

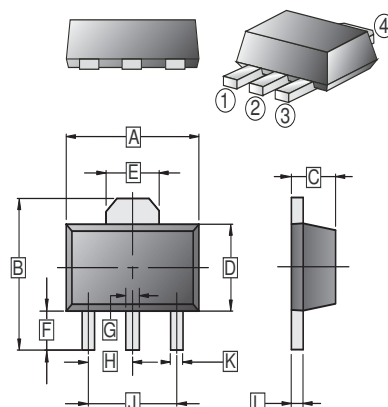
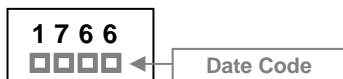
RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## DESCRIPTION

The BCP1766 is suited for the output stage of 0.5W audio, voltage regulator, and relay driver.

## SOT-89

## MARKING



## CLASSIFICATION OF $h_{FE}$

| Product Rank | BCP1766-P | BCP1766-Q | BCP1766-R |
|--------------|-----------|-----------|-----------|
| Range        | 82~180    | 120~270   | 180~390   |

## PACKAGE INFORMATION

| Package | MPQ | LeaderSize |
|---------|-----|------------|
| SOT-89  | 1K  | 7' inch    |

| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 4.40       | 4.60 | G    | 0.40       | 0.58 |
| B    | 3.94       | 4.25 | H    | 1.50       | TYP  |
| C    | 1.40       | 1.60 | J    | 3.00       | TYP  |
| D    | 2.30       | 2.60 | K    | 0.32       | 0.52 |
| E    | 1.50       | 1.70 | L    | 0.35       | 0.44 |
| F    | 0.89       | 1.2  |      |            |      |

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

| Parameter                      | Symbol         | Ratings      | Unit             |
|--------------------------------|----------------|--------------|------------------|
| Collector-Base Voltage         | $V_{CBO}$      | 40           | V                |
| Collector-Emitter Voltage      | $V_{CEO}$      | 32           | V                |
| Emitter-Base Voltage           | $V_{EBO}$      | 5.0          | V                |
| Collector Current -Continuous  | $I_C$          | 2.0          | A                |
| Total Power Dissipation        | $P_D$          | 1.2          | W                |
| Junction & Storage temperature | $T_J, T_{STG}$ | 150, -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     | $V_{(BR)CBO}$ | 40   | -    | -    | V             | $I_C = 50 \mu\text{A}, I_E = 0$                                  |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | 32   | -    | -    | V             | $I_C = 1 \text{ mA}, I_B = 0$                                    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | 5.0  | -    | -    | V             | $I_E = 50 \mu\text{A}$   |
| Collector cut-off current            | $I_{CBO}$     | -    | -    | 1    | $\mu\text{A}$ | $V_{CB} = 20 \text{ V}$  |
| Emitter cut-off current              | $I_{EBO}$     | -    | -    | 1    | $\mu\text{A}$ | $V_{EB} = 4 \text{ V}$   |
| DC current gain                      | $h_{FE}$      | 82   | -    | 390  |               | $V_{CE} = 3 \text{ V}, I_C = 0.5 \text{ A}$                      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | -    | 0.5  | 0.8  | V             | $I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$                         |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | -    | -    | 2.0  | V             | $I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$                         |
| Transition frequency                 | $f_T$         | -    | 100  | -    | MHz           | $V_{CE} = 5 \text{ V}, I_E = 50 \text{ mA}, f = 100 \text{ MHz}$ |
| Output Capacitance                   | $C_{OB}$      | -    | 30   | -    | pF            | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$              |

**CHARACTERISTIC CURVES**

