

### DESCRIPTION

- DC Current Gain  $-h_{FE} = 25(\text{Min})@ I_C = 1.0\text{A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = 45\text{V}(\text{Min})$ - BD241;  $60\text{V}(\text{Min})$ - BD241A  
80V(Min)- BD241B;  $100\text{V}(\text{Min})$ - BD241C
- Complement to Type BD242/A/B/C

### APPLICATIONS

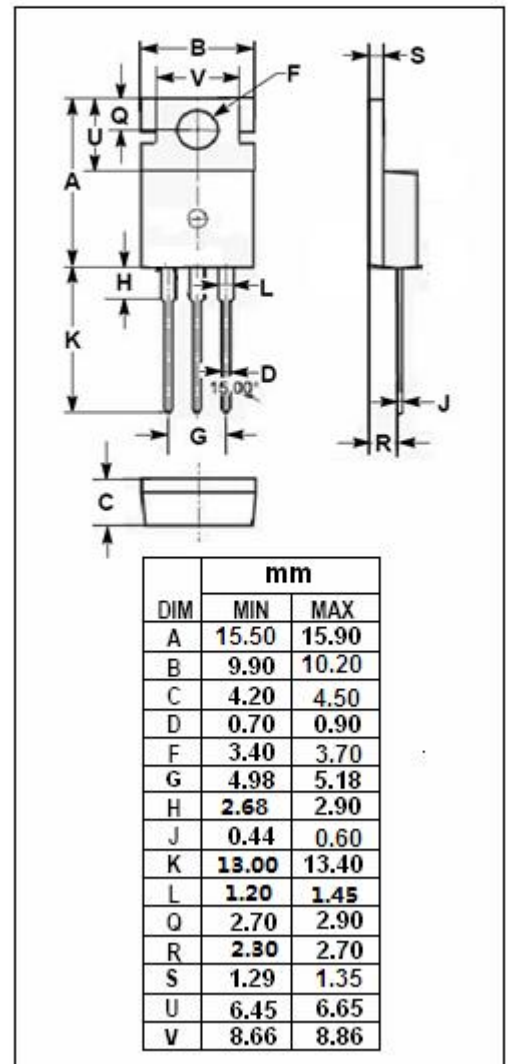
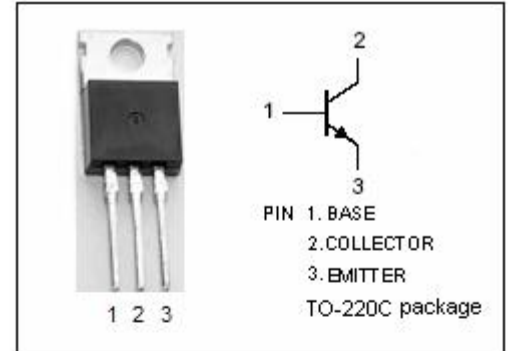
- Designed for use in general purpose power amplifier and switching applications

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

| SYMBOL    | PARAMETER                                               | VALUE   | UNIT             |
|-----------|---------------------------------------------------------|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                  | BD241   | 55               |
|           |                                                         | BD241A  | 70               |
|           |                                                         | BD241B  | 90               |
|           |                                                         | BD241C  | 115              |
| $V_{CEO}$ | Collector-Emitter Voltage                               | BD241   | 45               |
|           |                                                         | BD241A  | 60               |
|           |                                                         | BD241B  | 80               |
|           |                                                         | BD241C  | 100              |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 5       | V                |
| $I_C$     | Collector Current-Continuous                            | 3.0     | A                |
| $I_{CM}$  | Collector Current-Peak                                  | 5.0     | A                |
| $I_B$     | Base Current                                            | 1.0     | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C=25^\circ\text{C}$ | 40      | W                |
| $T_J$     | Junction Temperature                                    | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                               | -65~150 | $^\circ\text{C}$ |

### THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                            | MAX   | UNIT               |
|---------------|--------------------------------------|-------|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 3.125 | $^\circ\text{C/W}$ |



## SPTECH Silicon NPN Power Transistor

## BD241/A/B/C

## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            |          | CONDITIONS                                                         | MIN | MAX | UNIT |
|----------------|--------------------------------------|----------|--------------------------------------------------------------------|-----|-----|------|
| $V_{CEQ(SUS)}$ | Collector-Emitter Sustaining Voltage | BD241    | $I_C = 30\text{mA}; I_B = 0$                                       | 45  |     | V    |
|                |                                      | BD241A   |                                                                    | 60  |     |      |
|                |                                      | BD241B   |                                                                    | 80  |     |      |
|                |                                      | BD241C   |                                                                    | 100 |     |      |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage |          | $I_C = 3\text{A}; I_B = 0.6\text{A}$                               |     | 1.2 | V    |
| $V_{BE(on)}$   | Base-Emitter On Voltage              |          | $I_C = 3\text{A}; V_{CE} = 4\text{V}$                              |     | 1.8 | V    |
| $I_{CES}$      | Collector Cutoff Current             | BD241    | $V_{CE} = 45\text{V}; V_{BE} = 0$                                  |     | 0.2 | mA   |
|                |                                      | BD241A   | $V_{CE} = 60\text{V}; V_{BE} = 0$                                  |     |     |      |
|                |                                      | BD241B   | $V_{CE} = 80\text{V}; V_{BE} = 0$                                  |     |     |      |
|                |                                      | BD241C   | $V_{CE} = 100\text{V}; V_{BE} = 0$                                 |     |     |      |
| $I_{CEO}$      | Collector Cutoff Current             | BD241/A  | $V_{CE} = 30\text{V}; I_B = 0$                                     |     | 0.3 | mA   |
|                |                                      | BD241B/C | $V_{CE} = 60\text{V}; I_B = 0$                                     |     |     |      |
| $I_{EBO}$      | Emitter Cutoff Current               |          | $V_{EB} = 5\text{V}; I_C = 0$                                      |     | 1.0 | mA   |
| $h_{FE-1}$     | DC Current Gain                      |          | $I_C = 1\text{A}; V$                                               | 25  |     |      |
| $h_{FE-2}$     | DC Current Gain                      |          | $I_C = 3\text{A}; V_{CE} = 4\text{V}$                              | 10  |     |      |
| $f_T$          | Current-Gain—Bandwidth Product       |          | $I_C = 0.5\text{A}; V_{CE} = 10\text{V}, f_{test} = 1.0\text{MHz}$ | 3.0 |     | MHz  |