_C$           | 100     | mA                 |
| Power Dissipation                   | $P_D$           | 200     | mW                 |
| Thermal Resistance Junction-Ambient | $R_{\theta JA}$ | 625     | $^\circ\text{C/W}$ |
| Junction, Storage Temperature Range | $T_J, T_{STG}$  | -55~150 | $^\circ\text{C}$   |

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

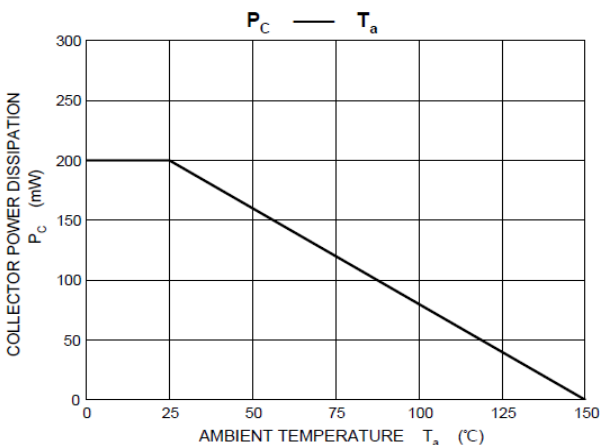
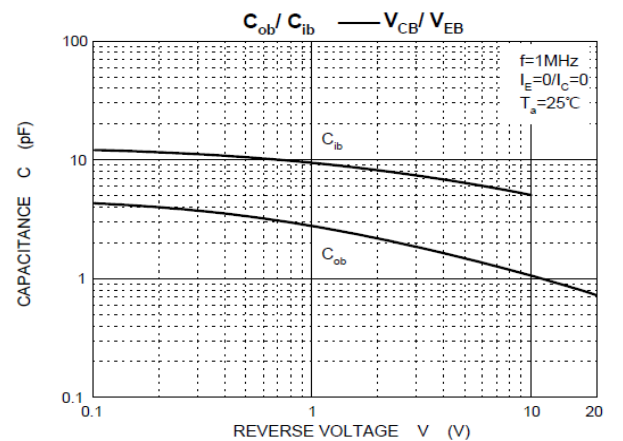
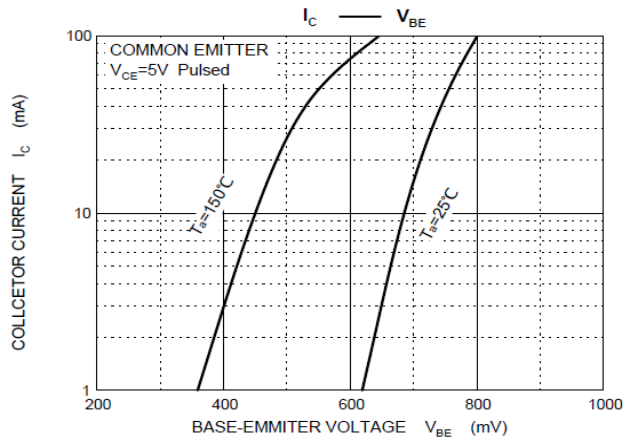
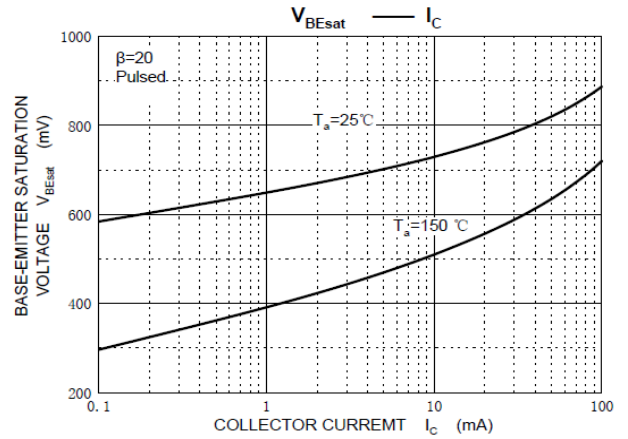
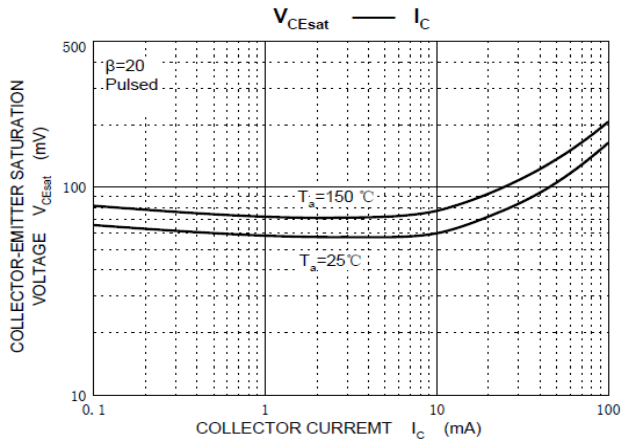
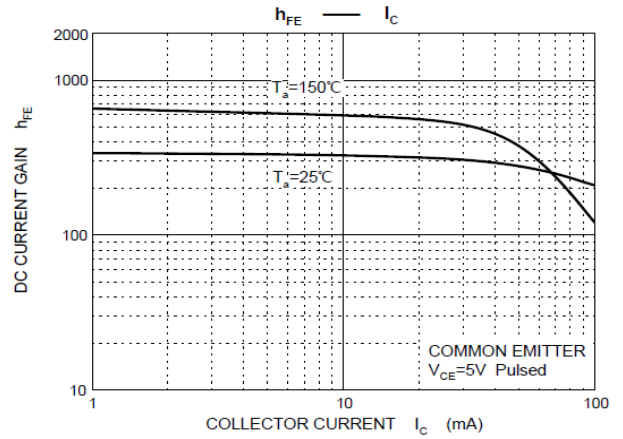
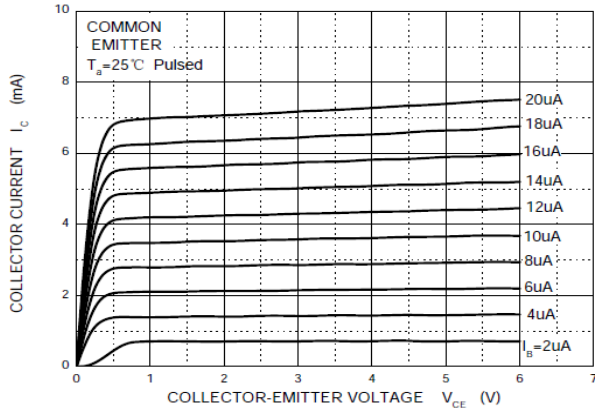
| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit | Test Conditions                                      |
|--------------------------------------|---------------|------|------|------|------|--|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | 50   | -    | -    | V    | $I_C=10\mu\text{A}, I_E=0$                           |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | 45   | -    | -    |      | $I_C=1\text{mA}, I_B=0$                              |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | 6    | -    | -    |      | $I_E=10\mu\text{A}, I_C=0$                           |
| Collector Cut-off Current            | $I_{CBO}$     | -    | -    | 15   | nA   | $V_{CB}=30\text{V}, I_E=0$                           |
| Emitter Cut-off Current              | $I_{EBO}$     | -    | -    | 15   |      | $V_{EB}=4\text{V}, I_C=0$                            |
| DC Current Gain <sup>1</sup>         | $h_{FE}$      | 110  | -    | 630  |      | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | -    | -    | 0.25 | V    | $I_C=10\text{mA}, I_B=0.5\text{mA}$                  |
|                                      |               | -    | -    | 0.65 |      | $I_C=100\text{mA}, I_B=5\text{mA}$                   |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | 0.58 | -    | 0.7  | V    | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   |
|                                      |               | -    | -    | 0.77 |      | $V_{CE}=5\text{V}, I_C=10\text{mA}$                  |
| Transition Frequency                 | $f_T$         | -    | 200  | -    | MHz  | $V_{CE}=5\text{V}, I_C=20\text{mA}, f=100\text{MHz}$ |
| Output Capacitance                   | $C_{ob}$      | -    | 2    | -    | pF   | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$            |

Note:

1. Pulse test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

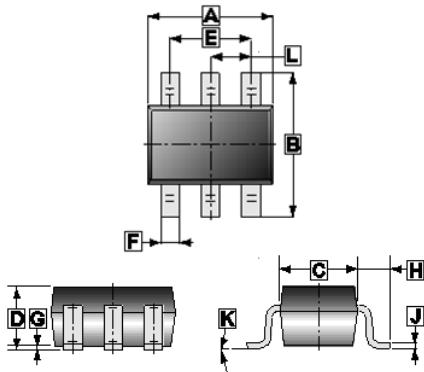
**CHARACTERISTIC CURVES**

Static Characteristic



**PACKAGE OUTLINE DIMENSIONS**

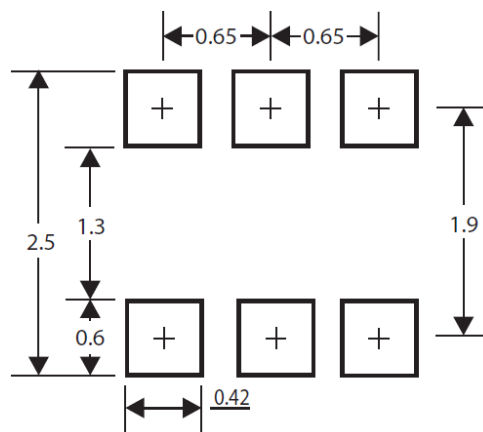
**SOT-363**



| REF. | Millimeter |      |
|------|------------|------|
|      | Min.       | Max. |
| A    | 1.80       | 2.20 |
| B    | 1.80       | 2.45 |
| C    | 1.15       | 1.35 |
| D    | 0.70       | 1.10 |
| E    | 1.30 REF.  |      |
| F    | 0.10       | 0.35 |
| G    | 0.10 REF.  |      |
| H    | 0.525 REF. |      |
| J    | 0.05       | 0.25 |
| K    | 8°         |      |
| L    | 0.65 TYP.  |      |

**MOUNTING PAD LAYOUT**

**SOT-363**



\*Dimensions in millimeters