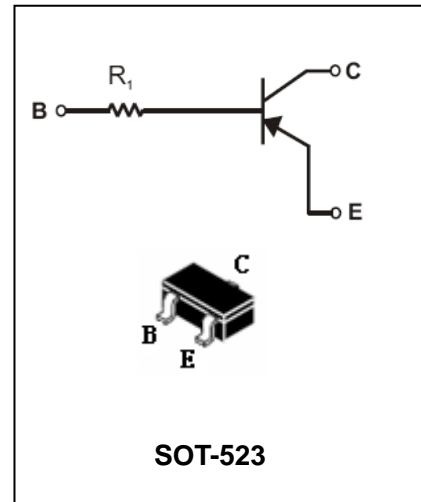


## Digital Transistor

## DTAXXTE

### FEATURES

- Epitaxial planar die construction.
- Complementary NPN types available(DTC).
- Built-in biasing resistors, $R_1$ only.
- Also available in lead free version.



### APPLICATIONS

- The PNP style digital transistor.

### ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| DTA114TE | 94      | SOT-523      |
| DTA143TE | 93      | SOT-523      |
| DTA144TE | 96      | SOT-523      |

### MAXIMUM RATING @ $T_a=25^{\circ}\text{C}$ unless otherwise specified

| Symbol             | Parameter                                   | Value       | Units                       |
|--------------------|---|-------------|-----------------------------|
| $V_{CBO}$          | Collector-Base Voltage                      | -50         | V                           |
| $V_{CEO}$          | Collector-Emitter Voltage                   | -50         | V                           |
| $V_{EBO}$          | Emitter-Base Voltage                        | -5          | V                           |
| $I_C(\text{Max.})$ | Collector Current                           | -100        | mA                          |
| $P_D$              | Power Dissipation                           | 150         | mW                          |
| $R_{\theta JA}$    | Thermal Resistance, Junction to Ambient Air | 625         | $^{\circ}\text{C}/\text{W}$ |
| $T_j, T_{stg}$     | Operating and Storage and Temperature Range | -55 to +150 | $^{\circ}\text{C}$          |

# Digital Transistor

# DTAXXTE

## ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter  | Symbol        | Test conditions   | MIN               | TYP             | MAX                | UNIT      |
|--|---------------|---|-------------------|-----------------|--------------------|-----------|
| Collector-Base breakdown Voltage   | $BV_{CBO}$    | $I_C = -50\mu A$  | -50               | -               | -                  | V         |
| Collector-Emitter breakdown Voltage                                      | $BV_{CEO}$    | $I_C = -1mA$  | -50               | -               | -                  | V         |
| Emitter-Base breakdown Voltage   | $BV_{EBO}$    | $I_E = -50\mu A$  | -5                | -               | -                  | V         |
| Collector cutoff Current   | $I_{CBO}$     | $V_{CB} = -50V$   | -                 | -               | -0.5               | $\mu A$   |
| Emitter cutoff Current   | $I_{EBO}$     | $V_{EB} = -4V$  | -                 | -               | -0.5               | $\mu A$   |
| Collector-Emitter saturation voltage<br>DTA114TE<br>DTA143TE<br>DTA144TE | $V_{CE(sat)}$ | $I_C/I_B = -10mA/-1mA$<br>$I_C/I_B = -5mA/-0.25mA$<br>$I_C/I_B = -5mA/-0.5mA$ | -                 | -               | -0.3               | V         |
| DC Current Gain  | $h_{FE}$      | $I_C = -1mA, V_{CE} = -5V$  | 100               | 250             | 600                |           |
| Input Resistor<br>DTA143TE<br>DTA114TE<br>DTA144TE                       | $R_1$         |   | 7<br>3.29<br>32.9 | 10<br>4.7<br>47 | 13<br>6.11<br>61.1 | $k\Omega$ |
| Input Resistor( $R_1$ )Tolerance   | $\Delta R_1$  | -   | -30               |                 | +30                | %         |
| Gain-Bandwidth Product   | $f_T$         | $V_{CE} = -10V, I_E = -5mA,$<br>$f = 100MHz$                                  | -                 | 250             | -                  | MHz       |

## TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

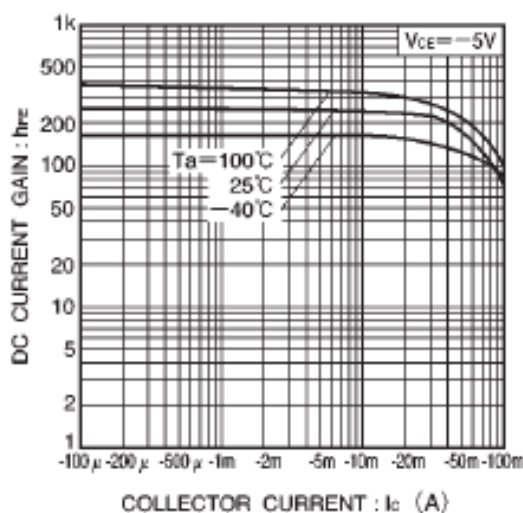


Fig.1 DC current gain vs. collector current

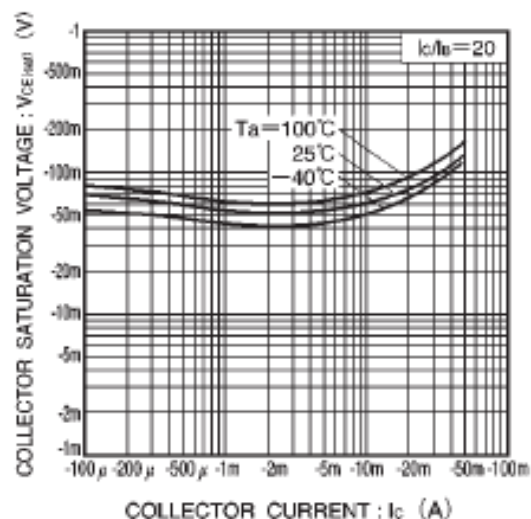


Fig.2 Collector-emitter saturation voltage vs. collector current

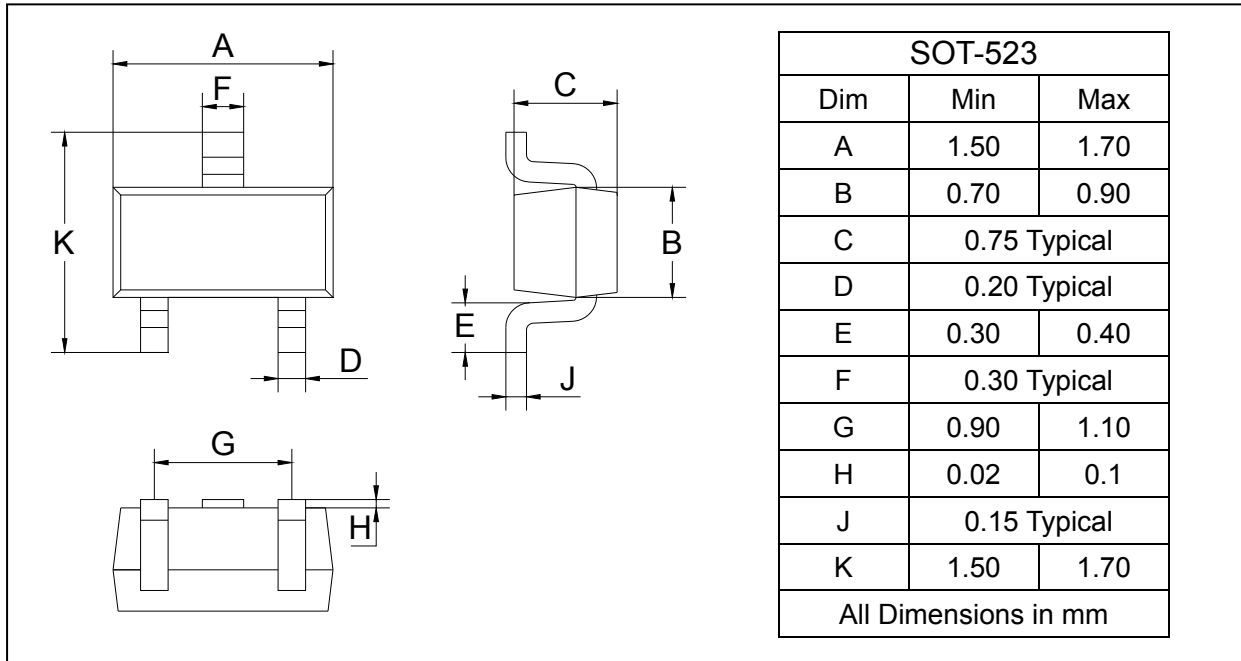
## Digital Transistor

## DTAXXTE

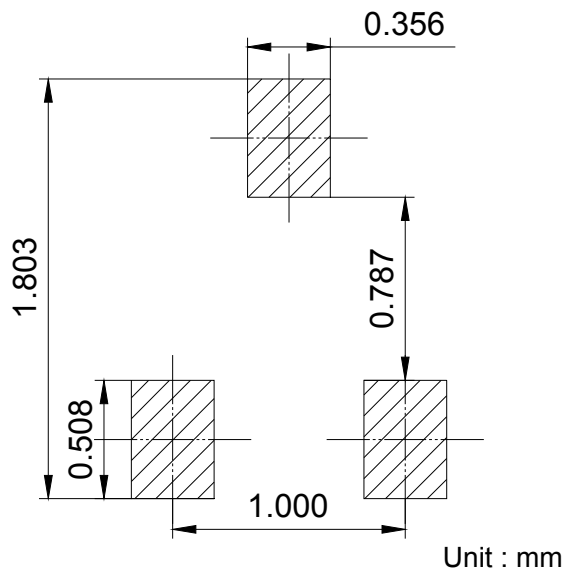
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-523



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

| Device               | Package | Shipping       |
|----------------------|---------|----------------|
| DTA114TE/143TE/144TE | SOT-523 | 3000/Tape&Reel |