

### TDA1024 – Mains-Zero, Triac Triggering

#### GENERAL DESCRIPTION

The TDA1024 is a monolithic integrated circuit intended for use in ON/OFF control of triacs in static switching applications. It incorporates zero voltage point triggering to minimize radio interference.

The TDA1024 is mainly intended for applications such as switching resistive loads and replacing mechanical thermostats in, for example:

- central heating installations,
- washing machine heaters,
- water heaters,
- smoothing irons.

#### QUICK REFERENCE DATA

Supply voltage (via dropping resistor)	$V_S$	mains voltage
Average supply current	17(av)	typ. 10 mA
Trigger pulse width	$t_p$	typ. 195 $\mu$ s
Max. trigger current capability	$I_{2max}$	> 100 mA

Functions of the TDA1024 are:

- a comparator with Schmitt-trigger action. This circuit compares the control voltage at pin 5 with the reference voltage at pin 4 and switches on when the control voltage exceeds the reference voltage. The hysteresis of the circuit is adjustable between 20 mV and 300 mV by selection of the value of a resistor connected between pin 3 and pin 1.
- an input buffer circuit with high input impedance and low output impedance. This circuit presents a low impedance to the comparator input so that the hysteresis of the circuit is independent of variations of the input voltage.
- a control circuit d.c. supply which provides a zener-limited nominal 6.5 V supply, at a current of up to 30 mA, for application to the input bridge.

### TCA580 – Gyration Circuit

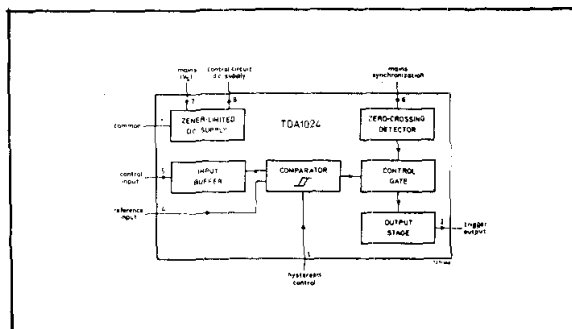
#### GENERAL DESCRIPTION

The TCA580 is a monolithic integrated gyration circuit with floating inputs. It is intended mainly to replace the coils in telephony low-pass filters. The simulated inductance consists of the IC, two resistors  $R_{g1}$  and  $R_{g2}$  and a capacitor C2. With this configuration, inductances of up to 1 MH  $\pm$ 2% can be achieved.

#### QUICK REFERENCE DATA

Supply voltages	$V_P$	typ. 4,4 V
	$V_N$	typ. 7,6 V
Supply current	$I_P$	typ. 0,8 mA
Frequency range	f	d.c. to 10 kHz
Quality factor at f = 200 Hz	Q	500 to 5000
Efficiency	$\eta$	typ. 1,4 %
Operating ambient temperature	$T_{amb}$	-20 to +70 °C

#### BLOCK DIAGRAM

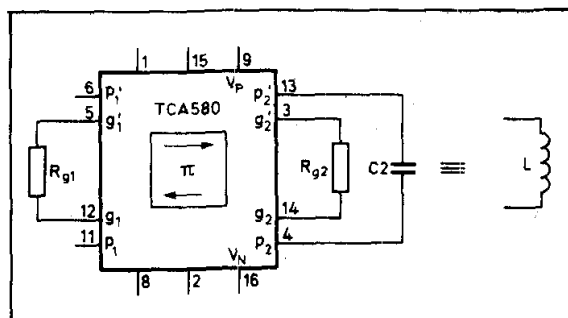


- a zero-crossing detector which produces an output when the sinusoidal voltage applied to pin 6 passes through zero; advantage of this mode is minimum radio interference.
- a control gate which inhibits the output trigger pulse from the TDA1024 unless there are outputs from both zero-crossing detector and comparator.
- an output stage which delivers a positive-going, mains-synchronized triac trigger pulse whenever the control gate is activated. The output from this stage is current-limited and protected against short-circuit. Since the current and voltage in the load must be in phase for mains-synchronized switching, the applications of the TDA1024 are restricted to the switching of resistive loads.

#### REFERENCE TABLE

TYPE NO.	STOCK NO.	OUTLINE DRWG NO.
TDA1024	54920D	8

#### CONNECTION DIAGRAM

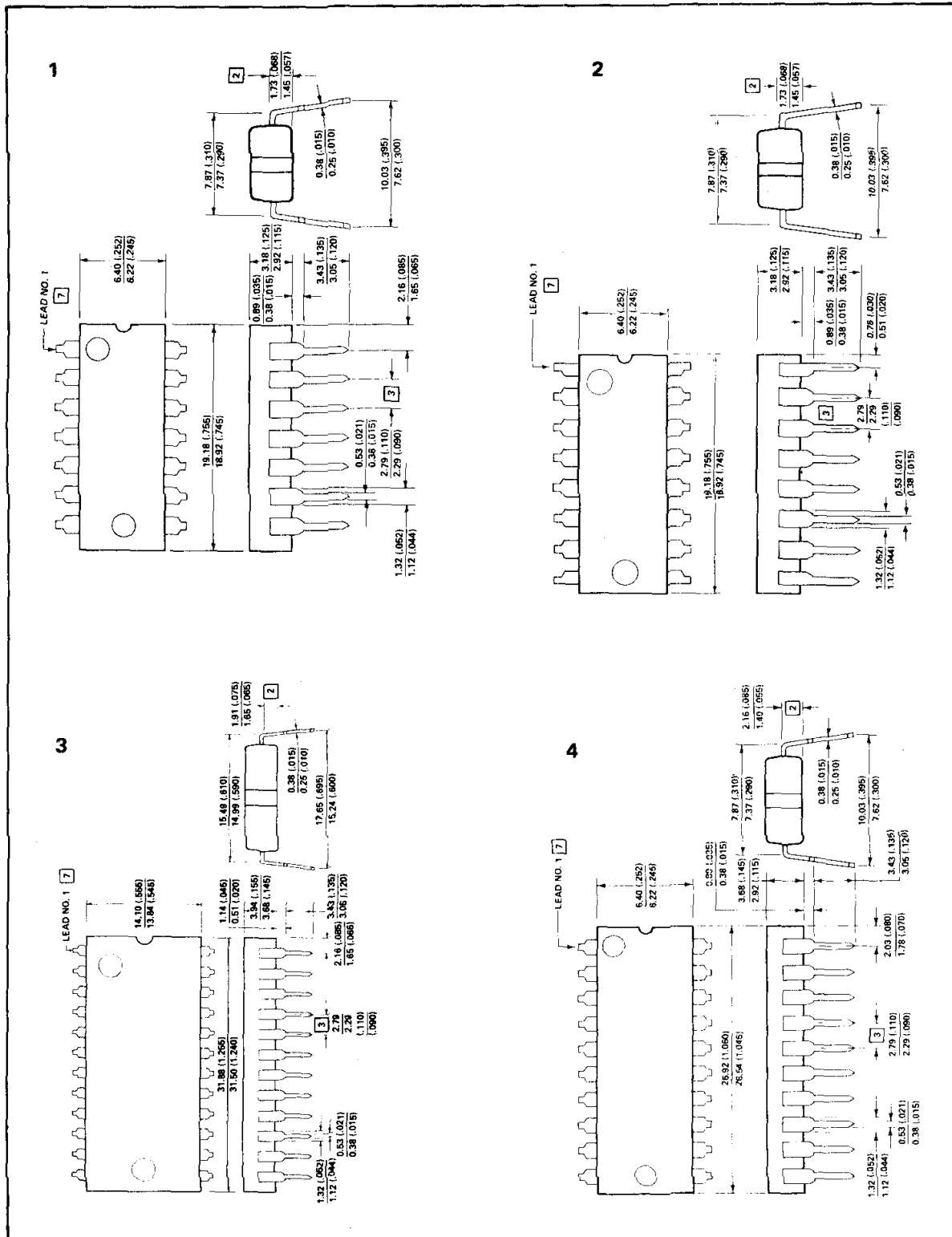


#### REFERENCE TABLE

TYPE NO.	STOCK NO.	OUTLINE DRWG NO.
TCA580	54481G	2

PLEASE QUOTE STOCK NO. AND MANUFACTURERS PART NO. WHEN ORDERING

**ITT GEMINI**

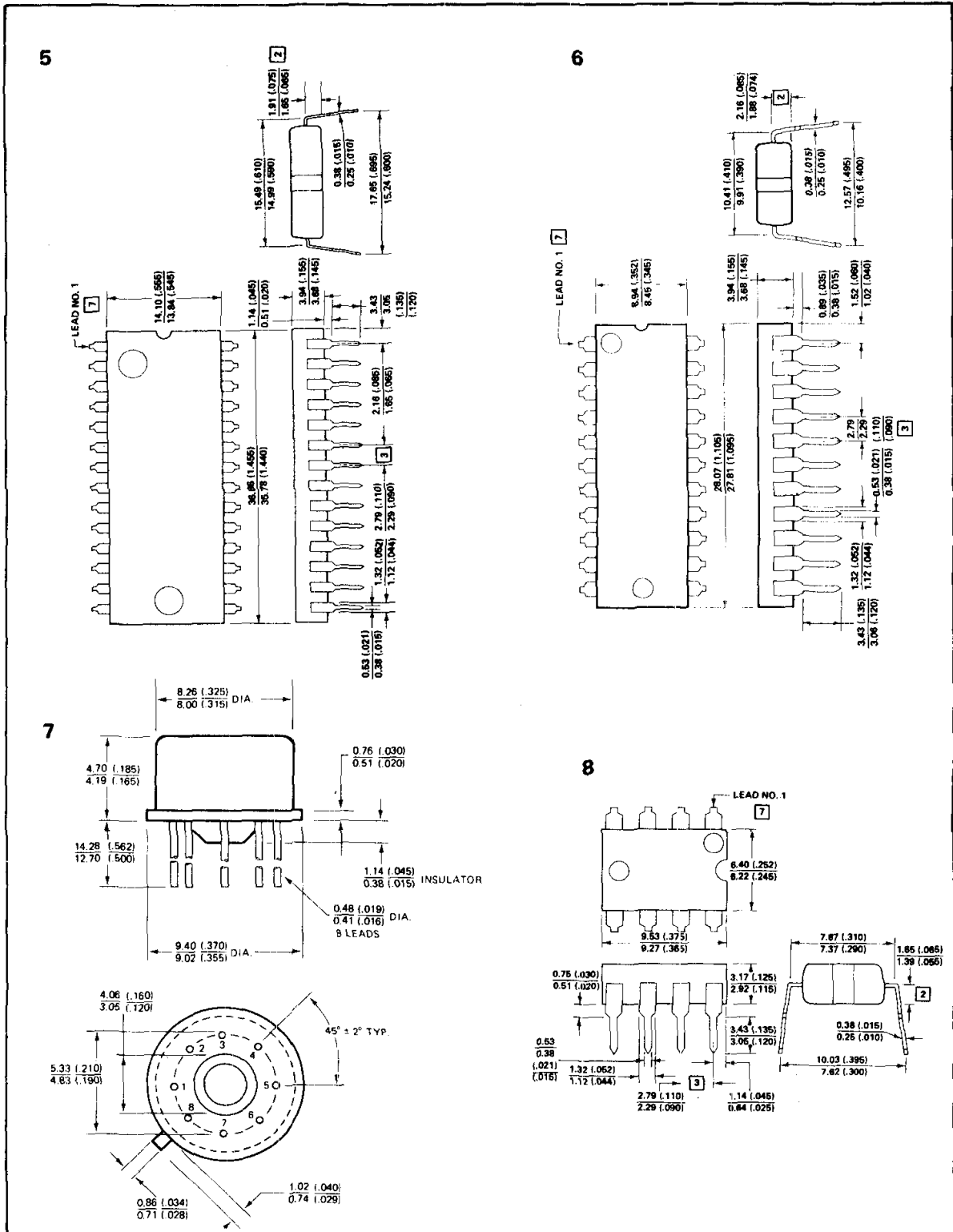


PLEASE QUOTE STOCK NO.  
AND MANUFACTURERS PART NO. WHEN ORDERING



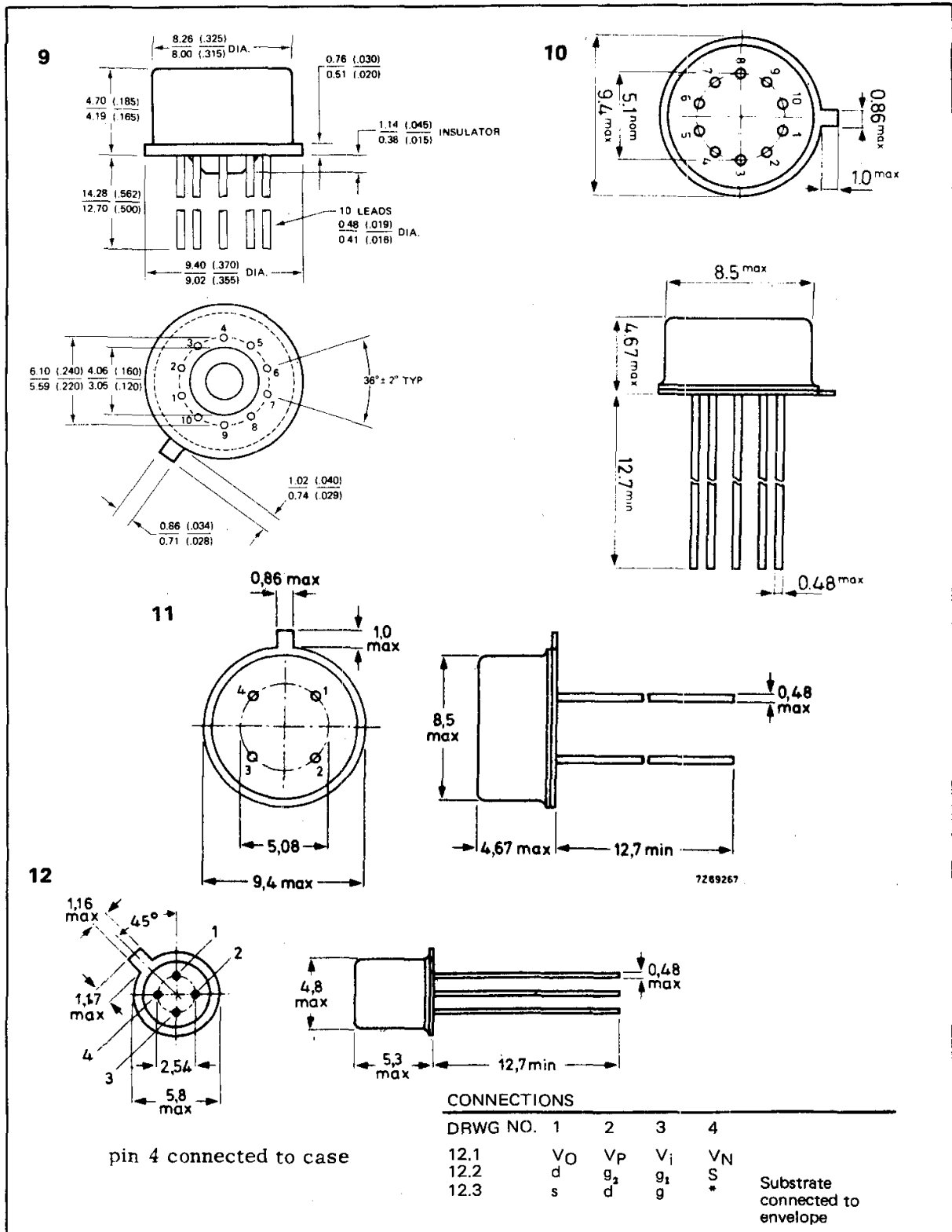
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## Outline Drawings



**ITT GEMINI**

FOR CURRENT PRICES PHONE  
HARLOW (0279) 29644

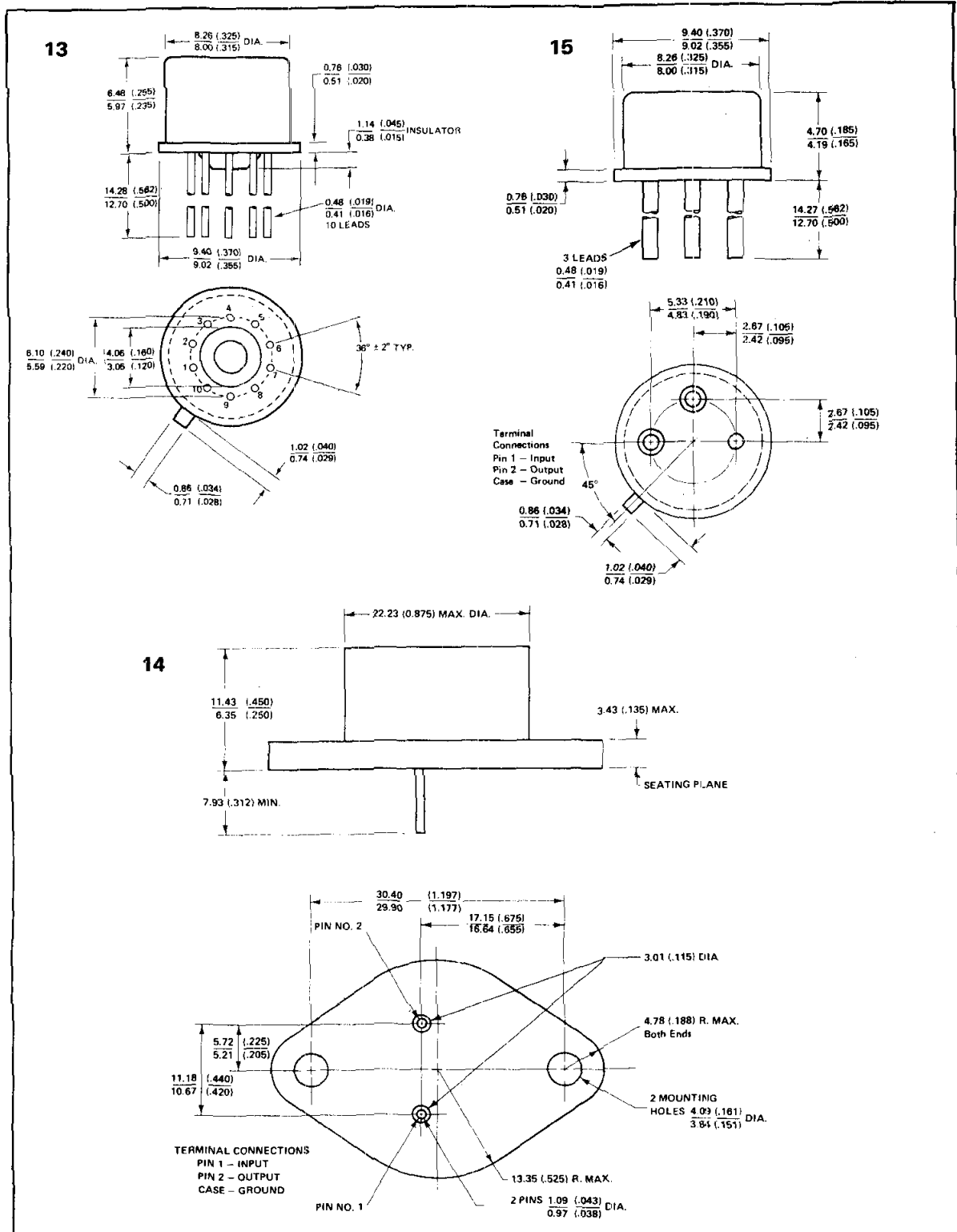


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**III GEMINI**

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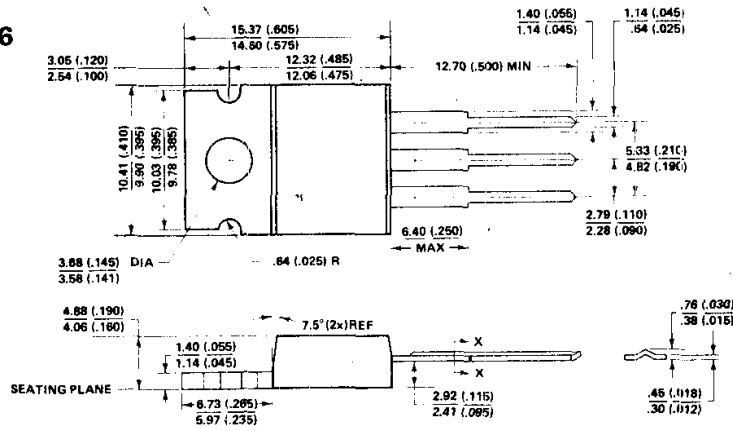
## Outline Drawings



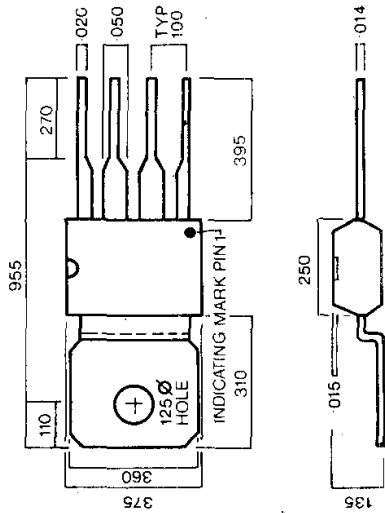
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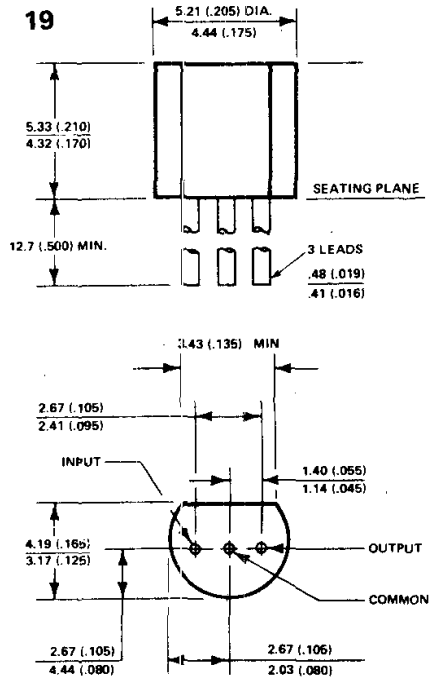
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17



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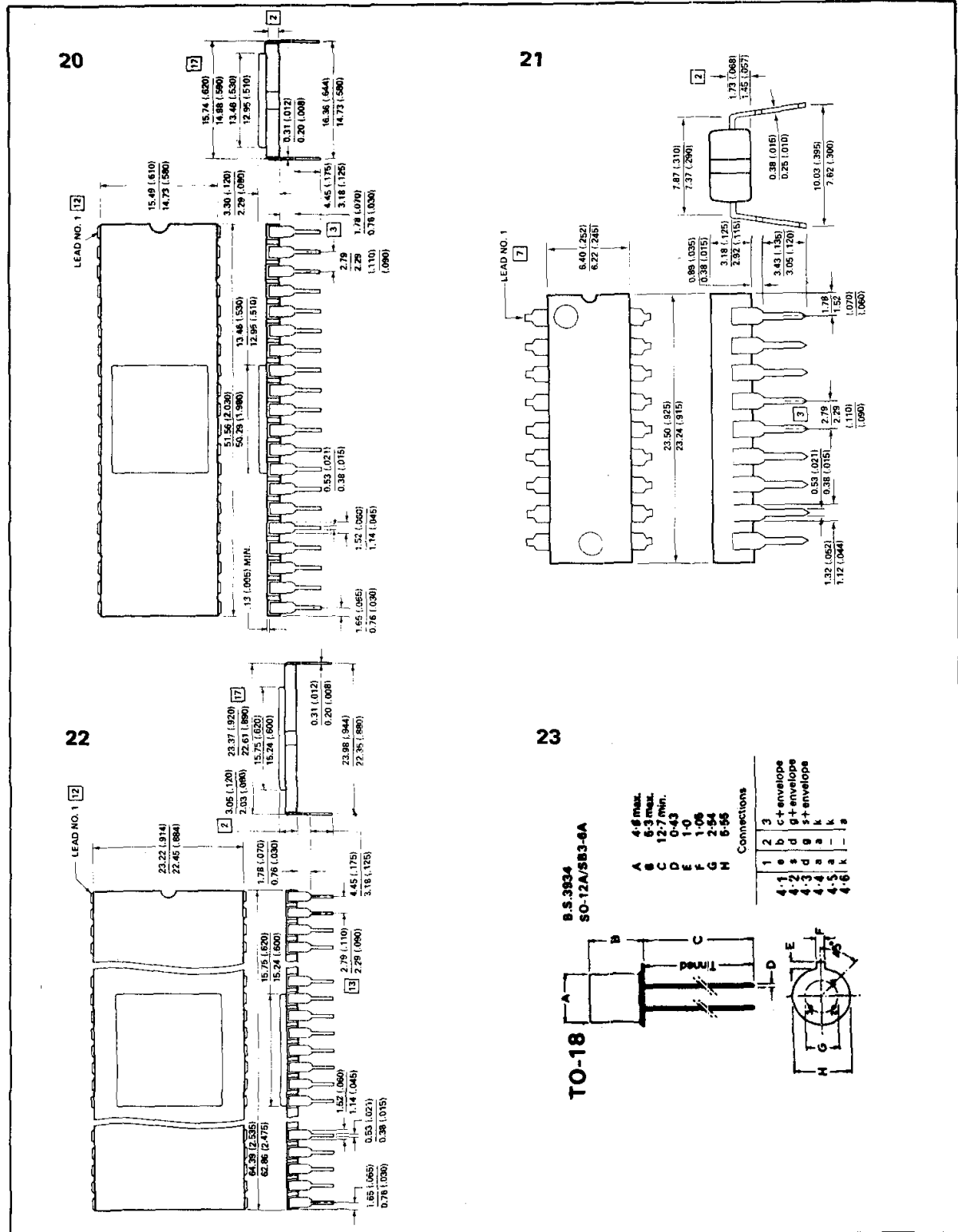


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