

# PU3210, PU4210, PU4510 ■ Package Dimensions

## Silicon NPN Epitaxial Planar Type

Power Amplifier, Switching

Complementary Pair with PU3110, PU4110, PU4410

### ■ Features

- Low collector-emitter saturation voltage ( $V_{CE(sat)}$ )
- Good linearity of DC current gain ( $h_{FE}$ )
- High collector current ( $I_C$ )
- PU3210: 3 NPN elements
- PU4210: 4 NPN elements
- PU4510: 2 NPN elements  $\times$  2 (4 elements in total)

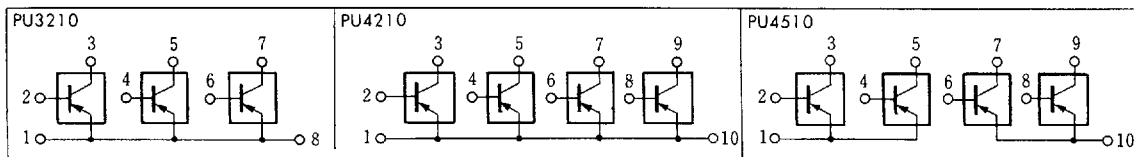
### ■ Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

| Item                      | Symbol    | Value      | Unit             |
|---------------------------|-----------|------------|------------------|
| Collector-base voltage    | $V_{CBO}$ | -60        | V                |
| Collector-emitter voltage | $V_{CEO}$ | -60        | V                |
| Emitter-base voltage      | $V_{EB0}$ | -6         | V                |
| Peak collector current    | $I_{CP}$  | -5         | A                |
| Collector current         | $I_C$     | -3         | A                |
| Power dissipation         | $P_D$     | 15         | W                |
| Junction temperature      | $T_J$     | 150        | $^\circ\text{C}$ |
| Storage temperature       | $T_{stg}$ | -55 ~ +150 | $^\circ\text{C}$ |

### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

| Item                            | Symbol        | Condition                                                       | min. | typ. | max. | Unit          |
|---------------------------------|---------------|-----------------------------------------------------------------|------|------|------|---------------|
| Collector cutoff current        | $I_{CES}$     | $V_{CE} = -60\text{V}, V_{BE} = 0$                              |      |      | -200 | $\mu\text{A}$ |
|                                 | $I_{CEO}$     | $V_{CE} = -30\text{V}, I_B = 0$                                 |      |      | -300 | $\mu\text{A}$ |
| Emitter cutoff current          | $I_{EBO}$     | $V_{EB} = -6\text{V}, I_C = 0$                                  |      |      | -1   | mA            |
| Collector-emitter voltage       | $V_{CEO}$     | $I_C = -30\text{mA}, I_B = 0$                                   | -60  |      |      | V             |
| DC current gain                 | $h_{FE1}$     | $V_{CE} = -4\text{V}, I_C = -1\text{A}$                         | 70   |      | 250  |               |
|                                 | $h_{FE2}$     | $V_{CE} = -4\text{V}, I_C = -3\text{A}$                         | 10   |      |      |               |
| Collector-emitter voltage       | $V_{BE}$      | $V_{CE} = -4\text{V}, I_C = -3\text{A}$                         |      |      | -1.8 | V             |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = -3\text{A}, I_B = -0.375\text{A}$                        |      |      | -1.2 | V             |
| Transition frequency            | $f_T$         | $V_{CE} = -10\text{V}, I_C = -0.5\text{A}, f = 10\text{MHz}$    |      | 30   |      | MHz           |
| Turn-on time                    | $t_{on}$      | $I_C = -1\text{A}, I_{B1} = -0.1\text{A}, I_{B2} = 0.1\text{A}$ |      | 0.5  |      | $\mu\text{s}$ |
| Storage time                    | $t_{stg}$     |                                                                 |      | 1.2  |      | $\mu\text{s}$ |
| Fall time                       | $t_f$         |                                                                 |      | 0.3  |      | $\mu\text{s}$ |

### ■ Inner Circuit



6932852 0017018 3T5

