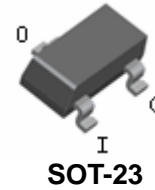
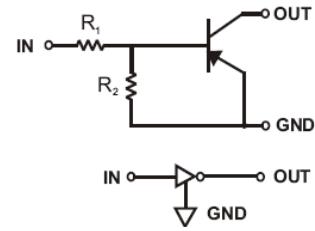


Digital Transistor

DTA($R_1 \neq R_2$ SERIES)CA

FEATURES

- Epitaxial planar die construction.
- Complementary NPN types available(DTC).
- Built-in biasing resistors, $R_1 \neq R_2$
- Also available in lead free version.



APPLICATIONS

- The PNP style digital transistor.

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|-----------|---------|--------------|
| DTA113ZCA | E11 | SOT-23 |
| DTA114WCA | 74 | SOT-23 |
| DTA114YCA | 54 | SOT-23 |
| DTA123JCA | E32 | SOT-23 |
| DTA123YCA | 52 | SOT-23 |
| DTA143XCA | 33 | SOT-23 |
| DTA143ZCA | E13 | SOT-23 |

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

| Symbol | Parameter | Value | Units | |
|--------------------|-------------------|---|---|----|
| V_{CC} | Supply Voltage | -50 | V | |
| V_{IN} | Input Voltage | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | +5 to -10 +10 to -30 +6 to -40 +5 to -12 +5 to -12 +7 to -20 +5 to 30 | V |
| I_O | Output Current | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | -100 -100 -70 -100 -100 -100 -100 | mA |
| $I_C(\text{Max.})$ | Output current | ALL | -100 | mA |
| P_D | Power Dissipation | 200 | mW | |

Digital Transistor

 DTA(R₁≠R₂ SERIES)CA

| Symbol | Parameter | Value | Units |
|-----------------------------------|---|-------------|-------|
| R _{θJA} | Thermal Resistance, Junction to Ambient Air | 625 | °C/W |
| T _j , T _{stg} | Operating and Storage and Temperature Range | -55 to +150 | °C |

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|-----------------|---|--|--|------|--|------|
| Input Voltage | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | V _{I(off)} V _{CC} =-5V, I _O =-100μA | -0.3 -0.8 -0.3 -0.5 -0.3 -0.3 -0.5 | - | - | V |
| Input Voltage | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | V _{I(on)} V _O =-0.3V, I _O =-20mA V _O =-0.3V, I _O =-2mA V _O =-0.3V, I _O =-1mA V _O =-0.3V, I _O =-5mA V _O =-0.3V, I _O =-20mA V _O =-0.3V, I _O =-20mA V _O =-0.3V, I _O =-5mA | - | - | -3.0 -3.0 -1.4 -1.1 -3.0 -2.5 -1.3 | V |
| Output Voltage | DTA123JCA DTA143ZCA DTA114YCA ALL Others | V _{O(on)} I _O /I _I =-5mA/-0.25mA I _O /I _I =-10mA/-0.5mA | - | -0.1 | -0.3 | V |
| Input Current | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | I _I V _I =-5V | - | - | -7.2 -0.88 -0.88 -3.6 -3.8 -1.8 -1.8 | mA |
| Output Current | | I _{O(off)} V _{CC} =-50V, V _I =0V | - | - | -0.5 | μA |
| DC Current Gain | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | G _I V _O =-5V, I _O =-10mA | 33 24 68 80 33 30 80 | - | - | |

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--|---|---|---|--|---|------|
| Input Resistor | DTA113ZCA DTA114WCA DTA114YCA DTA123JCA DTA123YCA DTA143XCA DTA143ZCA | R ₁ (R ₂) | 0.7 7 7 1.54 1.54 3.29 3.29 | 1(10) 10(4.7) 10(47) 2.2(47) 2.2(10) 4.7(10) 4.7(47) | 1.3 13 13 2.86 2.86 6.11 6.11 | kΩ |
| Input Resistor (R ₁) Tolerance | ΔR ₁ | - | -30 | | +30 | % |
| Resistance Ratio Tolerance | ΔR ₂ /R ₁ | - | -20 | | +20 | % |
| Gain-Bandwidth Product | f _T | V _{CE} =-10V, I _E =5mA, f=100MHz | - | 250 | - | MHz |

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

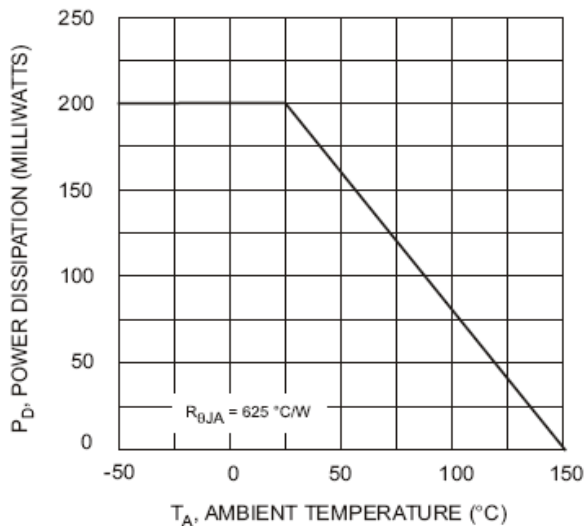


Fig. 1 Derating Curve

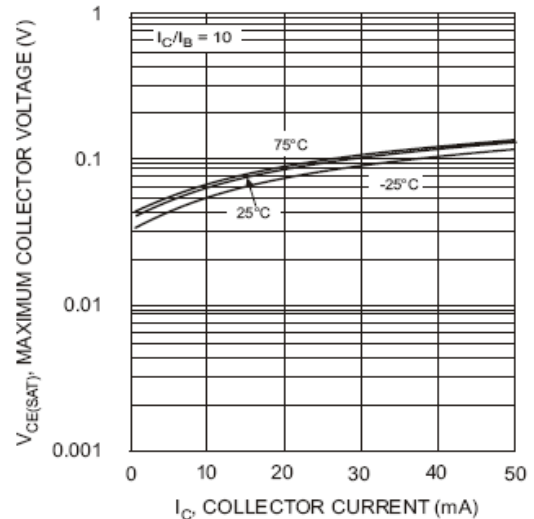


Fig. 2 V_{CE(SAT)} vs. I_C

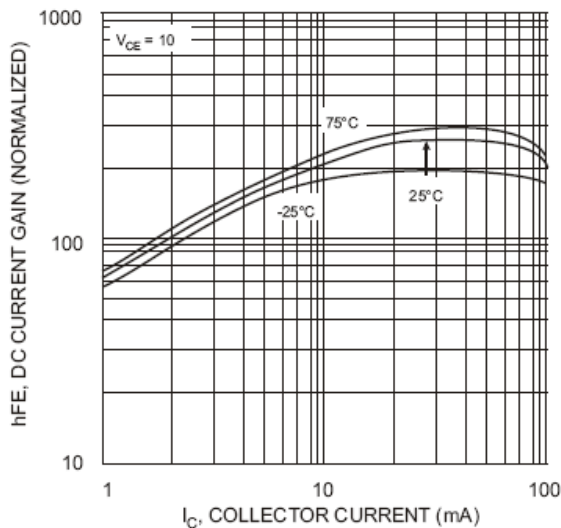


Fig. 3 DC CURRENT GAIN

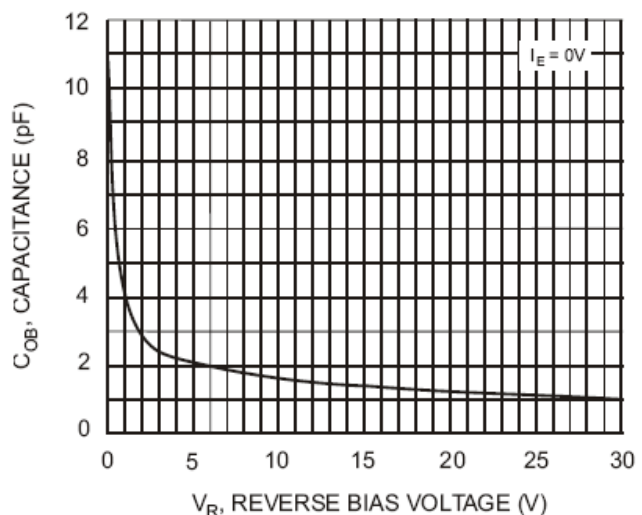


Fig. 4 Output Capacitance

Digital Transistor

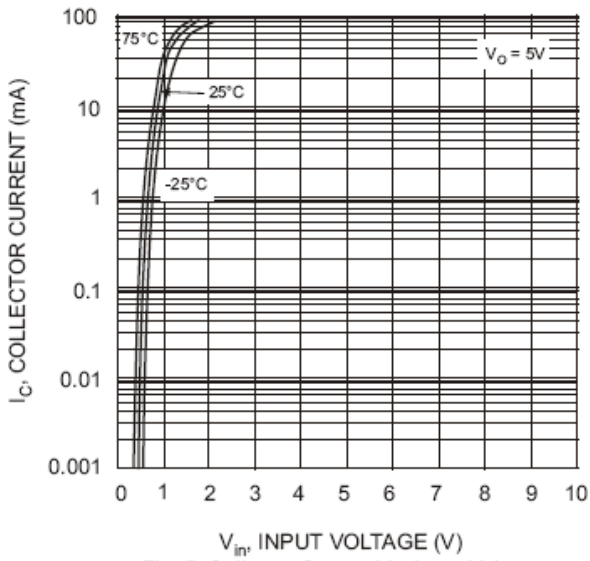


Fig. 5 Collector Current Vs. Input Voltage

DTA($R_1 \neq R_2$ SERIES)CA

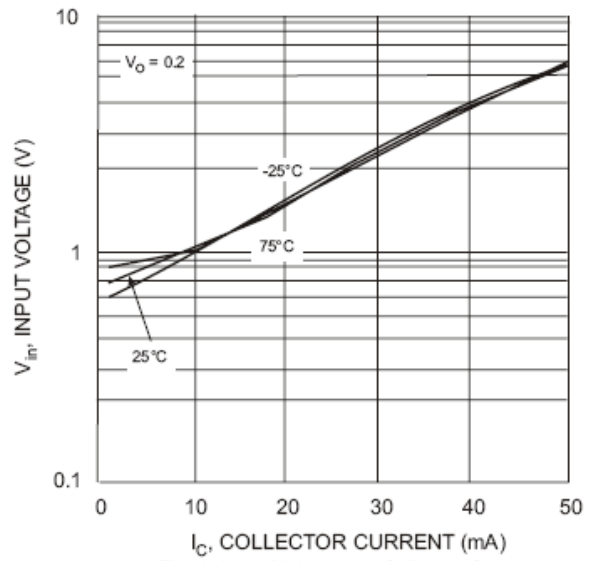
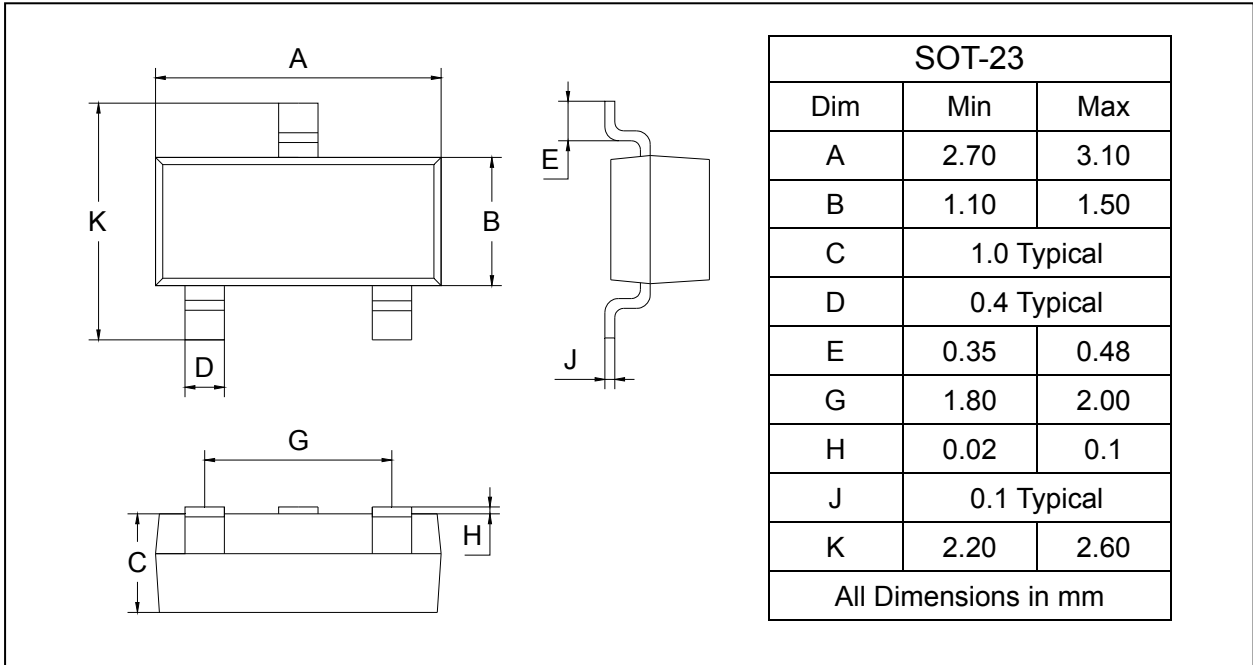


Fig. 6 Input Voltage vs. Collector Current

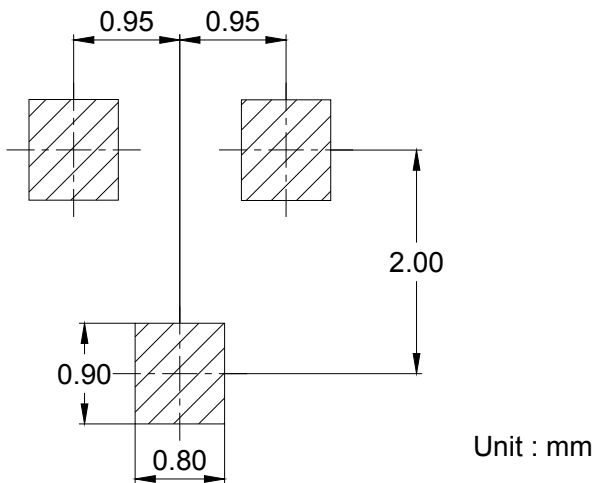
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

| Device | Package | Shipping |
|----------|---------|----------------|
| DTAXXXCA | SOT-23 | 3000/Tape&Reel |