

**NPN Silicon Power Transistor**

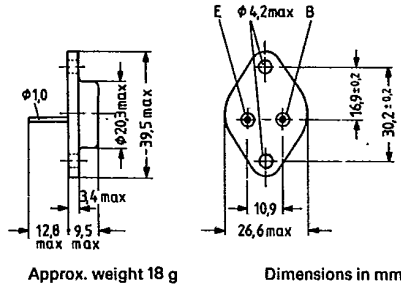
**BU 205**

SIEMENS AKTIENGESELLSCHAFT 04838 D

BU 205 is a triple diffused silicon NPN power switching transistor in a TO 3 case (3 B 2 DIN 41872). It is outstanding for short switching times and high dielectric strength. It is intended for use in horizontal deflection output stages for color TV receivers.

The collector is electrically connected to the case.

| Type   | Ordering code |
|--------|---------------|
| BU 205 | Q68000-A751   |



**Maximum ratings**

|  |           |             |                 |
|--|-----------|-------------|-----------------|
| Collector-emitter voltage                              | $V_{CES}$ | 1500        | V <sup>1)</sup> |
| Collector-emitter voltage ( $R_{BE} < 100 \Omega$ )    | $V_{CER}$ | 1500        | V               |
| Collector-emitter voltage                              | $V_{CEO}$ | 700         | V               |
| Collector current                                      | $I_C$     | 2.5         | A               |
| Collector peak current                                 | $I_{CM}$  | 3           | A <sup>2)</sup> |
| Base peak current                                      | $I_{BM}$  | 2.5         | A               |
| Negative base current                                  | $-I_B$    | 0.1         | A               |
| Negative base peak current                             | $-I_{BM}$ | 1.5         | A               |
| Junction temperature                                   | $T_j$     | 115         | °C              |
| Storage temperature range                              | $T_{stg}$ | -65 to +115 | °C              |
| Total power dissipation ( $T_{case} \leq 90^\circ C$ ) | $P_{tot}$ | 10          | W               |

**Thermal resistance**

|                  |            |            |     |
|------------------|------------|------------|-----|
| Junction to case | $R_{thJC}$ | $\leq 2.5$ | K/W |
|------------------|------------|------------|-----|

1) Max. 1650 V are permitted in case of picture tube spark-overs.  
 2) Max. 5 A are permitted in case of picture tube spark-overs.

**Static characteristics**

|   |               |            |    |
|---|---------------|------------|----|
| Collector cutoff current<br>( $V_{CE} = 1500 \text{ V}$ ; $V_{BE} = 0$ )                            | $I_{CES}$     | $\leq 1$   | mA |
| Emitter-base breakdown voltage<br>( $I_E = 10 \text{ mA}$ ; $I_C = 0$ )                             | $V_{(BR)EBO}$ | $\geq 5$   | V  |
| ( $I_E = 100 \text{ mA}$ ; $I_C = 0$ )  | $V_{(BR)EBO}$ | $\geq 7$   | V  |
| Collector-emitter breakdown voltage<br>( $I_C = 100 \text{ mA}$ ; $I_B = 0$ ; $L = 25 \text{ mH}$ ) | $V_{(BR)CEO}$ | $\geq 700$ | V  |
| Collector-emitter saturation voltage<br>( $I_C = 2 \text{ A}$ ; $I_B = 1 \text{ A}$ )               | $V_{CEsat}$   | $\leq 5$   | V  |
| Base-emitter saturation voltage<br>( $I_C = 2 \text{ A}$ ; $I_B = 1 \text{ A}$ )                    | $V_{BEsat}$   | $\leq 1.5$ | V  |
| DC current gain<br>( $V_{CE} = 5 \text{ V}$ ; $I_C = 2 \text{ A}$ )                                 | $h_{FE}$      | $> 2$      | -  |

**Dynamic characteristics**

|   |           |      |               |
|---|-----------|------|---------------|
| Transition frequency<br>( $V_{CE} = 5 \text{ V}$ ; $I_C = 0.1 \text{ A}$ ; $f = 5 \text{ MHz}$ )      | $f_T$     | 7.5  | MHz           |
| Collector-base capacitance<br>( $V_{CB} = 10 \text{ V}$ ; $I_E = 0 \text{ A}$ ; $f = 1 \text{ MHz}$ ) | $C_{CBO}$ | 65   | pF            |
| Switching time:<br>( $I_C = 2 \text{ A}$ ; $I_B = 1 \text{ A}$ )                                      | $t_f$     | 0.75 | $\mu\text{s}$ |