

LOW FREQUENCY AMPLIFIER

DEVELOPMENT SAMPLE DATA

The TAA480 is a silicon monolithic integrated a.f. amplifier suitable for use as channel amplifier in telephone carrier equipment. The accurate amplification and input and output impedances required for this application make the use of low tolerance resistors imperative. Therefore only the transistors and diodes have been integrated.

Owing to the push-pull configuration of the output stage no d.c. current will flow through the output transformer. This makes considerable savings possible.

QUICK REFERENCE DATA

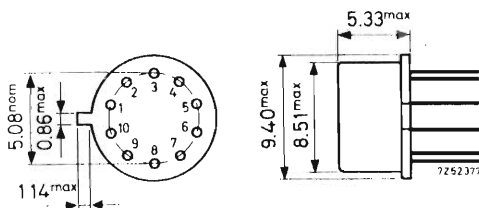
(see test circuit on page 4)

Supply voltage	V_B	nom. 20 V
Voltage gain	G_V	typ. 15 dB
Output voltage at $d_{TOT} = 1\%$	$V_{O(rms)}$	min. 4 V

PACKAGE OUTLINE

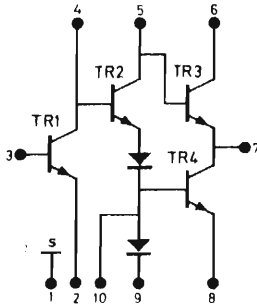
Dimensions in mm

TO-74 reduced height



These data, based on the specifications and measured performance of development samples, afford a preliminary indication of the characteristics to be expected of the described product. Distribution of development samples implies no guarantee as to the subsequent availability of the product

CIRCUIT DIAGRAM



RATINGS (Limiting values) ¹⁾

Voltages

V ₄₋₃	max.	25 V
V ₄₋₂	max.	25 V
V ₅₋₄	max.	25 V
V ₅₋₁₀	max.	25 V
V ₆₋₅	max.	25 V
V ₆₋₇	max.	25 V
V ₇₋₁₀	max.	25 V
V ₇₋₈	max.	25 V
V ₁₀₋₁	max.	25 V
V ₄₋₁	max.	25 V
V ₅₋₁	max.	25 V
V ₆₋₁	max.	25 V
V ₇₋₁	max.	25 V
V ₂₋₃	max.	5 V
V ₁₀₋₄	max.	10 V
V ₇₋₅	max.	5 V
V ₈₋₁₀	max.	5 V

Currents

I ₄	max.	10 mA
I ₅	max.	10 mA
I ₆	max.	10 mA

Total power dissipation up to T_{amb} = 75 °C

P _{tot}	max.	200 mW
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Temperatures

Storage temperature

T _{stg}	-55 to +125 °C
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Operating ambient temperature

T _{amb}	-5 to +75 °C
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¹⁾ Limiting values according to the Absolute Maximum System as defined in IEC publication 134.

CHARACTERISTICS at $T_{amb} = 25^{\circ}C$ TRANSISTOR TR1D.C. current gain

$$I_C = 0.2 \text{ mA}; V_{CB} = 5 \text{ V}$$

$$h_{FE} \quad \begin{array}{l} \text{typ. } 125 \\ 50 \text{ to } 300 \end{array}$$

TRANSISTORS TR3 and TR4Saturation voltage

$$I_C = 10 \text{ mA}; I_B = 1 \text{ mA}$$

$$V_{CEsat} \quad \begin{array}{l} \text{typ. } 260 \text{ mV} \\ < 600 \text{ mV} \end{array}$$

EACH TRANSISTORCollector cut-off current

$$I_E = 0; V_{CB} = 10 \text{ V}$$

$$I_{CBO} < 100 \text{ nA}$$

Collector-substrate leakage current

$$V_{CS} = 10 \text{ V}$$

$$I_{CSO} < 100 \text{ nA}$$

TAA480

PERFORMANCE in recommended test circuit

<u>Supply voltage</u>	V_B	nom.	20 V
<u>Output voltage at $d_{tot} = 1\%$</u>	$V_O(\text{rms})$	>	4 V
<u>Distortion at $P_O = 4.5 \text{ mW}$</u>	d_{tot}	<	0.1 %
<u>Input voltage at $P_O = 4.5 \text{ mW}$</u>	$V_i(\text{rms})$	typ.	310 mV
<u>D.C. collector voltage of TR4</u>	V7-6	typ.	7.8 V
			6.3 to 9.4 V
<u>Total current drain</u>	I_{tot}	typ.	5.2 mA
			4.75 to 5.6 mA

Test circuit:

