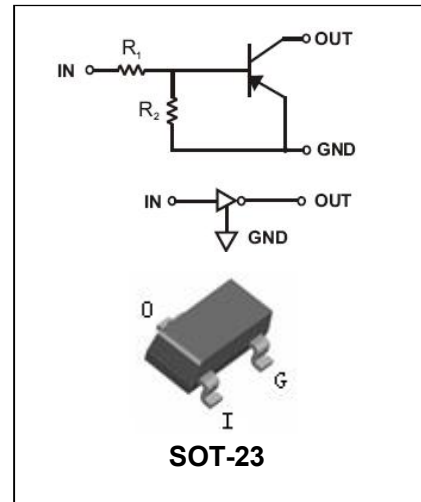


Digital Transistor

DTA(R₁=R₂ SERIES)CA

FEATURES

- Epitaxial planar die construction.
- Complementary NPN types available(DTC).
- Built-in biasing resistors,R₁=R₂.
- Also available in lead free version.



APPLICATIONS

- The PNP style digital transistor.

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|-----------|---------|--------------|
| DTA114ECA | 14 | SOT-23 |
| DTA124ECA | 15 | SOT-23 |
| DTA143ECA | 13 | SOT-23 |
| DTA144ECA | 16 | SOT-23 |

MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Symbol | Parameter | Value | Units | |
|-----------------------|--|-------------|------------|----|
| V _{CC} | Supply Voltage | -50 | V | |
| V _{IN} | Input Voltage | DTA114ECA | +10 to -40 | |
| | | DTA124ECA | +10 to -40 | |
| | | DTA143ECA | +10 to -30 | |
| | | DTA144ECA | +10 to -40 | |
| I _o | Output Current | DTA114ECA | -50 | |
| | | DTA124ECA | -30 | |
| | | DTA143ECA | -100 | |
| | | DTA144ECA | -30 | |
| I _c (Max.) | Output current | ALL | -100 | mA |
| P _D | Power Dissipation | 200 | mW | |
| R _{θJA} | Thermal Resistance, Junction to Ambient Air *1 | 409 | °C/W | |
| R _{θJC} | Thermal Resistance, Junction to Case *1 | 225 | °C/W | |
| R _{θJL} | Thermal Resistance, Junction to Lead *1 | 197 | °C/W | |
| T _J | Junction Temperature | -55 to +150 | °C | |
| T _{STG} | Operating and Storage and Temperature Range | -55 to +150 | °C | |

Digital Transistor

DTA(R₁=R₂ SERIES)CA

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT | |
|------------------------|----------------------------------|---|------|------|-------|------|----|
| Input Voltage | V _{I(off)} | V _{CC} =-5V, I _o =-100μA | -0.5 | -1.1 | - | V | |
| Input Voltage | V _{I(on)} | DTA114ECA DTA124ECA DTA143ECA DTA144ECA | - | -1.9 | -3 | | |
| | | V _O =-0.3V, I _o =-10mA | | | | | |
| | | V _O =-0.2V, I _o =-5mA | | | | | |
| | | V _O =-0.3V, I _o =-20mA | | | | | |
| Output Voltage | V _{O(on)} | I _o /I _i =-10mA/-0.5mA, | - | -0.1 | -0.3 | V | |
| Input Current | I _i | V _i =-5V | - | - | -0.88 | mA | |
| DTA114ECA | | | | | -0.36 | | |
| DTA124ECA | | | | | -1.8 | | |
| DTA143ECA DTA144ECA | | | | | -0.18 | | |
| Output Current | I _{o(off)} | V _{CC} =-50V, V _i =0V | - | - | -0.5 | μA | |
| DC Current Gain | G _i | V _O =-5V, I _o =-5mA | - | - | 30 | - | |
| DTA114ECA | | | | | 56 | | |
| DTA124ECA | | | | | 30 | | |
| DTA143ECA DTA144ECA | | | | | 68 | | |
| Input Resistor | R ₁ (R ₂) | | | 7 | 10 | 13 | kΩ |
| DTA114ECA | | | | 15.4 | 22 | 28.6 | |
| DTA124ECA | | | | 3.29 | 4.7 | 6.11 | |
| DTA143ECA DTA144ECA | | | | 32.9 | 47 | 61.1 | |
| Resistance Ratio | R ₂ /R ₁ | - | 0.8 | 1 | 1.2 | | |
| Transition frequency | f _T | V _O =-10V, I _o =-5mA, f=100MHz | - | 250 | - | MHz | |

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

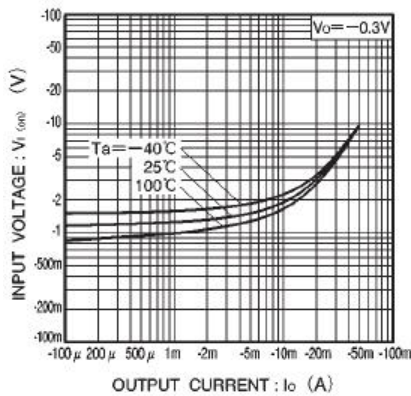


Fig.1 Input voltage vs. output current (ON characteristics)

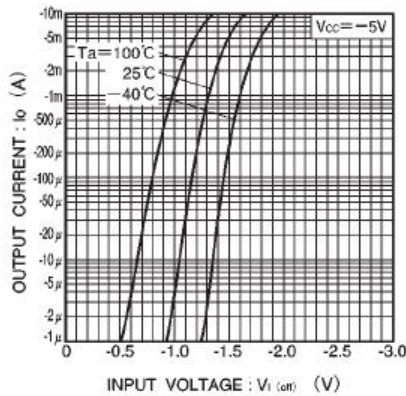


Fig.2 Output current vs. input voltage (OFF characteristics)

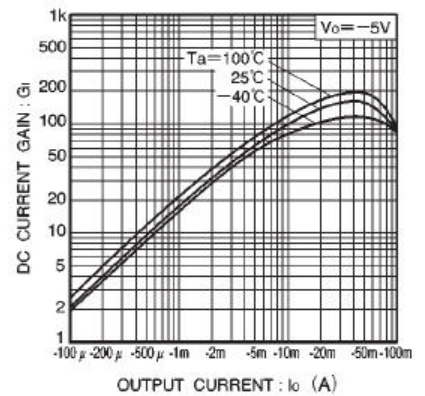


Fig.3 DC current gain vs. output current

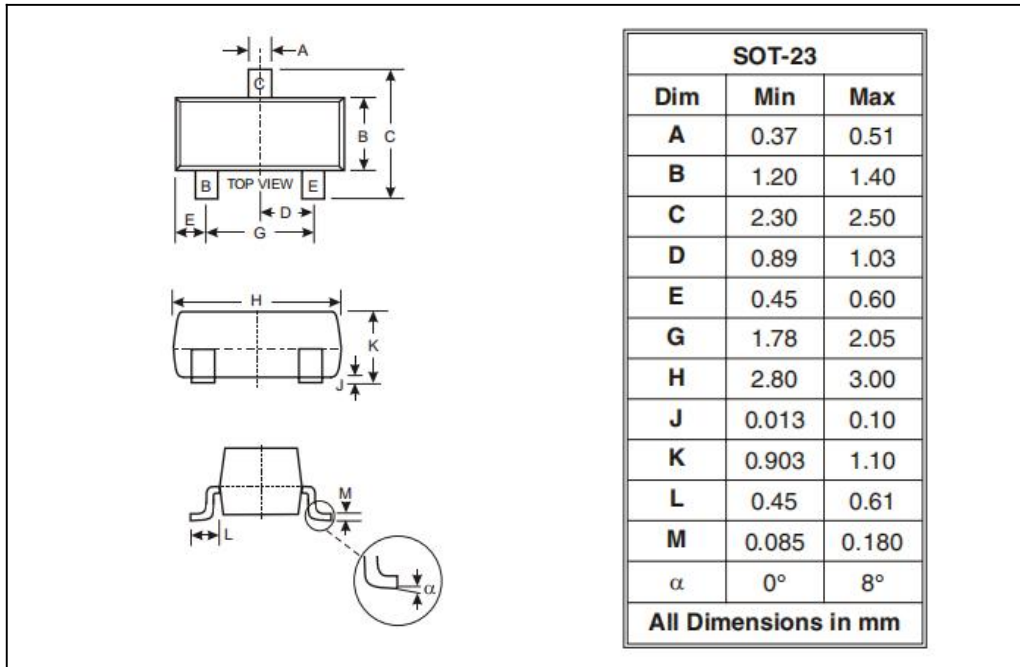
Digital Transistor

DTA(R₁=R₂ SERIES)CA

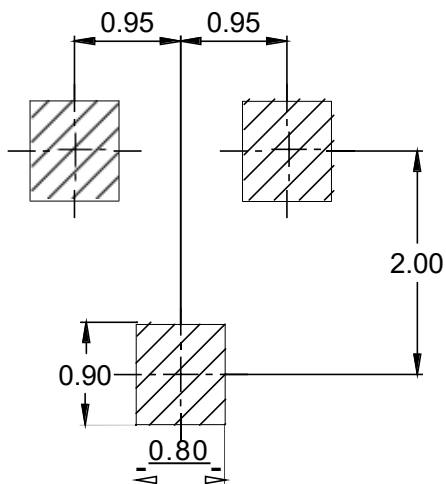
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

| Device | Package | Shipping |
|--------------------------------|---------|------------------------|
| DTA114ECA/124ECA/143ECA/144ECA | SOT-23 | 3000 pcs / Tape & Reel |