



## TIP42C

## PNP PLANAR TRANSISTOR

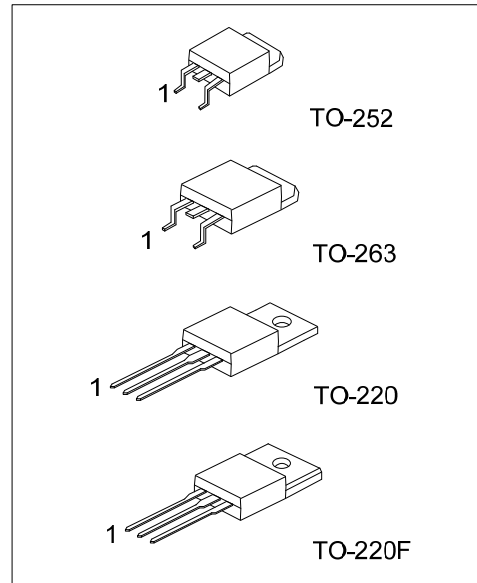
### PNP EPITAXIAL PLANAR TRANSISTOR

#### DESCRIPTION

The UTC **TIP42C** is a PNP epitaxial planar transistor, designed for using in general purpose amplifier and switching applications.

#### FEATURES

\* Complement to TIP41C



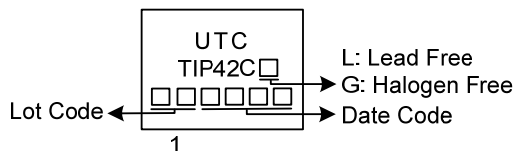
#### ORDERING INFORMATION

| Ordering Number |                 | Package | Pin Assignment |   |   | Packing   |
|-----------------|-----------------|---------|----------------|---|---|-----------|
| Lead Free       | Halogen Free    |         | 1              | 2 | 3 |           |
| TIP42CL-x-TA3-T | TIP42CG-x-TA3-T | TO-220  | B              | C | E | Tube      |
| TIP42CL-x-TF3-T | TIP42CG-x-TF3-T | TO-220F | B              | C | E | Tube      |
| TIP42CL-x-TN3-R | TIP42CG-x-TN3-R | TO-252  | B              | C | E | Tape Reel |
| TIP42CL-x-TN3-T | TIP42CG-x-TN3-T | TO-252  | B              | C | E | Tube      |
| TIP42CL-x-TQ2-R | TIP42CG-x-TQ2-R | TO-263  | B              | C | E | Tape Reel |
| TIP42CL-x-TQ2-T | TIP42CG-x-TQ2-T | TO-263  | B              | C | E | Tube      |

Note: Pin Assignment: B: Base C: Case E: Emitter

|                        |  |
|------------------------|--|
| <p>TIP42CG-x-TA3-T</p> | <p>(1) T: Tube, R: Tape Reel<br/> (2) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ2: TO-263<br/> (3) x: refer to Classification of <math>h_{FE2}</math><br/> (4) G: Halogen Free and Lead Free, L: Lead Free</p> |
|------------------------|--|

#### MARKING



■ ABSOLUTE MAXIMUM RATING (unless otherwise specified)

| PARAMETER  |               | SYMBOL    | RATINGS    | UNIT             |
|--|---------------|-----------|------------|------------------|
| Collector Base Voltage                           |               | $V_{CBO}$ | -100       | V                |
| Collector to Emitter Voltage                     |               | $V_{CEO}$ | -100       | V                |
| Emitter-Base Voltage                             |               | $V_{EBO}$ | -5         | V                |
| Collector Current (DC)                           |               | $I_C$     | -6         | A                |
| Collector Current (Pulse)                        |               | $I_C$     | -10        | A                |
| Base Current                                     |               | $I_B$     | -2         | A                |
| Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | TO-220/TO-263 | $P_C$     | 65         | W                |
|  | TO-220F       |           | 22         |                  |
|  | TO-252        |           | 20         |                  |
| Junction Temperature                             |               | $T_J$     | +150       | $^\circ\text{C}$ |
| Storage Temperature                              |               | $T_{STG}$ | -65 ~ +150 | $^\circ\text{C}$ |

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ )

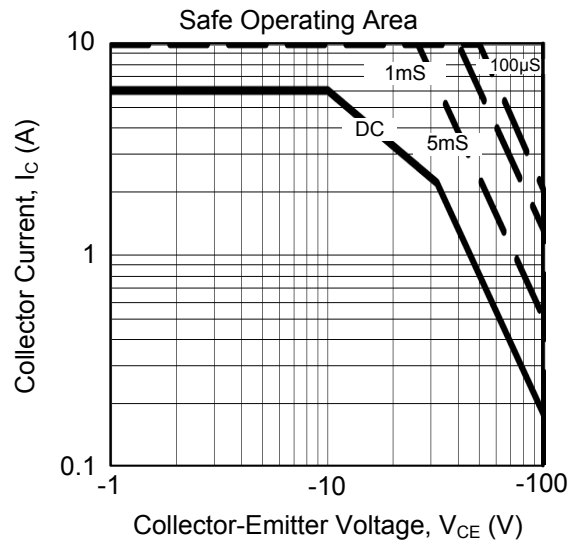
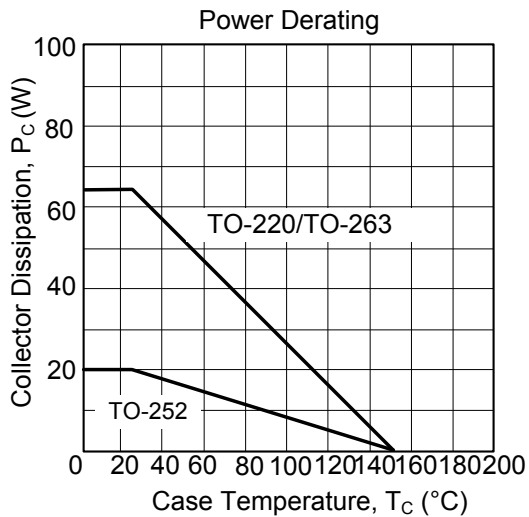
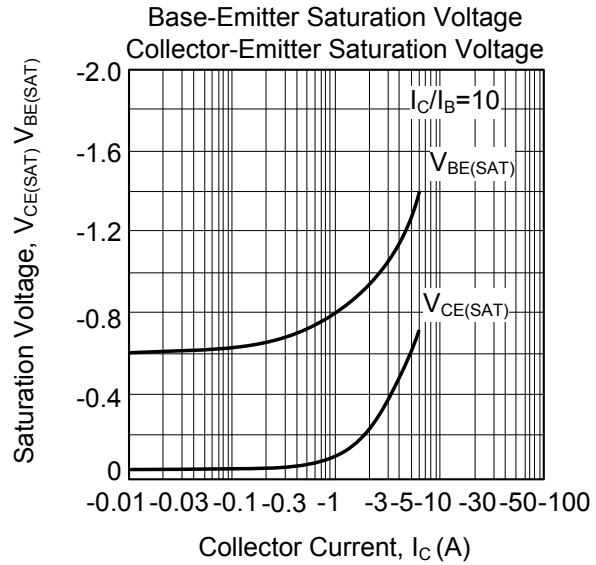
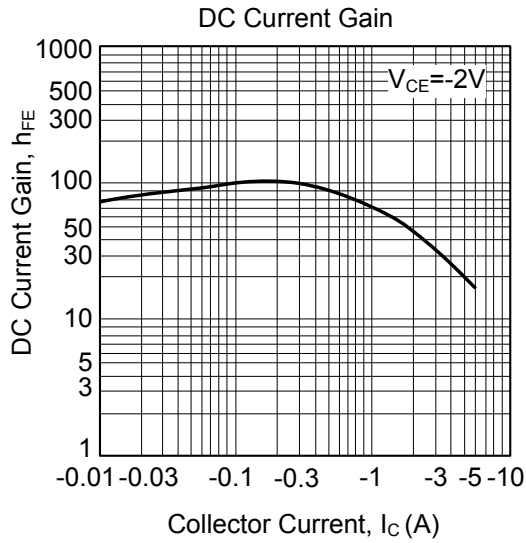
| PARAMETER                                   | SYMBOL        | TEST CONDITIONS  | MIN  | TYP | MAX  | UNIT          |
|---|---------------|--|------|-----|------|---------------|
| Collector-Emitter Breakdown Voltage (Note)  | $BV_{CEO}$    | $I_C=-30\text{mA}, I_B=0$                              | -100 |     |      | V             |
| Collector Cutoff Current                    | $I_{CEO}$     | $V_{CE}=-60\text{V}, I_B=0$                            |      |     | -0.7 | mA            |
| Collector Cutoff Current                    | $I_{CES}$     | $V_{CE}=-100\text{V}, V_{EB}=0$                        |      |     | -400 | $\mu\text{A}$ |
| Emitter Cutoff Current                      | $I_{EBO}$     | $V_{BE}=-5\text{V}, I_C=0$                             |      |     | -1   | mA            |
| Collector-Emitter Saturation Voltage (Note) | $V_{CE(SAT)}$ | $I_C=-6\text{A}, I_B=-600\text{mA}$                    |      |     | -1.5 | V             |
| Base-Emitter on Voltage (Note)              | $V_{BE(ON)}$  | $V_{CE}=-4\text{V}, I_C=-6\text{A}$                    |      |     | -2.0 | V             |
| DC Current Gain (Note)                      | $h_{FE1}$     | $V_{CE}=-4\text{V}, I_C=-300\text{mA}$                 | 30   |     |      |               |
|   | $h_{FE2}$     | $V_{CE}=-4\text{V}, I_C=-3\text{A}$                    | 15   |     | 75   |               |
| Current Gain Bandwidth Product              | $f_T$         | $V_{CE}=-10\text{V}, I_C=-500\text{mA}, f=1\text{MHz}$ | 3    |     |      | MHz           |

Note: Pulse Test:  $P_w \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

■ CLASSIFICATION OF  $h_{FE2}$

| RANK  | A     | B     | C     |
|-------|-------|-------|-------|
| RANGE | 15~30 | 28~48 | 45~75 |

### TYPICAL CHARACTERISTICS



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