

CDIL

BCW66F, BCW66G  
BCW66H

## GENERAL PURPOSE TRANSISTOR

N-P-N transistor

### Marking

BCW 66F = EF

BCW 66G = EG

BCW 66H = EH

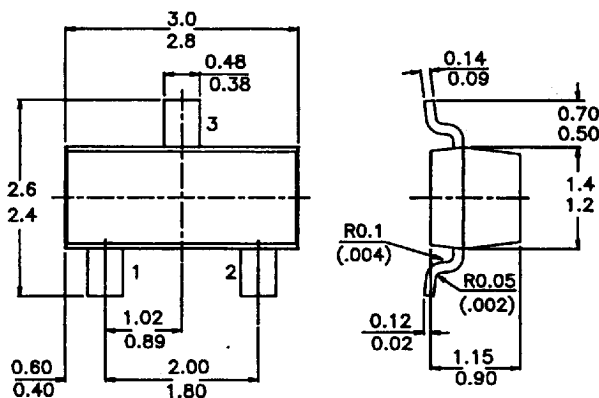
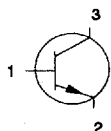
### PACKAGE OUTLINE DETAILS ALL DIMENSIONS IN mm

#### Pin configuration

1 = BASE

2 = EMITTER

3 = COLLECTOR



### ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)

$-V_{CBO}$  max. 75 75 75 V

Collector-emitter voltage (open base)

$-V_{CEO}$  max. 45 45 45 V

Emitter-base voltage (open collector)

$-V_{EBO}$  max. 5 5 5 V

Collector current (d.c.)

$-I_C$  max. 800 800 800 mA

Total power dissipation at  $T_{amb} = 25^\circ\text{C}$

$P_{tot}$  max 225 225 225 mW

D.C. current gain

$-I_C = 100 \mu\text{A}; -V_{CE} = 10 \text{ V}$

$h_{FE}$  min. 35 50 80

$-I_C = 10 \text{ mA}; V_{CE} = 1 \text{ V}$

min. 75 110 180

$-I_C = 100 \text{ mA}; V_{CE} = 1 \text{ V}$

min. 100 160 250

max. 250 400 630

$-I_C = 500 \text{ mA}; V_{CE} = 2 \text{ V}$

min. 35 60 100

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

| Limiting values                                         |            | BCW  | 66F         | 66G | 66H              |
|---------------------------------------------------------|------------|------|-------------|-----|------------------|
| Collector-base voltage (open emitter)                   | $-V_{CB0}$ | max. | 75          | 75  | 75 V             |
| Collector-emitter voltage (open base)                   | $-V_{CEO}$ | max. | 45          | 45  | 45 V             |
| Emitter-base voltage (open collector)                   | $-V_{EBO}$ | max. | 5           | 5   | 5 V              |
| Collector current (d.c.)                                | $-I_C$     | max. | 800         | 800 | 800 mA           |
| Total power dissipation at $T_{amb} = 25^\circ\text{C}$ | $P_{tot}$  | max  | 225         | 225 | 225 mW           |
| Storage temperature                                     | $T_{stg}$  |      | -55 to +150 |     | $^\circ\text{C}$ |

### THERMAL CHARACTERISTICS

$$T_j = P (R_{th\ j-t} + R_{th\ s-a}) + T_{amb}$$

Thermal resistance

|                          |               |     |     |     |                     |
|--------------------------|---------------|-----|-----|-----|---------------------|
| from junction to ambient | $R_{th\ j-a}$ | 556 | 556 | 556 | $^\circ\text{C/mW}$ |
|--------------------------|---------------|-----|-----|-----|---------------------|

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

|                                                                |                      |      |     |     |         |
|----------------------------------------------------------------|----------------------|------|-----|-----|---------|
| Collector-emitter breakdown voltage                            |                      |      |     |     |         |
| $-I_C = 10\text{ mA}; I_B = 0$                                 | $-V_{(BR)CEO\ min.}$ | 45   | 45  | 45  | V       |
| Collector-emitter breakdown voltage                            |                      |      |     |     |         |
| $-I_C = 10\ \mu\text{A}; V_{EB} = 0$                           | $-V_{(BR)CES\ min.}$ | 75   | 75  | 75  | V       |
| Emitter-base breakdown voltage                                 |                      |      |     |     |         |
| $-I_E = 10\ \mu\text{A}; I_C = 0$                              | $-V_{(BR)EBO\ min.}$ | 5    | 5   | 5   | V       |
| Collector cut-off current                                      |                      |      |     |     |         |
| $-V_{CE} = 45\text{ V}; I_C = 0\text{ V}$                      | $-I_{CES}$           | max. | 20  | 20  | 20 nA   |
| Emitter cut-off current                                        |                      |      |     |     |         |
| $V_{EB} = 4\text{ V}; I_C = 0$                                 | $I_{EBO}$            | max. | 20  | 20  | 20 nA   |
| Output capacitance at $f = 1\text{ MHz}$                       |                      |      |     |     |         |
| $I_E = 0; -V_{CB} = 10\text{ V}$                               | $C_c$                | max. | 12  | 12  | 12 pF   |
| Input capacitance at $f = 1\text{ MHz}$                        |                      |      |     |     |         |
| $I_C = 0; -V_{EB} = 0.5\text{ V}$                              | $C_e$                | max. | 80  | 80  | 80 pF   |
| Saturation voltages                                            |                      |      |     |     |         |
| $-I_C = 500\text{ mA}; -I_B = 50\text{ mA}$                    | $-V_{CEsat}$         | max. | 0.7 | 0.7 | 0.7 V   |
| $-I_C = 100\text{ mA}; -I_B = 10\text{ mA}$                    | $-V_{CEsat}$         | typ. | 0.3 | 0.3 | 0.3 V   |
| $-I_C = 500\text{ mA}; -I_B = 50\text{ mA}$                    | $-V_{BEsat}$         | max. | 2   | 2   | 2 V     |
| Noise figure at $R_S = 1\text{ k}\Omega$                       |                      |      |     |     |         |
| $-I_C = 0.2\text{ mA}; -V_{CE} = 5\text{ V}$                   |                      |      |     |     |         |
| $f = 1\text{ KHz}, BW = 200\text{ Hz}$                         | NF                   | max. | 10  | 10  | 10 dB   |
| Current Gain-Bandwidth Product                                 |                      |      |     |     |         |
| $I_C = 20\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$ |                      | min. | 100 | 100 | 100 MHz |

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