

### TCA240 — Double Balanced Modulator/ Demodulator

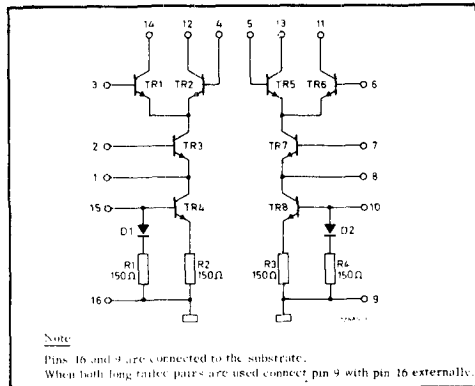
#### GENERAL DESCRIPTION

The TCA240 is a monolithic integrated circuit used for general applications, such as:

- modulator
- mixer
- switch/chopper
- a.m. synchronous demodulator
- f.m. quadrature demodulator
- phase comparator
- differential amplifier

The circuit is arranged to offer very flexible circuit design possibilities. The excellent matching and temperature tracking of the transistors in the circuit allows the use of circuit techniques which are not available when using discrete devices.

#### CONNECTION DIAGRAM



#### REFERENCE TABLE

TYPE NO.	STOCK NO.	OUTLINE DRWG NO.
TCA240	53918H	2

#### MAXIMUM RATINGS

(Voltages (each transistor))

Collector-substrate voltage (open base and emitter)	$V_{CSO}$	max.	16	V
Collector-base voltage (open emitter)	$V_{CBO}$	max.	16	V
Collector-emitter voltage (open base)	$V_{CEO}$	max.	12	V
Emitter-base voltage (open collector)	$V_{EBO}$	max.	5	V

Currents (each transistor)

Emitter current	$I_E$	max.	10	mA
Base current	$I_B$	max.	10	mA

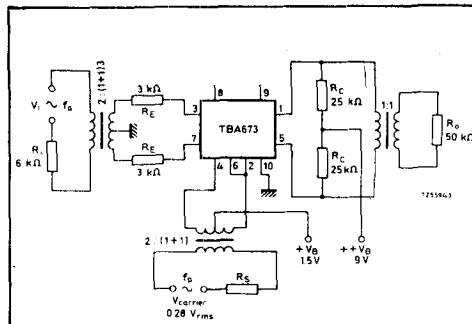
### TBA673 — Ring Modulator/Demodulator

#### GENERAL DESCRIPTION

The TBA673 is a monolithic integrated circuit comprising a 4-transistor modulator and demodulator circuit.

The four transistors must be as identical as possible; the lay-out has been designed to achieve this and the best possible tracking of the transistor parameters with temperature.

#### CONNECTION DIAGRAM



#### QUICK REFERENCE DATA

Collector cut-off current

$$I_E = 0; V_{CB} = 5 \text{ V}; T_{amb} = 25^\circ \text{C} \quad I_{CBO} < 100 \text{ nA}$$

Base-emitter voltage differences between transistors 1, 2, 3, 4,

$$V_{CB} = 5 \text{ V}; -I_E = 150 \mu\text{A} \quad V_{BE1} - V_{BE2} < 5 \text{ mV}$$

$$V_{BE3} - V_{BE4} < 5 \text{ mV}$$

D.C. current gain differences between transistors 1, 2, 3, 4

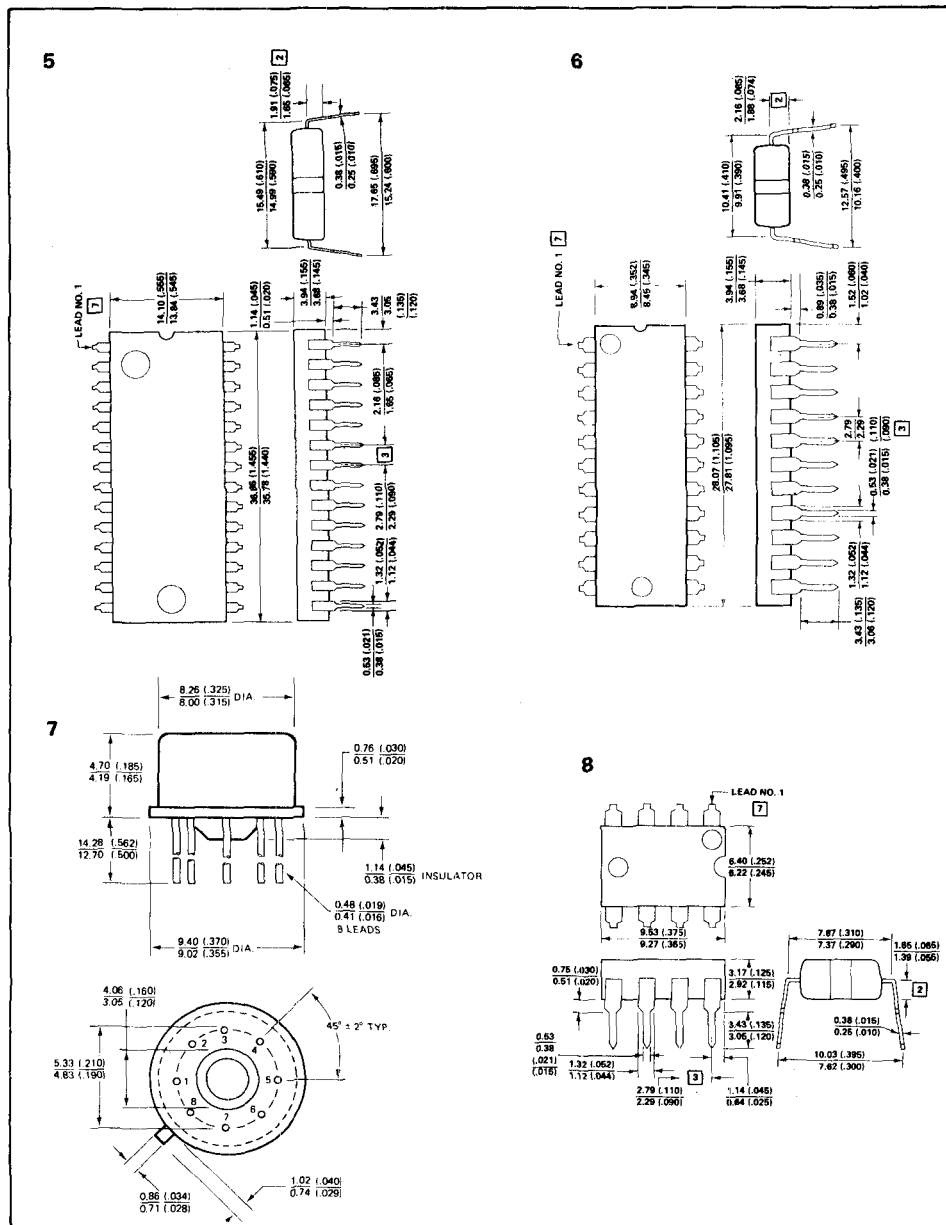
$$V_{CB} = 5 \text{ V}; -I_E = 150 \mu\text{A} \quad h_{FB1} - h_{FB2} < 0.008$$

$$h_{FB3} - h_{FB4} < 0.008$$

#### REFERENCE TABLE

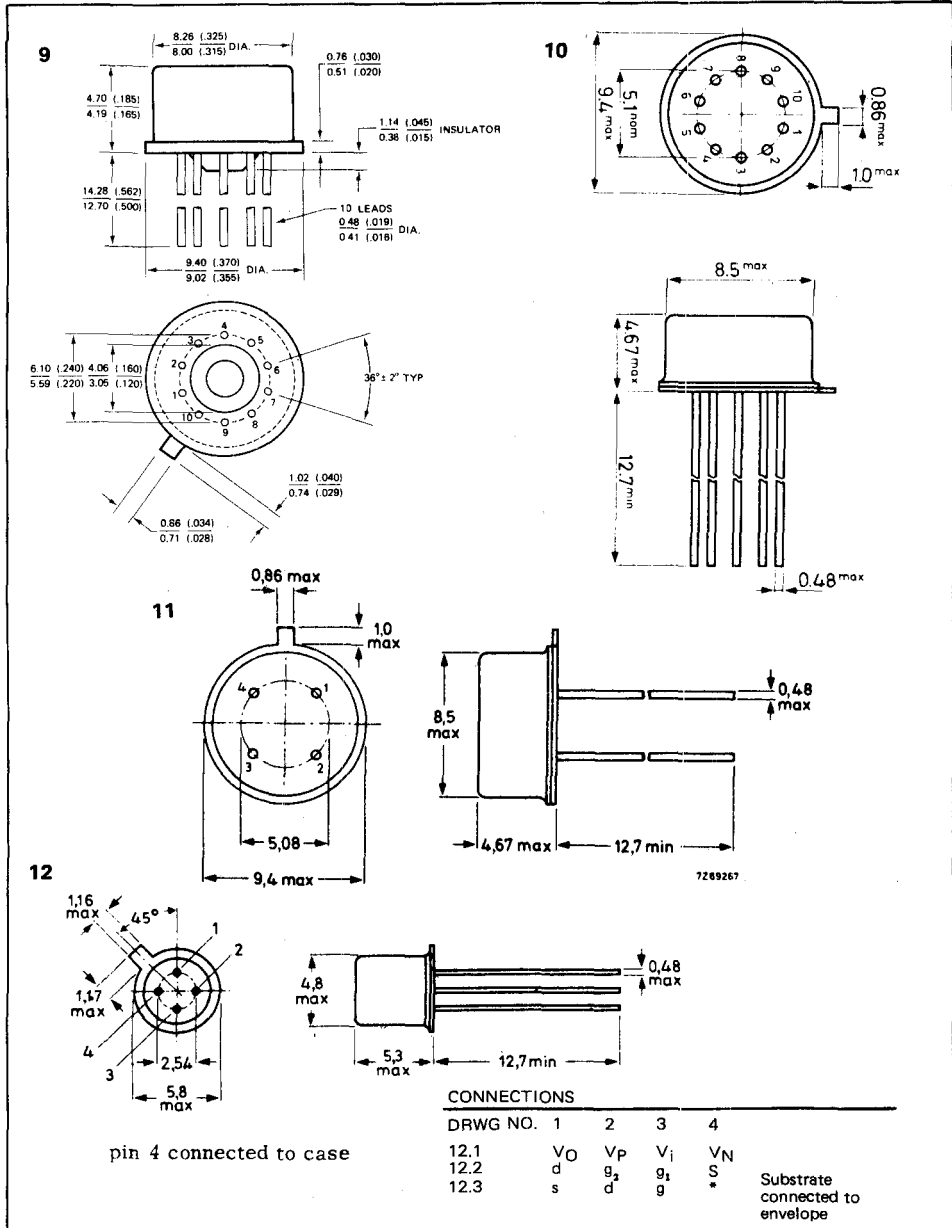
TYPE NO.	STOCK NO.	OUTLINE DRWG NO.
TBA673	53943F	10





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