

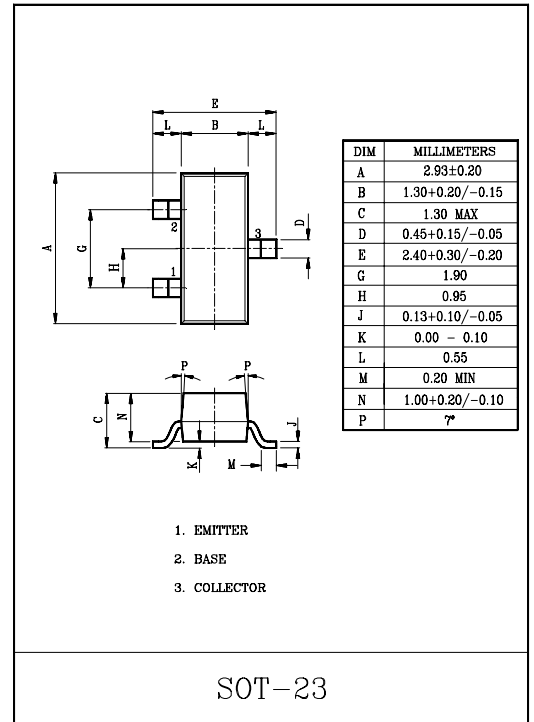
GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES

- Super Mini Packaged Transistors for Hybrid circuits.
- For Complementary with NPN Type BCW71/72, BCV71.

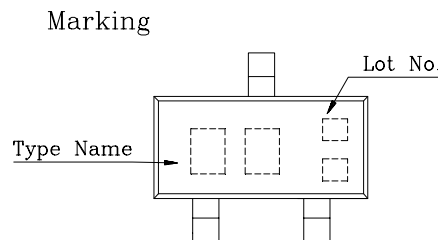
MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|----------|-----------|---------|------|
| Collector-Base Voltage | BCW69/70 | V_{CBO} | -50 | V |
| | BCW89 | | -60 | |
| Collector-Emitter Voltage | BCW69/70 | V_{CEO} | -45 | V |
| | BCW89 | | -60 | |
| Emitter-Base Voltage | | V_{EBO} | -5 | V |
| Collector Current | | I_C | -100 | mA |
| Emitter Current | | I_E | 100 | mA |
| Collector Power Dissipation | | P_C | 200 | mW |
| Junction Temperature | | T_j | 150 | °C |
| Storage Temperature Range | | T_{stg} | -65~150 | °C |



MARK SPEC

| TYPE | MARK |
|-------|------|
| BCW69 | H 1 |
| BCW70 | H 2 |
| BCW89 | H 5 |



BCW69/70/89

ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------|---------------|--|------|------|------|---------|
| Collector-Emitter Breakdown Voltage | BCW69/70 | $V_{(BR)CEO}$ | $I_C=-2mA, I_B=0$ | -45 | - | - | V |
| | BCW89 | | | -60 | - | - | |
| Collector-Base Breakdown Voltage | BCW69/70 | $V_{(BR)CBO}$ | $I_C=-10\mu A, I_E=0$ | -50 | - | - | V |
| | BCW89 | | | -60 | - | - | |
| Collector-Emitter Breakdown Voltage | BCW69/70 | $V_{(BR)CES}$ | $I_C=-10\mu A, V_{BE}=0$ | -50 | - | - | V |
| | BCW89 | | | -60 | - | - | |
| Emitter-Base Breakdown Voltage | | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | -5.0 | - | - | V |
| Collector Cut-off Current | | I_{CBO} | $V_{CB}=-20V, I_E=0$ | - | - | -100 | nA |
| | | | $T_a=100^\circ C, V_{CB}=-20V, I_E=0$ | - | - | -10 | μA |
| DC Current Gain | BCW69/89 | h_{FE} | $V_{CE}=-5V, I_C=-10\mu A$ | - | 90 | - | |
| | BCW70 | | | - | 150 | - | |
| | BCW69/89 | | $V_{CE}=-5V, I_C=-2mA$ | 120 | - | 260 | |
| | BCW70 | | | 215 | - | 500 | |
| Base-Emitter Voltage | | $V_{BE(ON)}$ | $V_{CE}=-5V, I_C=-2mA$ | -600 | - | -750 | mV |
| Base-Emitter Saturation Voltage | | $V_{BE(sat)}$ | $I_C=-10mA, I_B=-0.5mA$ | - | -720 | - | mV |
| | | | $I_C=-50mA, I_B=-2.5mA$ | - | -810 | - | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | $I_C=-10mA, I_B=-0.5mA$ | - | - | -300 | mV |
| | | | $I_C=-50mA, I_B=-2.5mA$ | - | -180 | - | |
| Transition Frequency | | f_T | $I_C=-10mA, V_{CE}=-5V, f=100MHz$ | - | 150 | - | MHz |
| Collector Output Capacitance | | C_{ob} | $V_{CB}=-10V, I_E=0, f=1MHz$ | - | - | 7.0 | pF |
| Noise Figure | | NF | $I_C=-0.2mA, V_{CE}=-5V, R_g=2k\Omega, f=1kHz$ | - | - | 10 | dB |