

Signetics

Integrated Circuits

NE565 – Phase Locked Loop

GENERAL DESCRIPTION

The SE/NE565 Phase-Locked Loop (PLL) is a self-contained, adaptable filter and demodulator for the frequency range from 0.001Hz to 500kHz. The circuit comprises a voltage-controlled oscillator of exceptional stability and linearity, a phase comparator, an amplifier and a low-pass filter as shown in the block diagram. The centre frequency of the PLL is determined by the free-running frequency of the VCO; this frequency can be adjusted externally with a resistor or a capacitor. The low-pass filter, which determines the capture characteristics of the loop, is formed by an internal resistor and an external capacitor.

FEATURES

- Highly stable centre frequency (200ppm/°C typ.)
- Wide operating voltage range (± 6 to ± 12 volts)
- Highly linear demodulated output (0.2% typ.)
- Centre frequency programming by means of a resistor or capacitor, voltage or current
- TTL and DTL compatible square-wave output; loop can be opened to insert digital frequency divider
- Highly linear triangle wave output
- Reference output for connection of comparator in frequency discriminator
- Bandwidth adjustable from $< \pm 1\%$ to $> \pm 60\%$
- Frequency adjustable over 10 to 1 range with same capacitor.

REFERENCE TABLE

TYPE NO.	STOCK NO.	OUTLINE DRWG. NO.
NE565N	56047X	1
NE565K	56048R	9

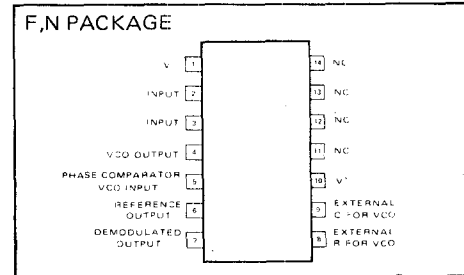
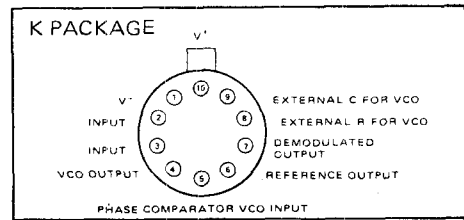
MAXIMUM RATINGS $T_A = 25^\circ\text{C}$ unless otherwise specified

PARAMETER	RATING	UNIT
Maximum operating voltage	26	V
Input voltage	3	V _{p-p}
Storage temperature	-65 to +150	°C
Operating temperature range	0 to +70	°C
NE565	-55 to +125	°C
Power dissipation	300	mW

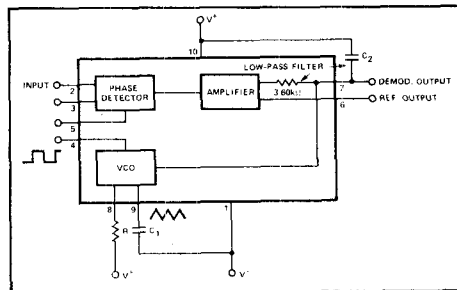
APPLICATIONS

- Frequency shift keying
- Modems
- Telemetry receivers
- Tone decoders
- SCA receivers

CONNECTION DIAGRAM



BLOCK DIAGRAM



- Wideband FM discriminators
- Data synchronizers
- Tracking filters
- Signal restoration
- Frequency multiplication & division

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Outline Drawings



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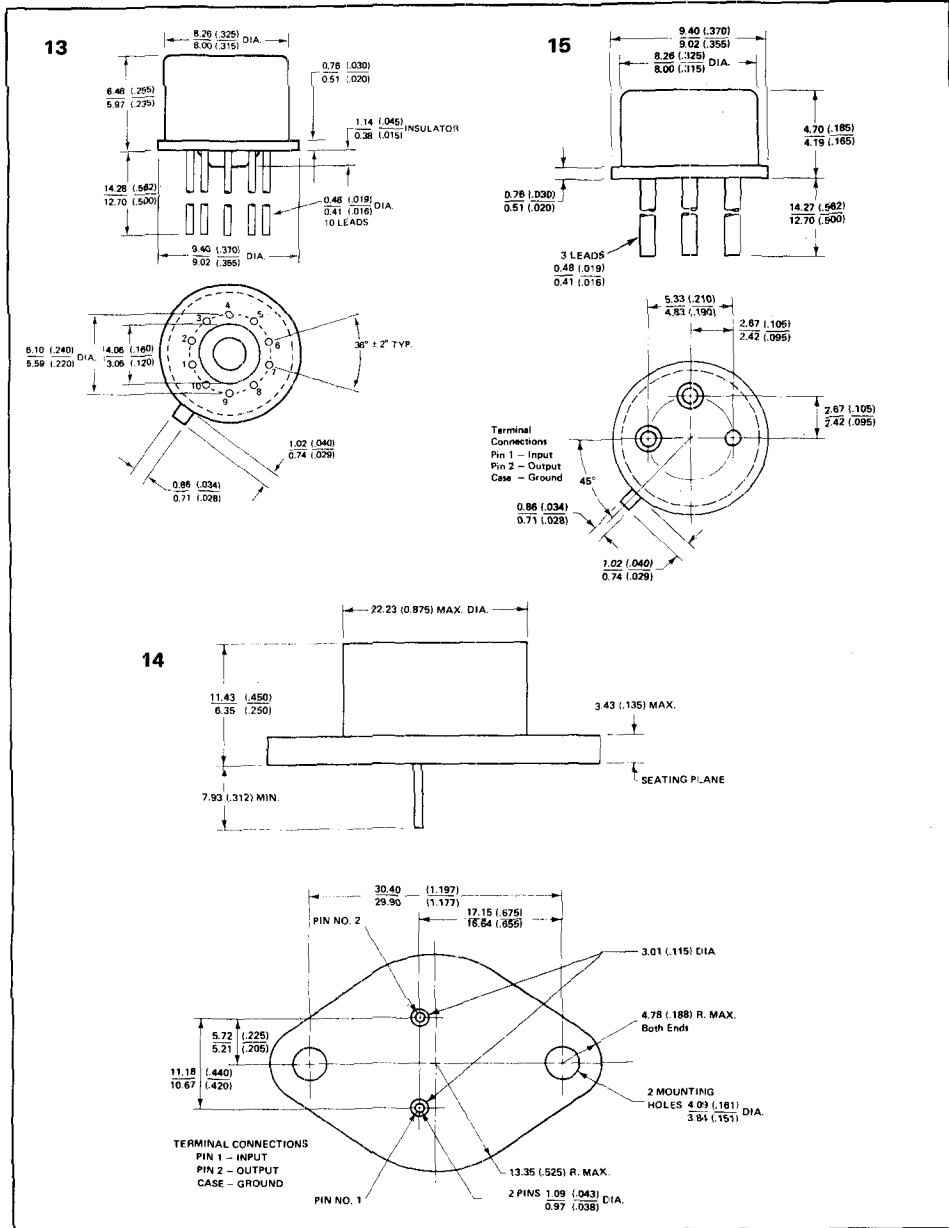


PLEASE QUOTE STOCK NO.
AND MANUFACTURERS PART NO. WHEN ORDERING

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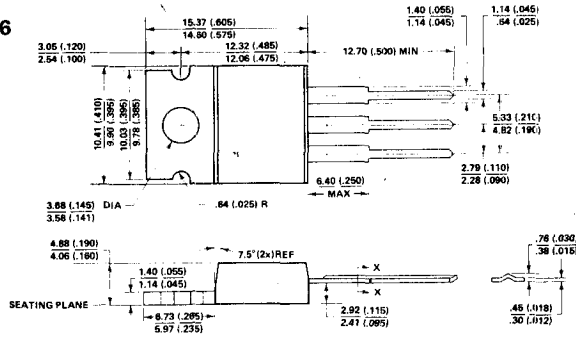
Outline Drawings



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