

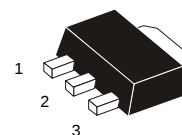
## The Small-signal NPN Silicon High Voltage Medium-Power Transistor

### DESCRIPTION

The BF620 is an NPN silicon epitaxial transistor designed for application as a video output to drive color CRT, telephony, professional communication equipment and other high voltage applications.

It has dynamic range and good current characteristic.

This high voltage transistor in 3-Pin mini power plastic package SOT89 offers superior quality and performance at low cost.



1 – Base  
2 – Collector  
3 – Emitter

### FEATURES

- Low Saturation Voltages  
 $V_{CE(sat)} = 0.6 \text{ V}$   
 $V_{BE(sat)} = 0.9 \text{ V}$
- High Breakdown Voltages  
 $V_{(BR)CBO} = 300 \text{ V}$   
 $V_{(BR)CEO} = 300 \text{ V}$
- Low Collector Current  
 $I_C = 50 \text{ mA}$
- Complementary to BF621

|         |        |
|---------|--------|
|         | SOT89  |
| JEDEC   | TO-243 |
| EIAJ    | SC-62  |
| GOST    | KT-47  |
| Weight: | 0.055g |

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

| Rating                               | Symbol     | Value              | Unit             |
|--------------------------------------|------------|--------------------|------------------|
| Collector – Emitter Voltage          | $V_{CEO}$  | <b>300</b>         | V                |
| Collector – Base Voltage             | $V_{CBO}$  | <b>300</b>         | V                |
| Emitter – Base Voltage               | $V_{EBO}$  | <b>5</b>           | V                |
| Collector Current                    | $I_C$      | <b>50</b>          | mA               |
| Peak Collector Current               | $I_{CM}$   | <b>100</b>         | mA               |
| Collector Dissipation                | $P_C$      | <b>1.0</b>         | W                |
| Junction Temperature                 | $T_{JMAX}$ | <b>150</b>         | $^\circ\text{C}$ |
| Operating Junction Temperature Range | $T_{OPR}$  | <b>-60 to +100</b> | $^\circ\text{C}$ |
| Storage Temperature Range            | $T_{STG}$  | <b>-65 to +150</b> | $^\circ\text{C}$ |

### ORDERING INFORMATION

| Device   | Marking | Package | Quantity              | Packing Style                                                                                     |
|----------|---------|---------|-----------------------|---------------------------------------------------------------------------------------------------|
| BF620    | DC      | SOT-89  | 5 Kpcs / plastic bags | In bulk                                                                                           |
| BF620-T1 | DC      | SOT-89  | 1 Kpcs / Reel         | Embossed tape 12-mm wide 7" dia. Pin 2 (Collector) towards the windung. Perforation on the right. |

# BF620

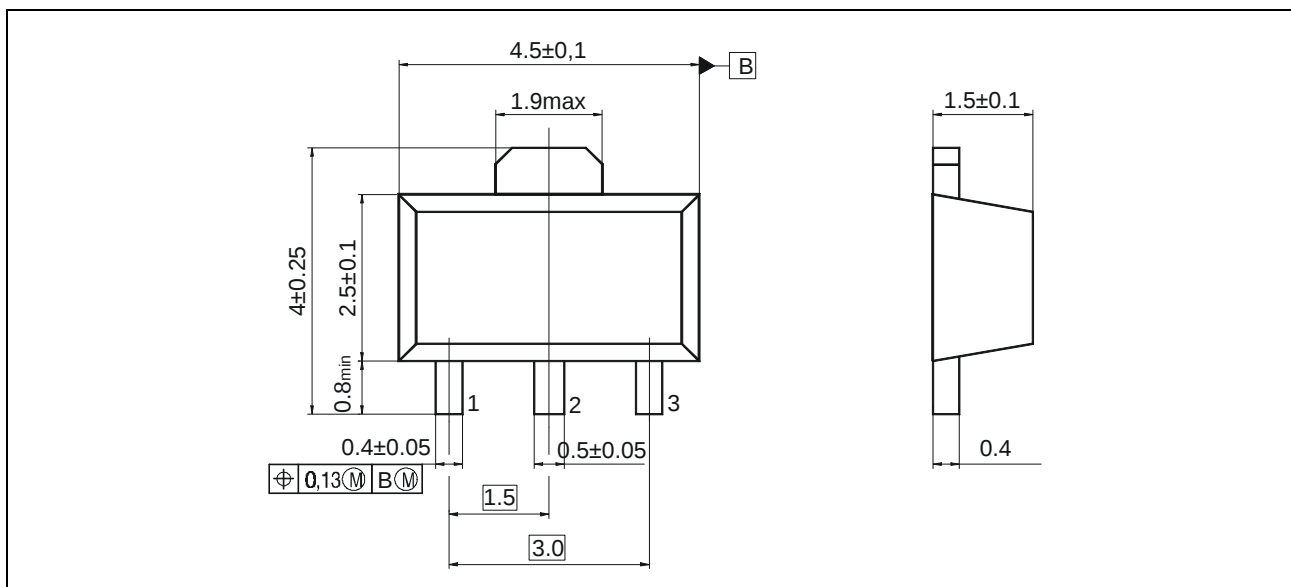
## ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| Characteristic                                                                    | Symbol        | Min        | Typ | Max       | Unit |
|-----------------------------------------------------------------------------------|---------------|------------|-----|-----------|------|
| <b>DC CHARACTERISTICS</b>                                                         |               |            |     |           |      |
| Collector – Base Cutoff Current,<br>$I_E = 0\text{mA}$ , $V_{CB} = 200\text{V}$   | $I_{CBO}$     | –          | –   | <b>10</b> | nA   |
| Emitter – Base Cutoff Current,<br>$I_C = 0\text{mA}$ , $V_{EB} = 5\text{V}$       | $I_{EBO}$     | –          | –   | <b>50</b> | nA   |
| Collector – Base Breakdown Voltage,<br>$I_C = 10\mu\text{A}$ , $I_E = 0\text{mA}$ | $V_{(BR)CBO}$ | <b>300</b> | –   | –         | V    |
| Collector – Emitter Breakdown Voltage,<br>$I_C = 1\text{mA}$ , $I_B = 0\text{mA}$ | $V_{(BR)CEO}$ | <b>300</b> | –   | –         | V    |
| Emitter – Base Breakdown Voltage,<br>$I_E = 100\mu\text{A}$ , $I_C = 0\text{mA}$  | $V_{(BR)CEO}$ | <b>5</b>   | –   | –         | V    |
| DC Current Gain,<br>$I_C = 25\text{mA}$ , $V_{CE} = 20\text{V}$                   | $h_{FE}$      | <b>50</b>  | –   | –         | –    |

## AC CHARACTERISTICS

|                                                                                                 |               |           |   |            |     |
|-------------------------------------------------------------------------------------------------|---------------|-----------|---|------------|-----|
| Collector – Emitter Saturation Voltage,<br>$I_C = 30\text{mA}$ , $I_B = 5\text{mA}$             | $V_{CE(sat)}$ | –         | – | <b>0.6</b> | V   |
| Base – Emitter Saturation Voltage,<br>$I_C = 20\text{mA}$ , $I_B = 2\text{mA}$                  | $V_{BE(sat)}$ | –         | – | <b>0.9</b> | V   |
| Collector – Base Capacitance,<br>$I_E = 0\text{mA}$ , $V_{CB} = 30\text{V}$ , $f = 1\text{MHz}$ | $C_{OB}$      | –         | – | <b>1.6</b> | pF  |
| Current Gain – Bandwidth Product,<br>$I_C = 10\text{mA}$ , $V_{CE} = 10\text{V}$                | $f_T$         | <b>60</b> | – | –          | MHz |

## PACKAGE DIMENSIONS of BF620 in mm



## PLASTIC CASE KT-47