



# BD 241 · BD 241A · BD 241B

NPN SILICON EPITAXIAL BASE POWER TRANSISTORS

## MICRO ELECTRONICS

CASE TO-220B

THE BD 241, BD 241A AND BD 241B ARE NPN SILICON EPITAXIAL BASE POWER TRANSISTORS DESIGNED FOR SWITCHING, DRIVER AND OUTPUT STAGES IN AUDIO AMPLIFIERS. THE BD 241, BD 241A AND BD 241B ARE COMPLEMENTARY TO BD 242, BD 242A AND BD 242B RESPECTIVELY.

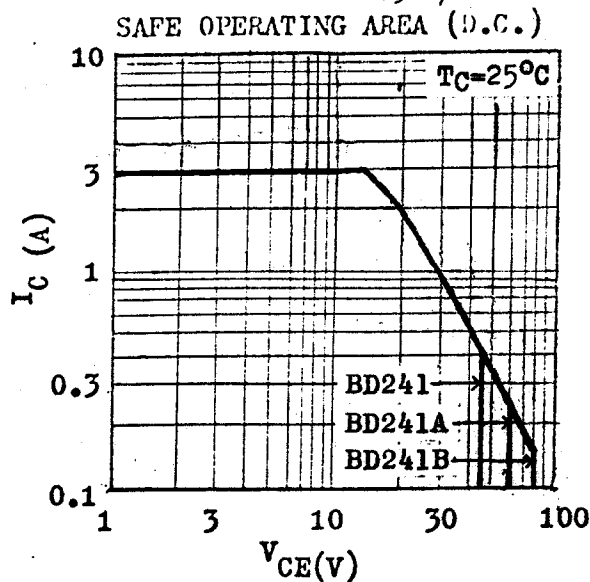
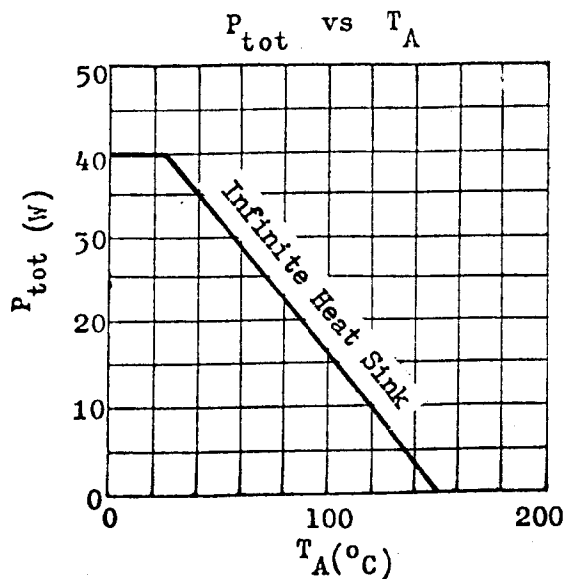


### ABSOLUTE MAXIMUM RATINGS

|  |                | BD241 | BD241A        | BD241B |
|--|----------------|-------|---------------|--------|
| Collector-Emitter Voltage ( $R_{BE}=100\Omega$ ) | $V_{CER}$      | 55V   | 70V           | 90V    |
| Collector-Emitter Voltage ( $I_B=0$ )            | $V_{CEO}$      | 45V   | 60V           | 80V    |
| Emitter-Base Voltage                             | $V_{EBO}$      |       | 5V            |        |
| Collector Current                                | $I_C$          |       | 3A            |        |
| Base Current                                     | $I_B$          |       | 1A            |        |
| Total Power Dissipation @ $T_C \leq 25^\circ C$  | $P_{tot}$      |       | 40W           |        |
| @ $T_A \leq 25^\circ C$                          |                |       | 2W            |        |
| Junction and Storage Temperature                 | $T_j, T_{stg}$ |       | -55 to +150°C |        |

### THERMAL RESISTANCE

|                     |               |          |      |
|---------------------|---------------|----------|------|
| Junction to Case    | $\theta_{jc}$ | 3.12°C/W | max. |
| Junction to Ambient | $\theta_{ja}$ | 62.5°C/W | max. |



## MICRO ELECTRONICS LTD.

38 HUNG TO ROAD, KWUN TONG, HONG KONG. TELEX #3510  
 KWUN TONG P. O. BOX 69477 CABLE ADDRESS "MICROTRON"  
 TELEPHONE: 3-430181-6, 3-893363, 3-892423, 3-898221  
 FAX: 3-410321

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| PARAMETER                            | SYMBOL          | MIN | MAX | UNIT | TEST CONDITIONS                     |
|--------------------------------------|-----------------|-----|-----|------|-------------------------------------|
| Collector-Emitter Breakdown Voltage  | $V_{CEO}^*$     |     |     |      | $I_C=30mA$ $I_B=0$                  |
| BD241                                |                 | 45  |     | V    |                                     |
| BD241A                               |                 | 60  |     | V    |                                     |
| BD241B                               |                 | 80  |     | V    |                                     |
| Collector Cutoff Current             | $I_{CEO}$       |     | 0.3 | mA   | $V_{CE}=30V$ $I_B=0$                |
| BD241, BD241A                        |                 |     | 0.3 | mA   | $V_{CE}=60V$ $I_B=0$                |
| BD241B                               |                 |     |     |      |                                     |
| Collector Cutoff Current             | $I_{CES}$       |     | 0.2 | mA   | $V_{CE}=45V$ $V_{BE}=0$             |
| BD241A                               |                 |     | 0.2 | mA   | $V_{CE}=60V$ $V_{BE}=0$             |
| BD241B                               |                 |     | 0.2 | mA   | $V_{CE}=80V$ $V_{BE}=0$             |
| Emitter Cutoff Current               | $I_{EBO}$       |     | 1   | mA   | $V_{EB}=5V$ $I_C=0$                 |
| Base-Emitter Voltage                 | $V_{BE}^*$      |     | 1.8 | V    | $I_C=3A$ $V_{CE}=4V$                |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}^*$ |     | 1.2 | V    | $I_C=3A$ $I_B=0.6A$                 |
| D.C. Current Gain                    | $H_{FE}^*$      | 25  |     |      | $I_C=1A$ $V_{CE}=4V$                |
|                                      |                 | 10  |     |      | $I_C=3A$ $V_{CE}=4V$                |
| Small Signal Current Gain            | $h_{fe}$        | 20  |     |      | $I_C=0.5A$ $V_{CE}=10V$<br>$f=1kHz$ |
| Current Gain-Bandwidth Product       | $f_T$           | 3   |     | MHz  | $I_C=0.5A$ $V_{CE}=10V$             |

\* Pulse Test : Pulse Width=0.3mS, Duty Cycle=1%

