

TAA 780 Integrated circuit for 1,1 V stabilisation in epoxy package

The TAA 780 is a monolithic integrated circuit suitable for voltage stabilisation in transistor circuits or watch movements.

Maximum ratings

Collector-base voltage	V ₂₁₀	3	V
Collector-emitter voltage	V _{23R}	2	V
@ R ₁₃ = 5 kΩ (external to package)			
Emitter-base voltage	V ₃₁₀	2	V
Base-ground voltage	V ₄₁₀	2	V
Collector current	I ₂	15	mA
Stabilising current	I ₁	1	mA
Operating temperature range	T _A	−20... +40	°C
Storage temperature range	T _S	−20... +125	°C

Characteristics @ T_A = 25 °C

D.C. current gain of transistor T 1

@ V₂₃ = 1,5 V, I₂ = 0,3 mA, I₄ = 0

$$h_{21E} = 250 (> 120)$$

Collector-emitter saturation voltage of transistor T 1

@ I₂ = 3,5 mA, I₁ = 35 μA, I₄ = 0

$$V_{23 \text{ sat}} = 0,1 (< 0,12) \text{ V}$$

Base-emitter saturation voltage of transistor T 1

@ I₂ = 3,5 mA, I₁ = 35 μA, I₄ = 0

$$V_{13 \text{ sat}} = 0,7 \text{ V}$$

Total resistance of potential divider

$$R_1 + R_2 = 15 (> 10) \text{ k}\Omega$$

Stabilised voltage

@ V₂₄ = 1,5 V, I₁ = 250 μA, I₃ = 3,5 mA

$$V_{34} = 1,1 \pm 0,05 \text{ V}$$

Voltage stabilisation coefficient*

@ V₂₄ = 1,3... 1,7 V, I₁ = 250 μA, I₃ = 3,5 mA

$$S_{V34} = -200$$

Temperature coefficient of stabilised voltage

@ V₂₄ = 1,5 V, I₁ = 250 μA, I₃ = 3,5 mA

$$TC_{V34} = -2,5 \cdot 10^{-3} \text{ 1/}^\circ\text{C}$$

Small signal common emitter current gain of transistor T 1

@ V₂₃ = 1,5 V, I₂ = 0,3 mA, I₄ = 0

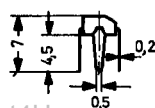
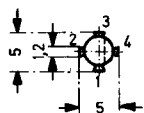
$$h_{21e} = 250$$

*S_{V34} and TC_{V34} are defined as follows:

$$S_{V34} = \frac{\Delta V_{24} \cdot V_{34}}{\Delta V_{34} \cdot V_{24}} \quad TC_{V34} = \frac{\Delta V_{34}}{V_{34} \cdot \Delta T_A}$$

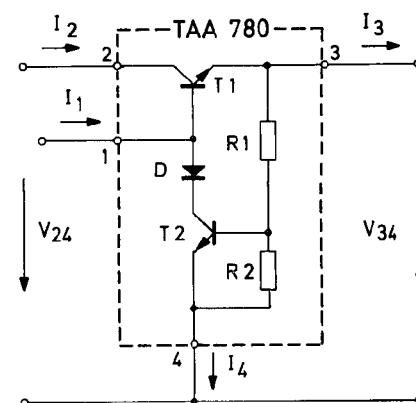
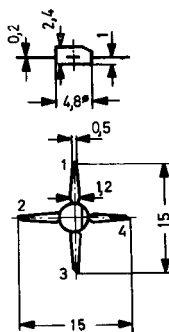
The TAA 780 is normally supplied in an epoxy package with vertical leads (suffix "A"). Alternatively, to special order, the package is available with horizontal leads (suffix "B").

TAA 780 «A»
Epoxy package
with vertical leads
Weight 0,1 p



Dimensions in mm

TAA 780 «B»
Epoxy package
with horizontal leads
Weight 0,1 p

**Circuit diagram**

The symbols against the accompanying characteristics and ratings refer to the above circuit. The suffix "O" on certain ratings indicates that other connections are open circuited.