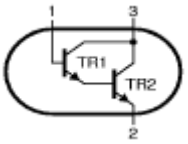
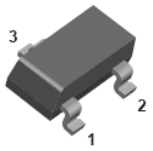
# NPN Darlington Amplifier Transistor **BCV27/BCV47**

## FEATURES

- Complementary to BCV26,BCV46.
- High collector current.
- High current gain.
- For general AF applications.
- Complementary types:BCV26,BCV46

Lead-free




**SOT-23**

## APPLICATIONS

- NPN silicon darlington transistor.

## ORDERING INFORMATION

| Type No. | Marking | Package Code |
|---|---|---|
| BCV27 | FF | SOT-23 |
| BCV47 | FG | SOT-23 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| **Symbol** | **Parameter** | **BCV27** | **BCV47** | **Units** |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 40 | 80 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 30 | 60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 10 | 10 | V |
| $I_C$ | Collector Current -DC | 500 | | mA |
| $I_{CM}$ | Collector Current –Peak | 800 | | mA |
| $I_B$ | Base Current -DC | 100 | | mA |
| $I_{BM}$ | Base Current –Peak | 200 | | mA |
| $P_C$ | Collector Dissipation | 350 | | mW |
| $T_j, T_{stg}$ | Junction and Storage Temperature | -65 to +150 | | ℃ |

# NPN Darlington Amplifier Transistor **BCV27/BCV47**

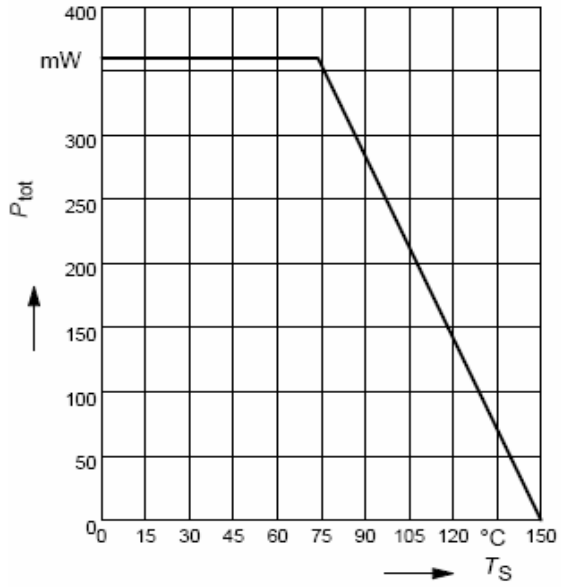
## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

| **Parameter** | **Symbol** | **Test conditions** | **MIN** | **TYP** | **MAX** | **UNIT** |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=100μA,$I_E$=0 BCV27<br>BCV47 | 40<br>80 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=10mA,$I_B$=0 BCV27<br>BCV47 | 30<br>60 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=10μA,$I_C$=0 | 10 | | | V |
| Collector cutoff current | $I_{CBO}$ | $V_{CB}$=30V,$I_E$=0 BCV27<br>$V_{CB}$=60V,$I_E$=0 BCV47 | | | 0.1<br>0.1 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=4V,$I_C$=0 | | | 0.1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$=1V,$I_C$=100uA<br>BCV27<br>BCV47 | <br>4000<br>2000 | | | |
| DC current gain | $h_{FE}$ | $V_{CE}$=5V,$I_C$=10mA<br>BCV27<br>BCV47 | <br>10k<br>4000 | | | |
| DC current gain | $h_{FE}$ | $V_{CE}$=5V,$I_C$=0.1A<br>BCV27<br>BCV47 | <br>20k<br>10k | | | |
| DC current gain | $h_{FE}$ | $V_{CE}$=5V,$I_C$=0.5A<br>BCV27<br>BCV47 | <br>4000<br>2000 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=100mA, $I_B$= 0.1mA | | | 1 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=100mA, $I_B$= 0.1mA | | | 1.5 | V |
| Transition frequency | $f_T$ | $V_{CE}$=5V, $I_C$= 50mA<br>f=100MHz | | 170 | | MHz |
| Collector-base capacitance | $C_{cb}$ | $V_{CB}$=10V,f=1MHz | | 3.5 | | pF |

# NPN Darlington Amplifier Transistor **BCV27/BCV47**

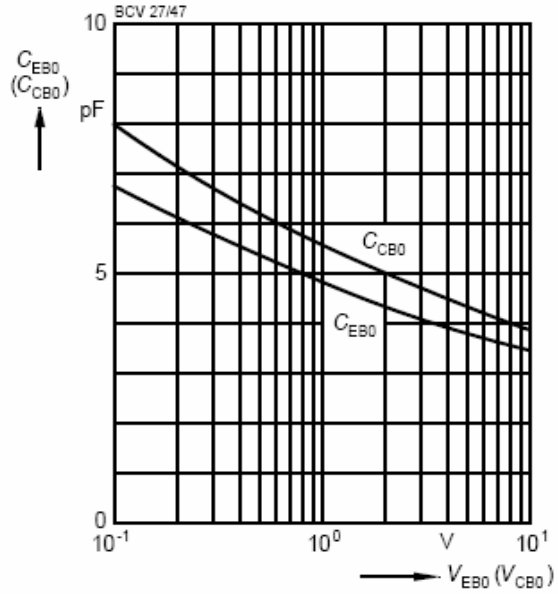
## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

**Total power dissipation** $P_{tot} = f(T_S)$



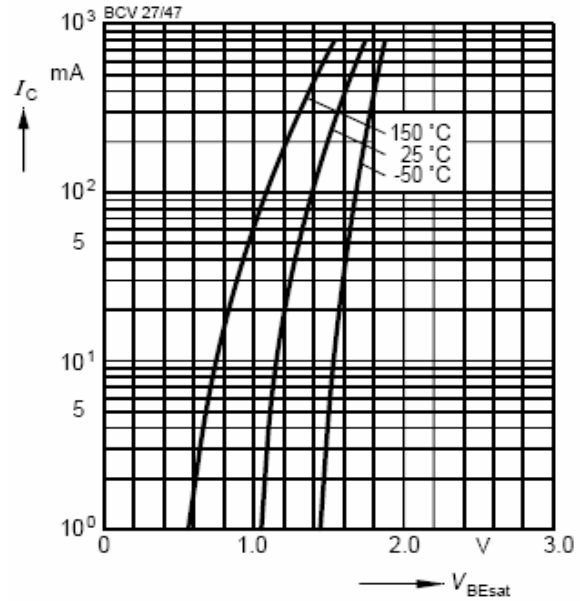

**Collector-base capacitance** $C_{CB} = f(V_{CBO})$

**Emitter-base capacitance** $C_{EB} = f(V_{EBO})$



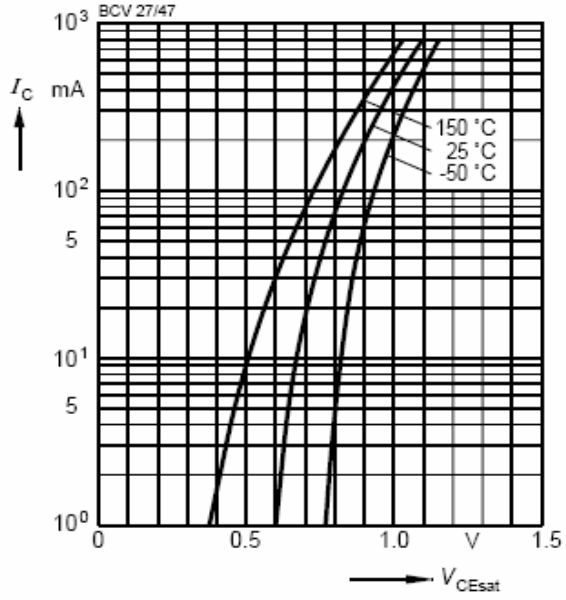

**Base-emitter saturation voltage**

$I_C = f(V_{BEsat})$, $h_{FE} = 1000$




**Collector-emitter saturation voltage**

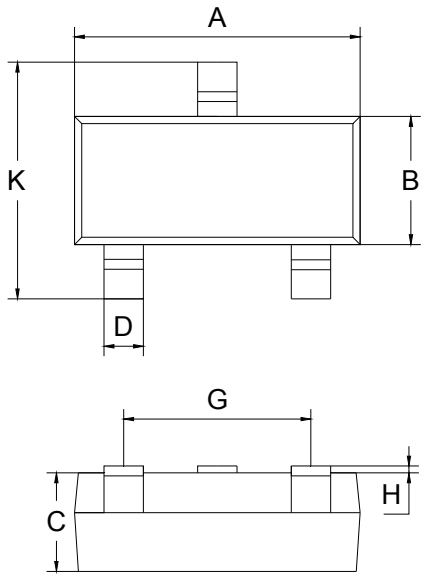
$I_C = f(V_{CEsat})$, $h_{FE} = 1000$



# NPN Darlington Amplifier Transistor **BCV27/BCV47**

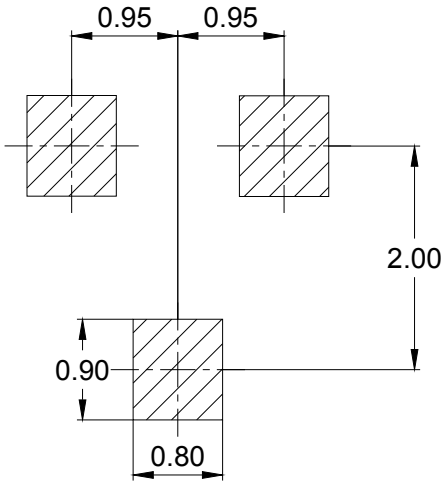
## PACKAGE OUTLINE

Plastic surface mounted package SOT-23




| SOT-23 | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.70 | 3.10 |
| B | 1.10 | 1.50 |
| C | 1.0 Typical | |
| D | 0.4 Typical | |
| E | 0.35 | 0.48 |
| G | 1.80 | 2.00 |
| H | 0.02 | 0.1 |
| J | 0.1 Typical | |
| K | 2.20 | 2.60 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit : mm

## PACKAGE INFORMATION

| Device | Package | Shipping |
|---|---|---|
| BCV27/BCV47 | SOT-23 | 3000/Tape&Reel |