



## TO-92 Plastic-Encapsulate Transistors

### BC636,BC638,BC640 TRANSISTOR (PNP)

#### FEATURES

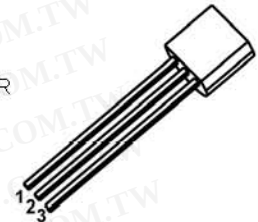
High current transistors

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

| Symbol          | Parameter                               | Value   | Unit                      |
|-----------------|-----------------------------------------|---------|---------------------------|
| $V_{CB0}$       | Collector-Base Voltage                  | BC636   | -45                       |
|                 |                                         | BC638   | -60                       |
|                 |                                         | BC640   | -100                      |
| $V_{CE0}$       | Collector-Emitter Voltage               | BC636   | -45                       |
|                 |                                         | BC638   | -60                       |
|                 |                                         | BC640   | -80                       |
| $V_{EB0}$       | Emitter-Base Voltage                    | -5      | V                         |
| $I_C$           | Collector Current -Continuous           | -1      | A                         |
| $P_C$           | Collector Power Dissipation             | 0.83    | W                         |
| $R_{\theta JA}$ | Thermal Resistance, junction to Ambient | 150     | $^\circ\text{C}/\text{W}$ |
| $T_j$           | Junction Temperature                    | 150     | $^\circ\text{C}$          |
| $T_{stg}$       | Storage Temperature                     | -55-150 | $^\circ\text{C}$          |

#### TO-92

1. EMITTER
2. COLLECTOR
3. BASE



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

| Parameter                            | Symbol        | Test conditions                                             | Min   | Typ  | Max  | Unit          |
|--------------------------------------|---------------|-------------------------------------------------------------|-------|------|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -100\mu\text{A}, I_E = 0$                            | BC636 | -45  |      | V             |
|                                      |               |                                                             | BC638 | -60  |      |               |
|                                      |               |                                                             | BC640 | -100 |      |               |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -1\text{mA}, I_B = 0$                                | BC636 | -45  |      | V             |
|                                      |               |                                                             | BC638 | -60  |      |               |
|                                      |               |                                                             | BC640 | -80  |      |               |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = -100\mu\text{A}, I_C = 0$                            | -5    |      |      | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -30\text{V}, I_E = 0$                             |       |      | -0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -5\text{V}, I_C = 0$                              |       |      | -0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = -2\text{V}, I_C = 5\text{mA}$                     | 40    |      |      |               |
|                                      | $h_{FE(2)}$   | $V_{CE} = -2\text{V}, I_C = 150\text{mA}$                   | 63    |      | 250  |               |
|                                      | $h_{FE(3)}$   | $V_{CE} = -2\text{V}, I_C = 500\text{mA}$                   | 25    |      |      |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500\text{mA}, I_B = -50\text{mA}$                    |       |      | -0.5 | V             |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE} = -2\text{V}, I_C = -500\text{mA}$                  |       |      | -1   | V             |
| Transition frequency                 | $f_T$         | $V_{CE} = -5\text{V}, I_C = 50\text{mA}, f = 100\text{MHz}$ | 100   |      |      | MHz           |

#### CLASSIFICATION OF $h_{FE(2)}$

|       |          |                              |
|-------|----------|------------------------------|
| Rank  | BC636-10 | BC636-16, BC638-16, BC640-16 |
| Range | 63-160   | 100-250                      |