



UD3018

Preliminary

NPN EPITAXIAL SILICON TRANSISTOR

NPN POWER BIPOLAR TRANSISTORS

DESCRIPTION

The UTC **UD3018** is an NPN transistor. it uses UTC's advanced technology to provide customers with high collector-emitter breakdown voltage and high frequency, etc.

The UTC **UD3018** is suitable for professional audio amplifiers and high-end consumer audio products, etc.

FEATURES

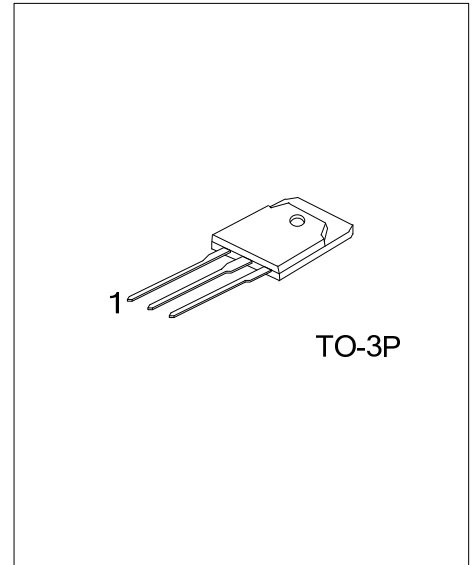
- * High collector-emitter breakdown voltage
- * High frequency
- * Excellent gain linearity

ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|---------------|---------|----------------|---|---|---------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| UD3018L-T3P-T | UD3018G-T3P-T | TO-3P | B | C | E | Tube |

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

| | | |
|-------------------|--|--|
| UD3018L-T3P-T | (1) Packing Type (2) Package Type (3) Halogen Free | (1) T: Tube (2) T3P: TO-3P (3) L: Lead Free, G: Halogen Free |
|-------------------|--|--|



■ ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|-----------|----------|------------------|
| Collector-Base Voltage | V_{CBO} | 250 | V |
| Collector-Emitter Voltage | V_{CEO} | 250 | V |
| Emitter-Base Voltage | V_{EBO} | 5.0 | V |
| Collector-Emitter Voltage - 1.5V | V_{CEX} | 250 | V |
| Continuous Collector Current | I_C | 15 | A |
| Peak Collector Current (Note 1) | | 30 | A |
| Continuous Base Current | I_B | 1.5 | A |
| Total Power Dissipation @ $T_C=25^\circ\text{C}$ | P_D | 150 | W |
| Operating Junction Temperature | T_J | -65~+150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65~+150 | $^\circ\text{C}$ |

Notes: 1. Absolute maximum ratings are stress ratings only and functional device operation is not implied. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

2. Pulse Test: Pulse Width=5.0ms, Duty Cycle<10%.

■ THERMAL CHARACTERISTICS

| PARAMETER | SYMBOL | RATINGS | UNIT |
|------------------|---------------|---------|--------------------|
| Junction-to-Case | θ_{JC} | 0.83 | $^\circ\text{C/W}$ |

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

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|-----------------|---|-----|-----|-----|---------------|
| OFF CHARACTERISTICS | | | | | | |
| Collector-Emitter Sustaining Voltage | $BV_{CEO(SUS)}$ | $I_C=30\text{mA}, I_B=0$ | 250 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=250\text{V}, I_E=0$ | | | 10 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=5.0\text{V}, I_C=0$ | | | 5.0 | μA |
| ON CHARACTERISTICS | | | | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=5.0\text{A}, I_B=0.5\text{A}$ | | | 1.0 | V |
| DC Current Gain | h_{FE} | $I_C=0.5\text{A}, V_{CE}=5.0\text{V}$ | 75 | | 150 | |
| | | $I_C=1.0\text{A}, V_{CE}=5.0\text{V}$ | 75 | | 150 | |
| | | $I_C=3.0\text{A}, V_{CE}=5.0\text{V}$ | 75 | | 150 | |
| Base-Emitter On Voltage | $V_{BE(on)}$ | $I_C=5.0\text{A}, V_{CE}=5.0\text{V}$ | | | 1.2 | V |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Current-Gain-Bandwidth Product | f_T | $I_C=1.0\text{A}, V_{CE}=5.0\text{V}, f_{test}=1.0\text{MHz}$ | 30 | | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=10\text{V}, I_E=0, f_{test}=1.0\text{MHz}$ | | | 400 | pF |

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