



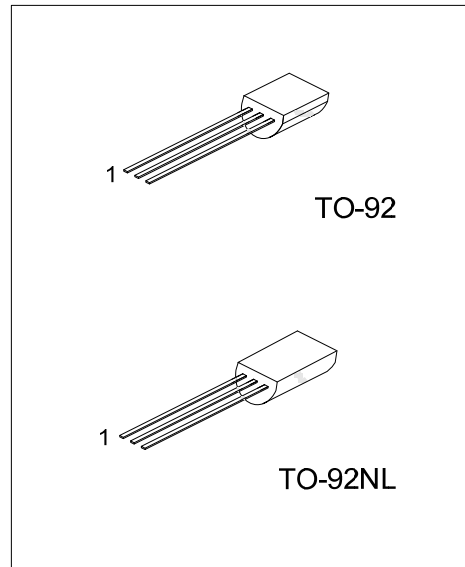
2SC2328A

NPN EPITAXIAL SILICON TRANSISTOR

AUDIO POWER AMPLIFIER

■ FEATURES

- * Collector Dissipation $P_c=1$ W
- * 3 W Output Application
- * Complement of 2SA928A



■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-------------------|-------------------|---------|----------------|---|---|----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SC2328AL-x-T92-B | 2SC2328AG-x-T92-B | TO-92 | E | C | B | Tape Box |
| 2SC2328AL-x-T92-K | 2SC2328AG-x-T92-K | TO-92 | E | C | B | Bulk |
| 2SC2328AL-x-T9N-K | 2SC2328AG-x-T9N-K | TO-92NL | E | C | B | Bulk |
| 2SC2328AL-x-T9N-B | 2SC2328AG-x-T9N-B | TO-92NL | E | C | B | Tape Box |

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

| | |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2SC2328AL-x-T92-K</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Free</p> | <p>(1) B: Tape Box, K: Bulk (2) T92: TO-92, T9N: TO-92NL (3) x: refer to Classification of h_{FE} (4) L: Lead Free, G: Halogen Free</p> |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|

■ MARKING

| TO-92 | TO-92NL |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <p>UTC C2328A □ □ □ □ Rank ← → Data Code 1</p> <p>L: Lead Free G: Halogen Free</p> | <p>UTC 2SC2328A □ □ □ □</p> <p>L: Lead Free G: Halogen Free Data Code ←</p> |

2SC2328A

NPN EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------------|-----------|------------|--------------------|
| Collector-Base Voltage | V_{CBO} | 30 | V |
| Collector-Emitter Voltage | V_{CEO} | 30 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Dissipation | TO-92 | 500 | mW |
| | TO-92NL | 625 | |
| Collector Current | I_C | 2 | A |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +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 ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|-------------------------------------------|-----|-----|-----|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C=100\mu\text{A}, I_E=0$ | 30 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C=10\text{mA}, I_B=0$ | 30 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E=1\text{mA}, I_C=0$ | 5 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=30\text{V}, I_E=0$ | | | 100 | nA |
| Emitter Cut-Off Current | I_{EBO} | $V_{BE}=5\text{V}, I_C=0$ | | | 100 | nA |
| DC Current Gain (Note) | h_{FE} | $V_{CE}=2\text{V}, I_C=500\text{mA}$ | 100 | | 320 | |
| Base-Emitter On Voltage | $V_{BE(ON)}$ | $V_{CE}=2\text{V}, I_C=500\text{mA}$ | | | 1 | V |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=1.5\text{A}, I_B=0.03\text{A}$ | | | 2 | V |
| Output Capacitance | C_{OB} | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | 30 | | pF |
| Current Gain Bandwidth Product | f_T | $V_{CE}=2\text{V}, I_C=500\text{mA}$ | | 120 | | MHz |

■ CLASSIFICATION OF h_{FE}

| RANK | O | Y |
|-------|---------|---------|
| RANGE | 100-200 | 160-320 |

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