

Signetics

Integrated Circuits – General

TCA240 – Double Balanced Modulator/ Demodulator

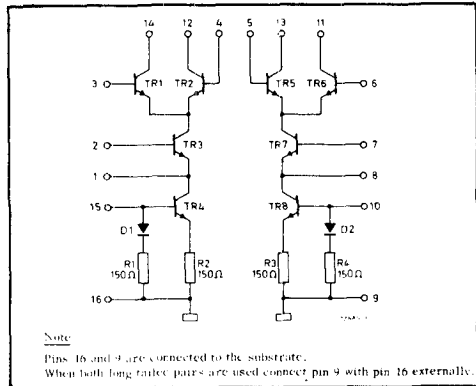
GENERAL DESCRIPTION

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 _{CB0}	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

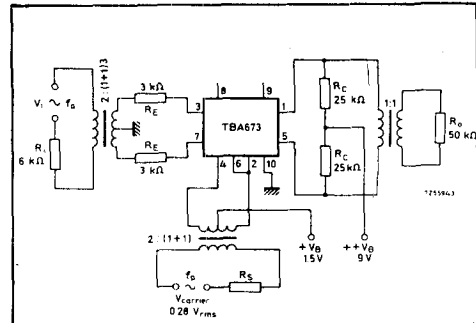
TBA673 – Ring Modulator/Demodulator

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

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

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

$$V_{BE1} - V_{BE2} < 5 \text{ mV}$$

$$V_{CB} = 5 V; -I_E = 150 \mu A \quad V_{BE3} - V_{BE4} < 5 \text{ mV}$$

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

$$V_{CB} = 5 V; -I_E = 150 \mu A \quad h_{FB1} - h_{FB2} < 0,008$$

$$h_{FB3} - h_{FB4} < 0,008$$

REFERENCE TABLE

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

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TCA280A

– Trigger Integrated Circuit

GENERAL DESCRIPTION

The TCA280A is a monolithic integrated circuit designed for thyristor and triac control circuits.

Possible modes of operation with the TCA280A are: phase control—synchronous on/off switching (static switch)—time proportional control.

QUICK REFERENCE DATA

Supply voltage—normal AC mains
using simple power supply—
or DC supply 14V
Output trigger pulse 250mA
Ambient temp. range –20 to +80°C

REFERENCE TABLE

TYPE NO.	STOCK NO.	OUTLINE DRWG. NO.
TCA280A	53539H	2

TBA673 – Modulator/Demodulator

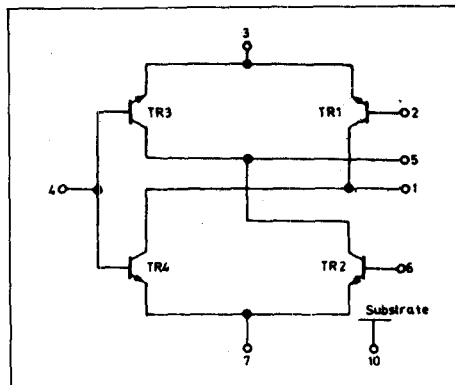
GENERAL DESCRIPTION

The TBA673 is a monolithic integrated circuit comprising a 4-transistor modulator/demodulator circuit. The circuit, being made on a single crystal, ensures a great similarity in the characteristics of the individual transistors and optimal tracking of their parameters with temperature variation. Consequently, the TBA673 gives better balancing and therefore less carrier leakage than a conventional circuit. The use of transistors instead of diodes provides a better isolation between input and output circuits.

QUICK REFERENCE DATA

I_{CB0}	Collector-base leakage current $V_{CB} = 5.0V, T_{amb} = 25^{\circ}C$	<100nA
$V_{BE1} - V_{BE2}$	Base-emitter voltage difference between transistors TR1-TR2, TR3-TR4	
$V_{BE3} - V_{BE4}$	$V_{CB1} = V_{CB2} = V_{CB3} = V_{CB4} = 5.0V$ $-I_{E1} = -I_{E2} = -I_{E3} = -I_{E4} = -150\mu A$	<5.0mV
$h_{FB1} - h_{FB2}$	Common base current amplification difference between transistors TR1-TR2	
$h_{FB3} - h_{FB4}$	$V_{CB1} = V_{CB2} = V_{CB3} = V_{CB4} \approx 5.0V$ $-I_{E1} = -I_{E2} = -I_{E3} = -I_{E4} = -150\mu A$	<0.008

CIRCUIT DIAGRAM

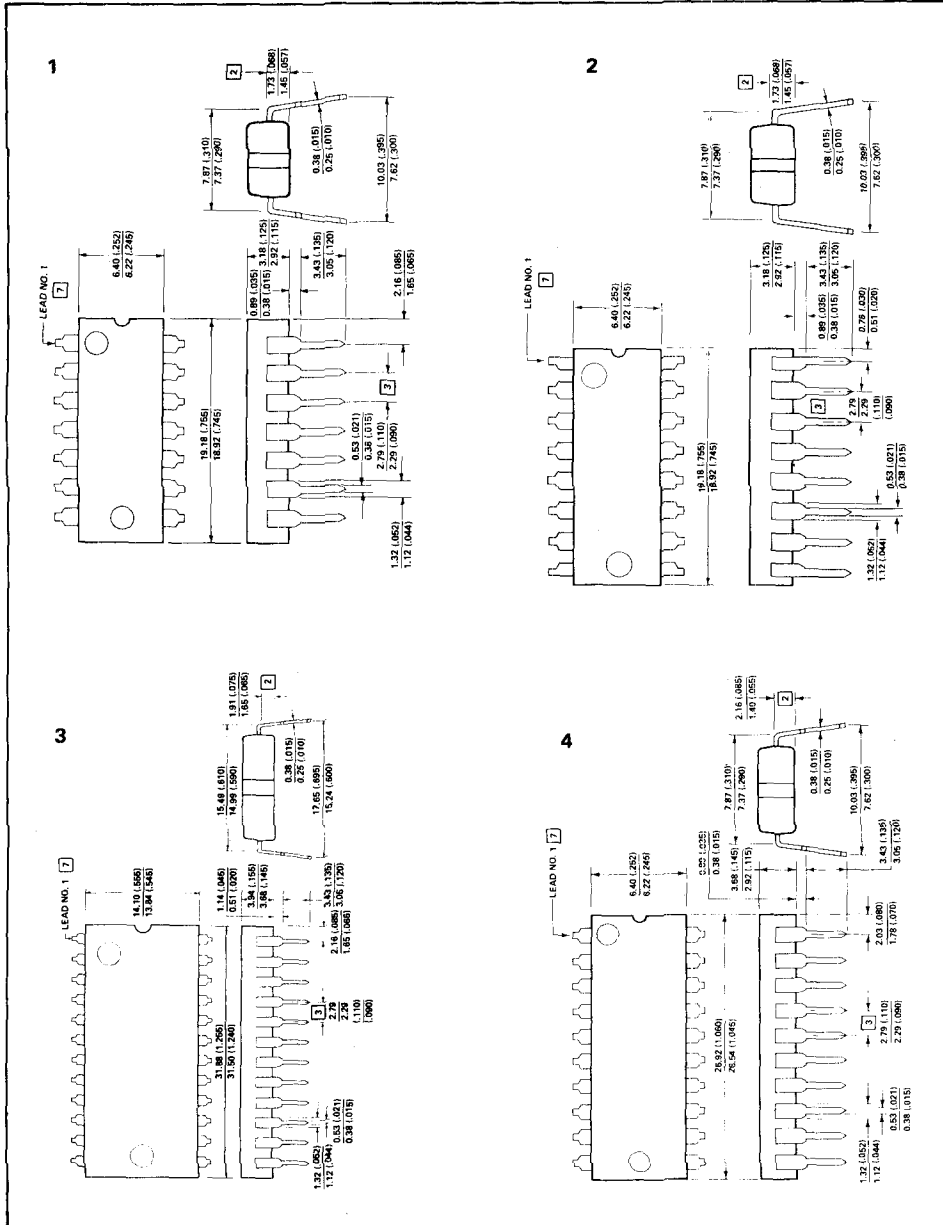


REFERENCE TABLE

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

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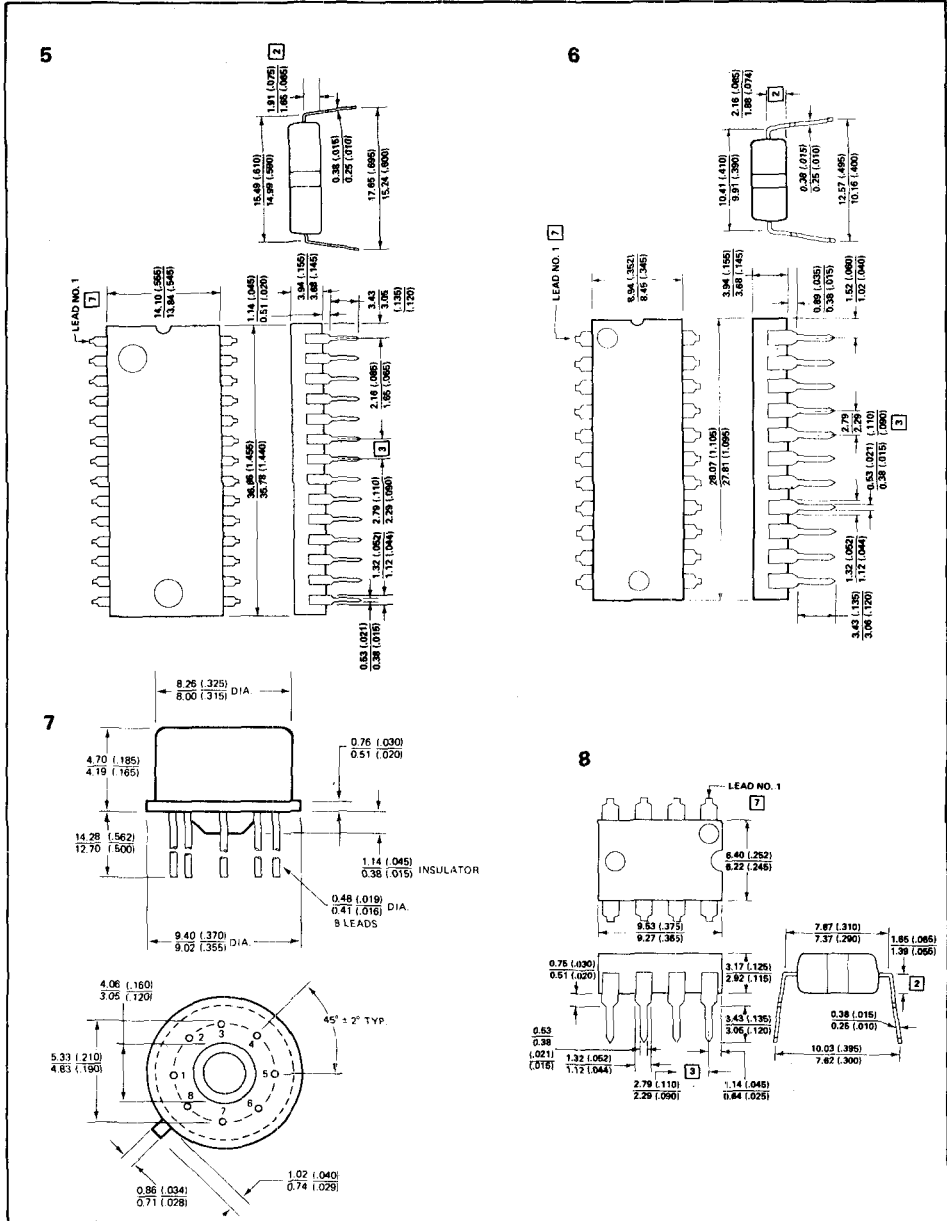


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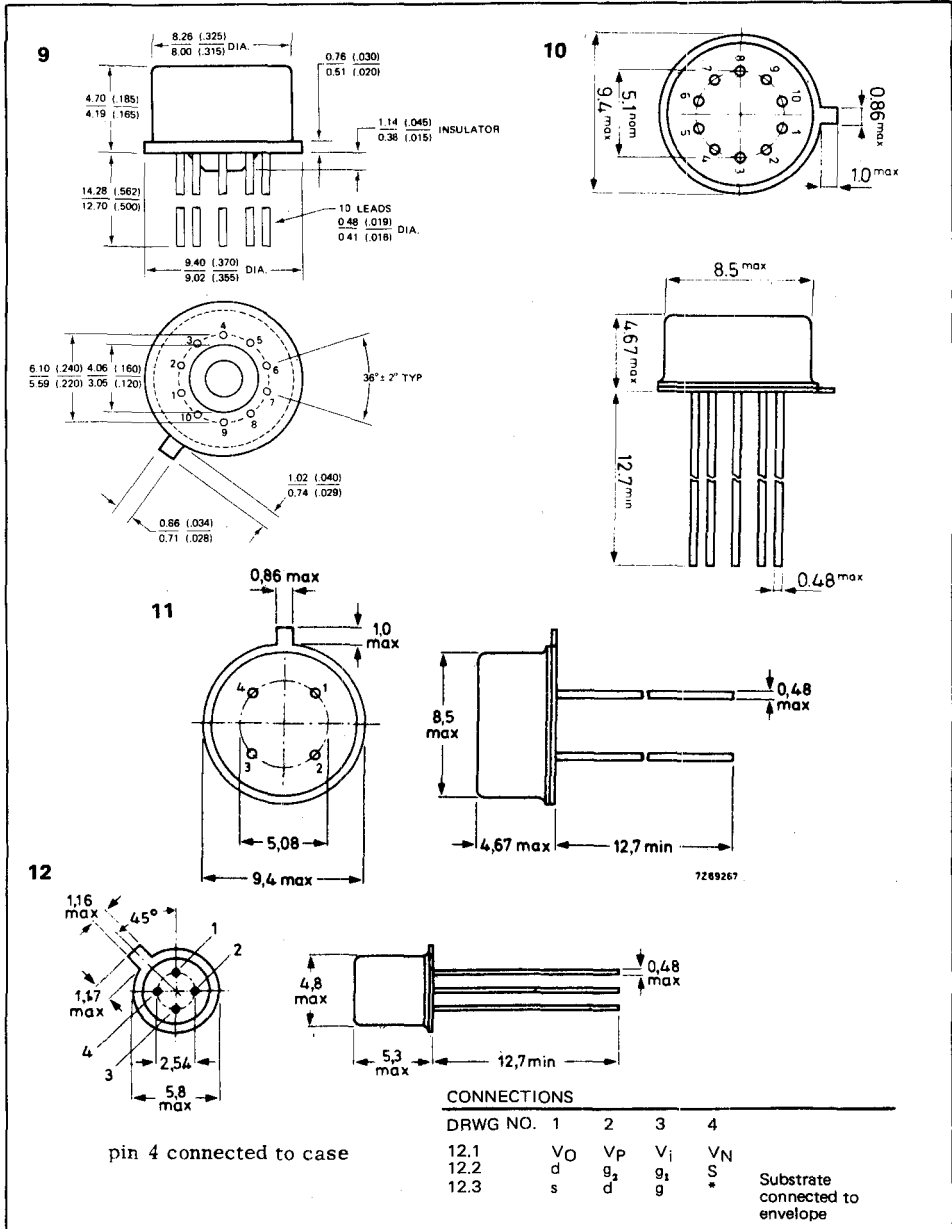
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Outline Drawings



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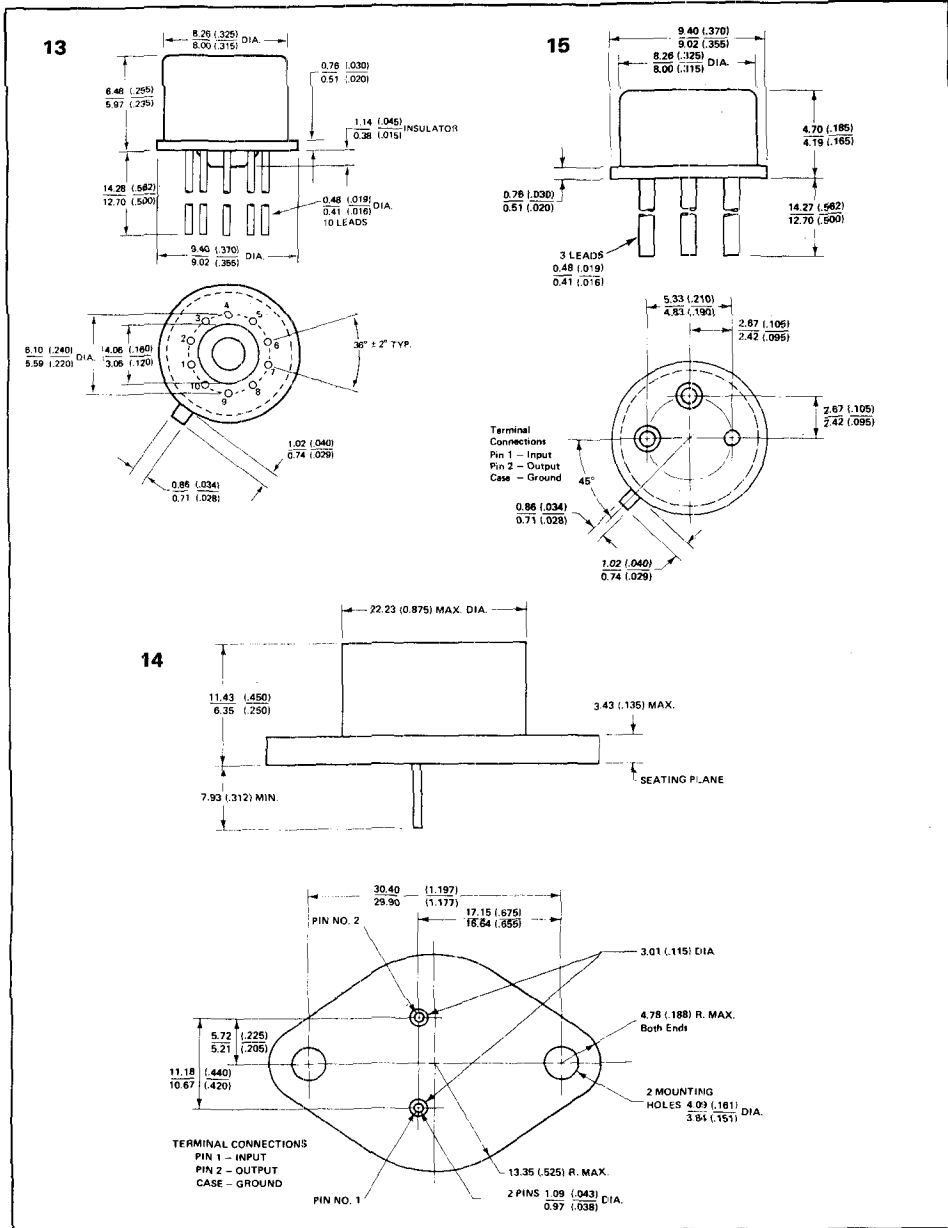


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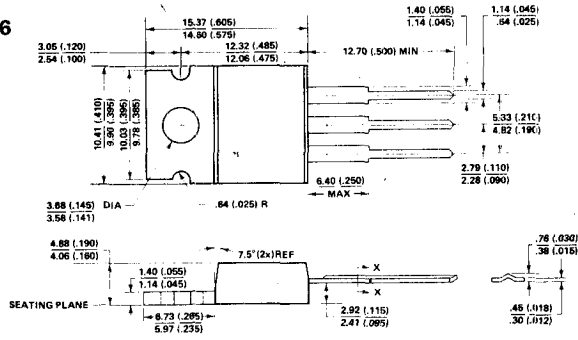
Outline Drawings



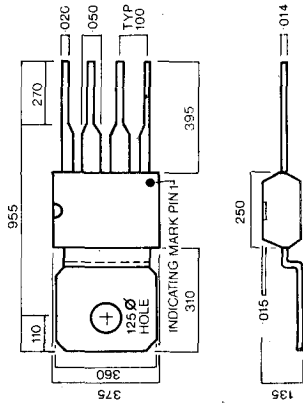
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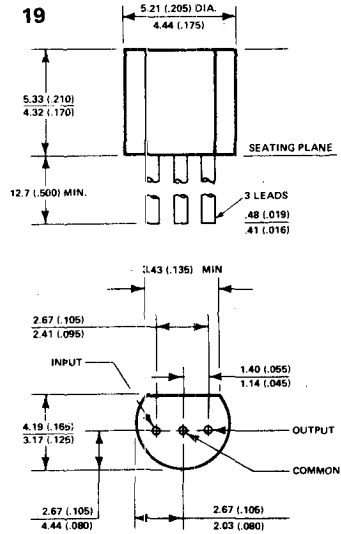
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17



19



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