

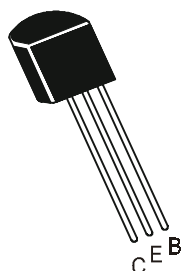
## NPN SILICON PLANAR EPITAXIAL RF TRANSISTORS

**BF494**

**BF495**

**TO-92**

**Plastic Package**



## High Voltage Video Transistors

### ABSOLUTE MAXIMUM RATINGS(Ta=25°C unless specified otherwise)

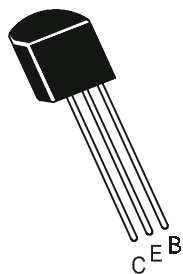
| DESCRIPTION                                         | SYMBOL         | Value       | UNITS       |
|-----------------------------------------------------|----------------|-------------|-------------|
| Collector Emitter Voltage                           | $V_{CEO}$      | 20          | V           |
| Collector Base Voltage                              | $V_{CBO}$      | 30          | V           |
| Emitter Base Voltage                                | $V_{EBO}$      | 5           | V           |
| Collector Current (DC)                              | $I_C$          | 30          | mA          |
| Collector Current(peak value)                       | $I_{CM}$       | 30          | mA          |
| Total Power dissipation up to<br>Tamb = 25°C        | $P_{tot}$      | 300         | mW          |
| Operating And Storage Junction<br>Temperature Range | $T_j, T_{stg}$ | -55 to +150 | mW/°C<br>°C |

### THERMAL RESISTANCE

|                     |               |     |     |
|---------------------|---------------|-----|-----|
| Junction to ambient | $R_{th(j-a)}$ | 420 | K/W |
|---------------------|---------------|-----|-----|

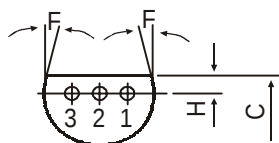
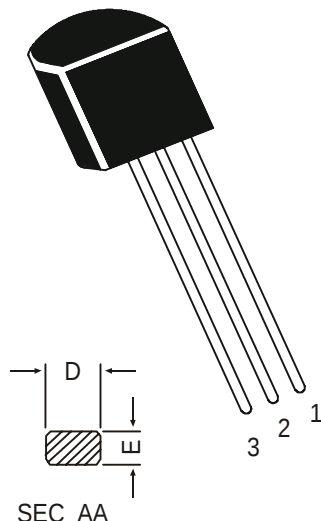
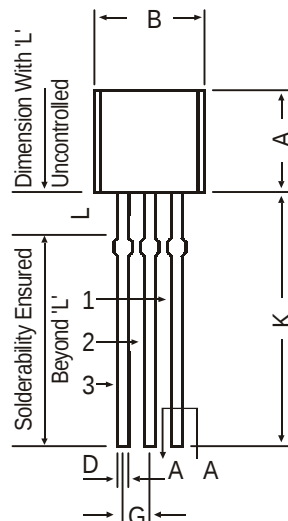
### ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

| DESCRIPTION                 | SYMBOL         | TEST CONDITION                    | Min  | Max  | UNITS |
|-----------------------------|----------------|-----------------------------------|------|------|-------|
| Collector Cut- off Current  | $I_{CBO}$      | $V_{CB}=20V, I_E=0$               |      | 500  | nA    |
| Collector Cut - off Current | $I_{CBO}$      | $V_{CB}=20V, I_E=0$<br>Ta =150 °C |      | 4.0  | μA    |
| EmitterCut off Current      | $I_{EBO}$      | $V_{EB}=4V, I_C=0$                |      | 500  | nA    |
| Base Emitter Voltage        | $V_{BE(ON)}$   | $V_{CE}=10V, I_C=1mA$             | 0.65 | 0.74 | V     |
| DC Current Gain             | $h_{FE} *$     | $I_C=1mA, V_{CE}=10V$             |      |      |       |
|                             | <b>BF494</b>   |                                   | 67   | 221  |       |
|                             | <b>BF494A</b>  |                                   | 200  | 500  |       |
|                             | <b>BF494B</b>  |                                   | 110  | 215  |       |
|                             | <b>BF 495</b>  |                                   | 35   | 125  |       |
|                             | <b>BF 495C</b> |                                   | 65   | 135  |       |
|                             | <b>BF 495D</b> |                                   | 40   | 85   |       |

**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)**

| DESCRIPTION                    | SYMBOL   | TEST CONDITION                                              | Min | Max | UNITS |
|--------------------------------|----------|-------------------------------------------------------------|-----|-----|-------|
| <b>DYNAMIC CHARACTERISTICS</b> |          |                                                             |     |     |       |
| Transition Frequency           | $f_T$    | $I_C=1\text{mA}$ , $V_{CE}=10\text{V}$                      | 120 |     | MHz   |
| Feedback Capacitance           | $C_{re}$ | $V_{CE}=10\text{V}$ , $I_C=1\text{mA}$<br>$f=4.5\text{MHz}$ |     | 1.0 | pF    |

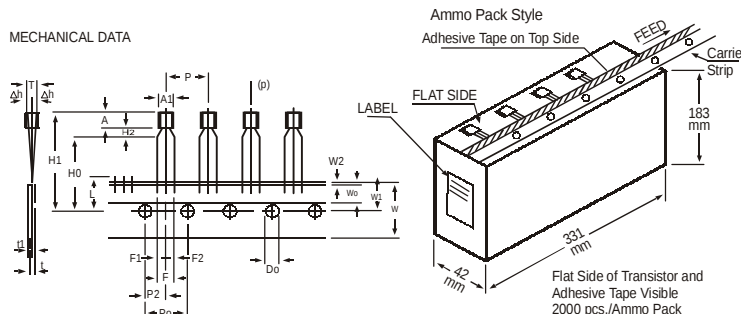
**\* $V_{BE}$  decreases by about 1.7mV/K with increasing temperature.**

**BF494**  
**BF495**
**TO-92**  
**Plastic Package**
**TO-92 Plastic Package**
**TO-92 Transistors on Tape and Ammo Pack**

**PIN CONFIGURATION**

1. BASE
2. EMITTER
3. COLLECTOR

| DIM | MIN.  | MAX.  |
|-----|-------|-------|
| A   | 4.32  | 5.33  |
| B   | 4.45  | 5.20  |
| C   | 3.18  | 4.19  |
| D   | 0.41  | 0.55  |
| E   | 0.35  | 0.50  |
| F   | 5 DEG |       |
| G   | 1.14  | 1.40  |
| H   | 1.14  | 1.53  |
| K   | 12.70 | —     |
| L   | 1.982 | 2.082 |

All dimensions in mm.



All dimensions in mm unless specified otherwise

| ITEM                                 | SYMBOL | SPECIFICATION |      |       |           | REMARKS                                |
|--------------------------------------|--------|---------------|------|-------|-----------|----------------------------------------|
|                                      |        | MIN.          | NOM. | MAX.  | TOL.      |                                        |
| BODY WIDTH                           | A1     | 4.0           |      | 4.8   |           |                                        |
| BODY HEIGHT                          | A      | 4.8           |      | 5.2   |           |                                        |
| BODY THICKNESS                       | T      | 3.9           |      | 4.2   |           |                                        |
| PITCH OF COMPONENT                   | P      |               | 12.7 |       | ±1        |                                        |
| FEED HOLE PITCH                      | P0     |               | 12.7 |       | ±0.3      |                                        |
| FEED HOLE CENTRE TO COMPONENT CENTRE | P2     |               | 6.35 |       | ±0.4      | CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH |
| DISTANCE BETWEEN OUTER LEADS         | F      |               | 5.08 |       | +0.6 -0.2 | TO BE MEASURED AT BOTTOM OF CLINCH     |
| COMPONENT ALIGNMENT                  | Δh     |               | 0    | 1     |           | AT TOP OF BODY                         |
| TAPE WIDTH                           | W      |               | 18   |       | ±0.5      |                                        |
| HOLD-DOWN TAPE WIDTH                 | W0     |               | 6    |       | ±0.2      |                                        |
| HOLE POSITION                        | W1     |               | 9    |       | +0.7 -0.5 |                                        |
| HOLD-DOWN TAPE POSITION              | W2     |               | 0.5  |       | ±0.2      |                                        |
| LEAD WIRE CLINCH HEIGHT              | H0     |               | 16   |       | ±0.5      |                                        |
| COMPONENT HEIGHT                     | H1     |               |      | 23.25 |           |                                        |
| LENGTH OF SNIPPED LEADS              | L      |               |      | 11.0  |           |                                        |
| FEED HOLE DIAMETER                   | D0     |               | 4    |       | ±0.2      |                                        |
| TOTAL TAPE THICKNESS                 | t      |               |      | 1.2   |           | ±1 0.3 - 0.6                           |
| LEAD - TO - LEAD DISTANCE F1         | F2     |               | 2.54 |       | +0.4 -0.1 |                                        |
| CLINCH HEIGHT                        | H2     |               |      | 3     |           |                                        |
| PULL - OUT FORCE                     | (P)    | 6N            |      |       |           |                                        |

**NOTES**

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.

**Packing Detail**

| PACKAGE    | STANDARD PACK |                | INNER CARTON BOX  |     | OUTER CARTON BOX  |     |          |
|------------|---------------|----------------|-------------------|-----|-------------------|-----|----------|
|            | Details       | Net Weight/Qty | Size              | Qty | Size              | Qty | Gr Wt    |
| TO-92 Bulk | 1K/polybag    | 200 gm/1K pcs  | 3" x 7.5" x 7.5"  | 5K  | 17" x 15" x 13.5" | 80K | 23 kgs   |
| TO-92 T&A  | 2K/ammo box   | 645 gm/2K pcs  | 12.5" x 8" x 1.8" | 2K  | 17" x 15" x 13.5" | 32K | 12.5 kgs |

### Disclaimer

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