

Data Sheet

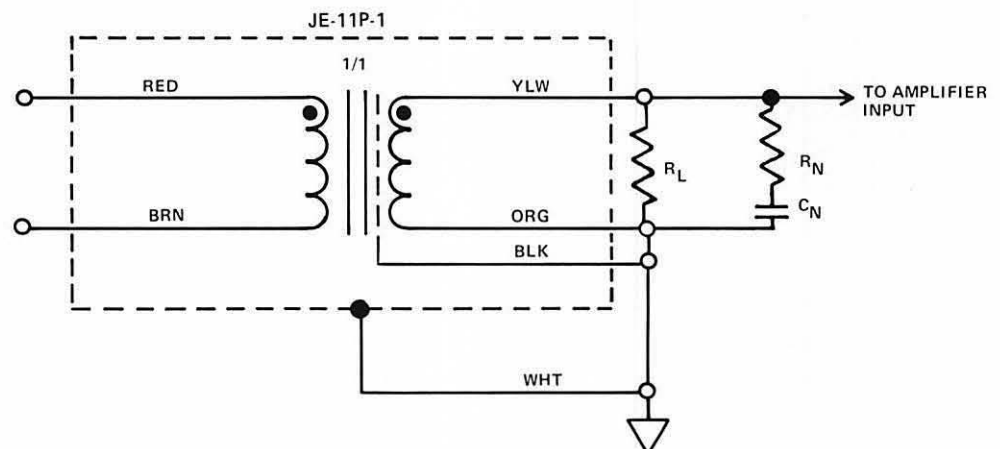
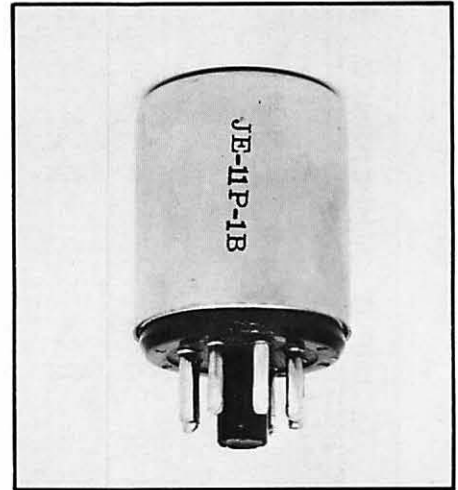
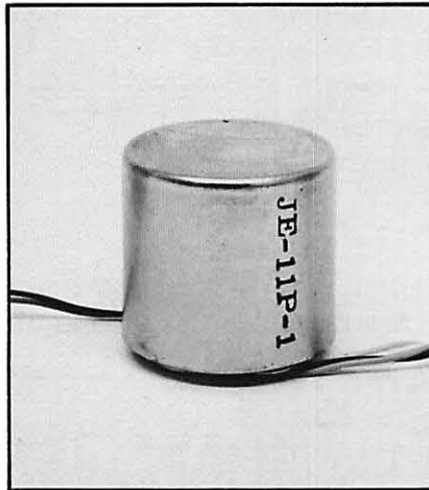
jensen transformers
By REICHENBACH ENGINEERING

JE-11P-1 LINE INPUT TRANSFORMER

The JE-11P-1 is a 1:1 turns ratio line input transformer for high input impedance circuits (10K ohms and higher). It handles levels to +18dBv. Re: 0.775v @ 20Hz. Below saturation, the 20Hz THD is less than 0.045%. The high grade Nickel alloy core yields very low distortion even with source impedances up to several thousand ohms.

The bandwidth is 69kHz with <2% overshoot. The series losses are equivalent to 3700 ohms, so the level loss will be the same as a voltage divider made with a 3700 ohm series resistor and a shunt resistor equal to the load connected to the secondary. If the load is 10K ohms, no RC network is required across the secondary. For 15K ohm load, an RC network of 30K ohms and 270pF is required to damp the resonance. If the load is 100K or higher, an RC network of 13K ohms and 620pF is required. For other loads such as input circuits with shunt capacitance, our computer can derive optimum RC network values to minimize transient distortion and maximize bandwidth and generate revised response and impedance results.

The standard package has wire leads. Octal plug versions are available for all popular pin connections with or without the RC network built-in.



- | | | |
|-----------------------------|-----------------------------|--------------------------------|
| (1) $R_L = 10K \text{ ohm}$ | (2) $R_L = 15K \text{ ohm}$ | (3) $R_L \geq 25K \text{ ohm}$ |
| R_N not required | $R_N = 30K \text{ ohm}$ | $R_N = 13K \text{ ohm}$ |
| C_N not required | $C_N = 270\text{pf}$ | $C_N = 620\text{pf}$ |

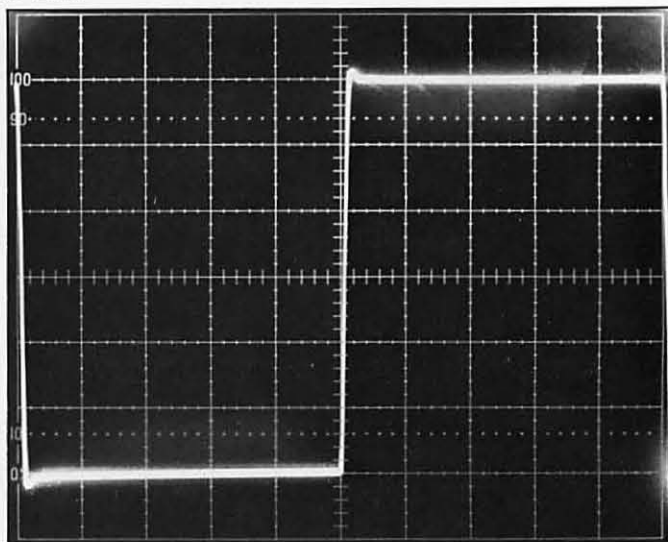
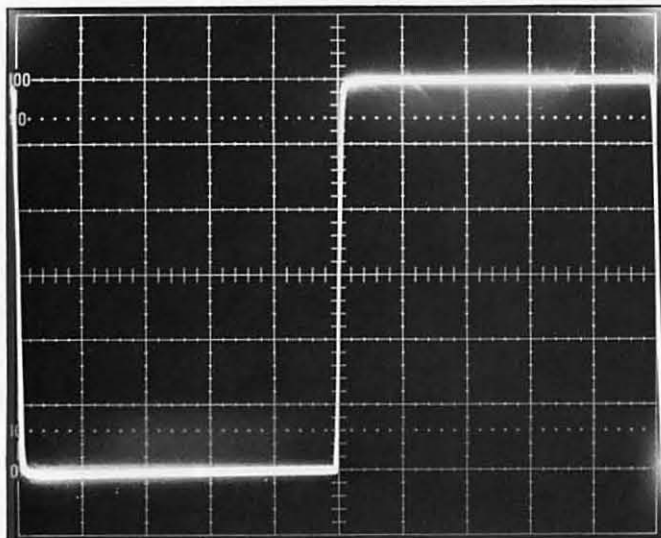
REGARDING THE OSCILLOSCOPE PHOTOS

Actual oscilloscope photos were made from a Tektronix Model 453A (certified calibration).

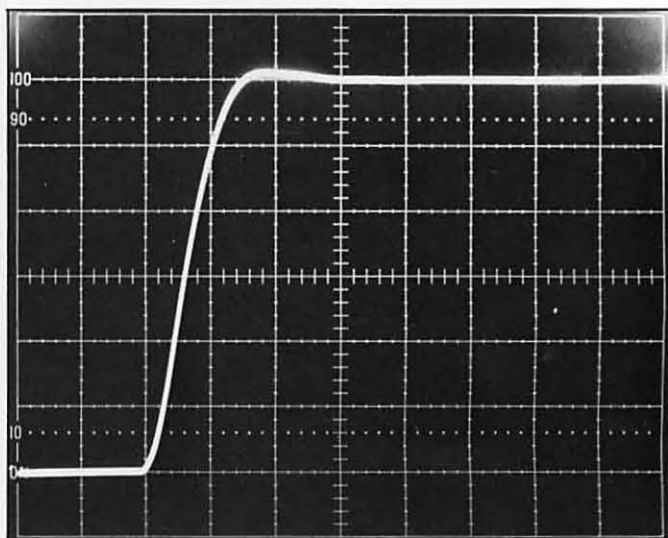
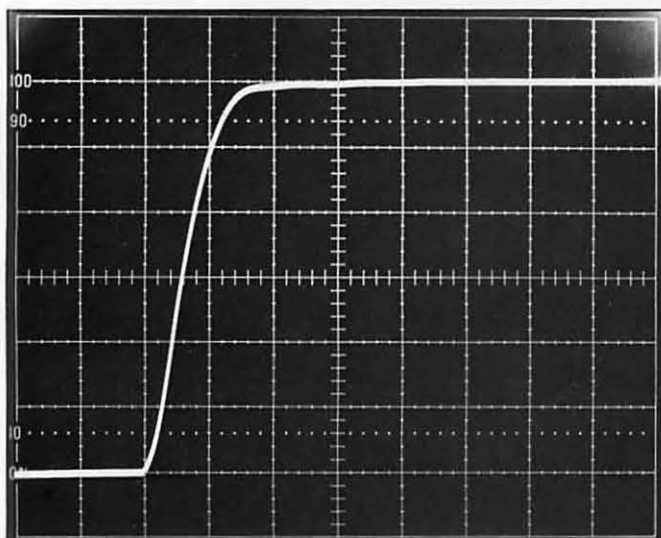
This column with 15k Ω load.

This column with no load.

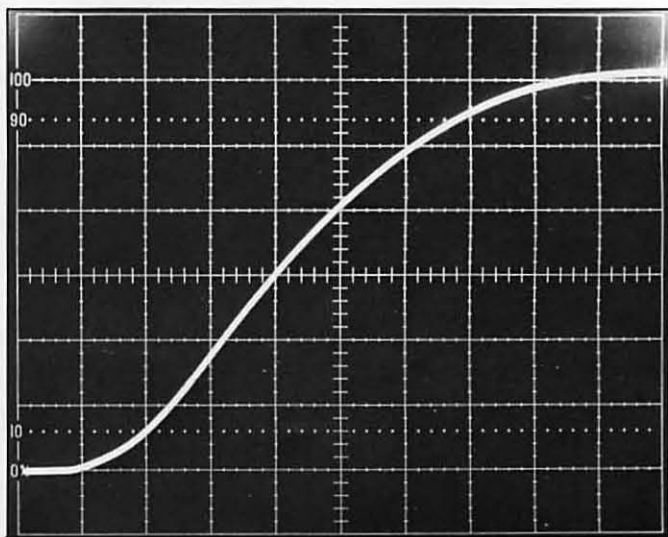
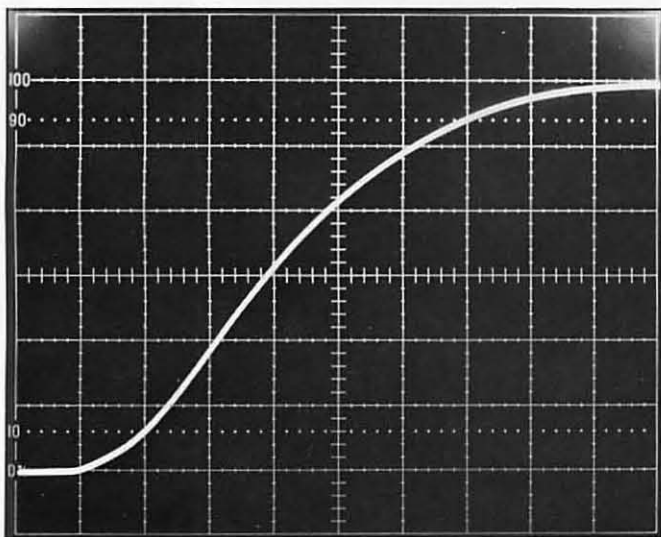
2kHz Square Wave



50 μ S/division



5 μ S/division

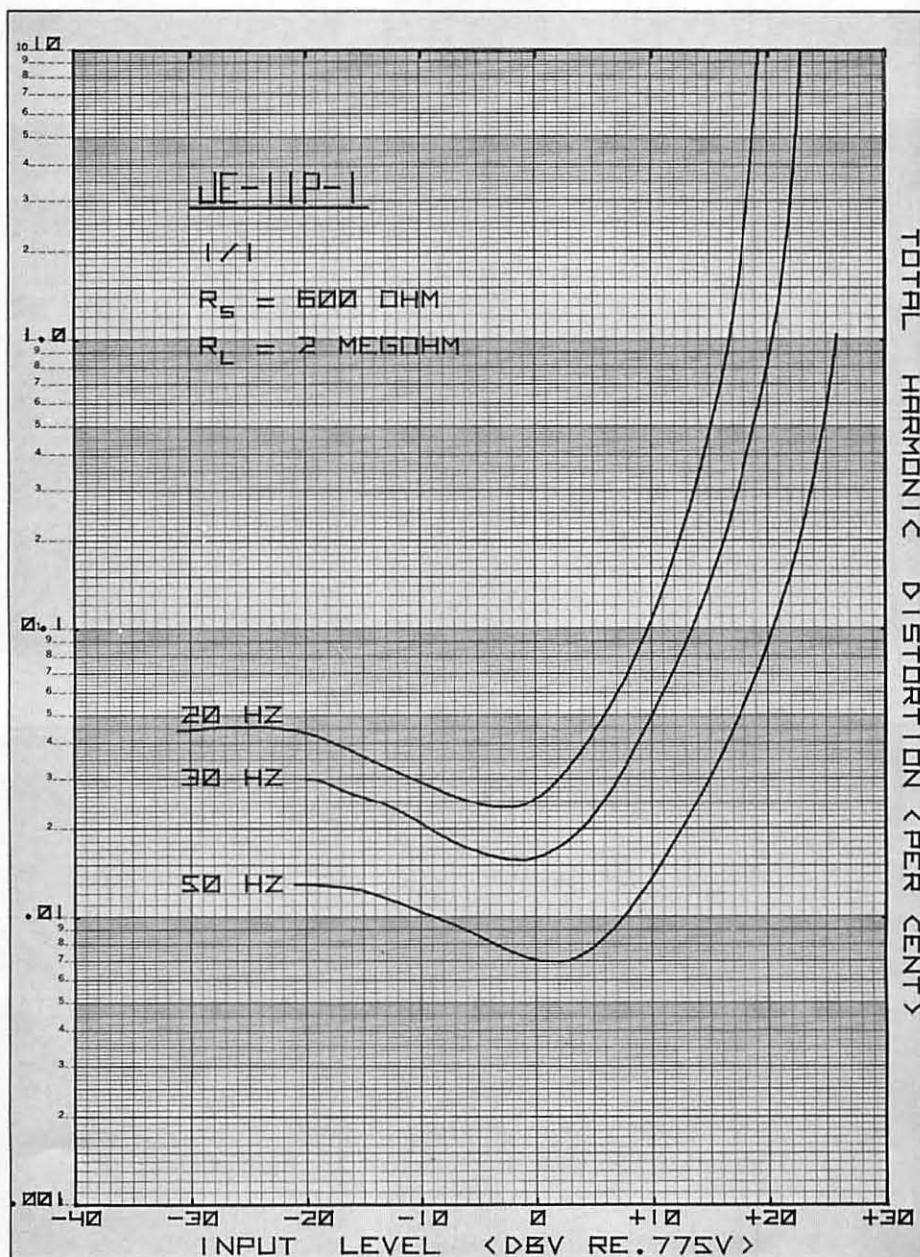


1 μ S/division

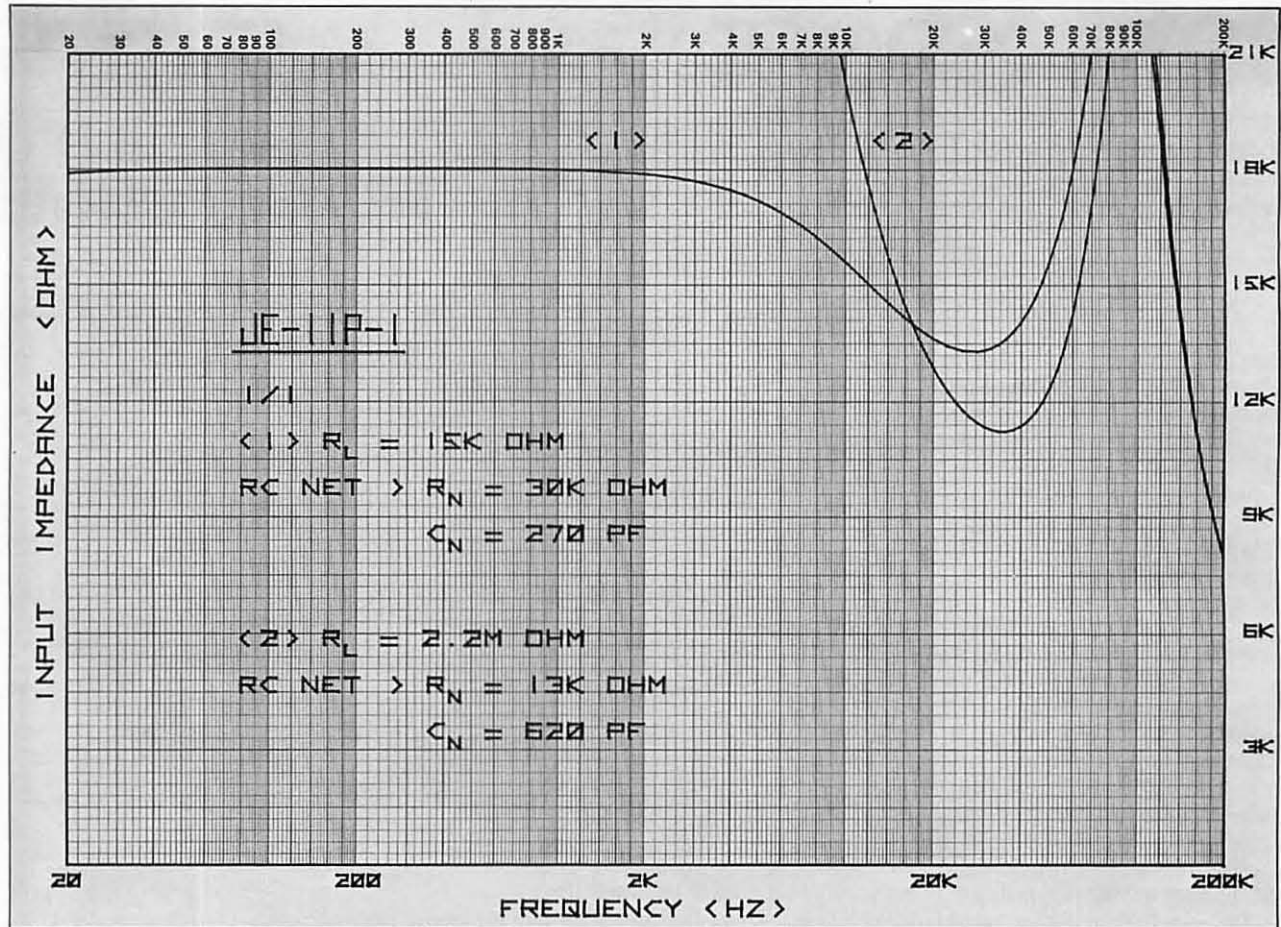
The response and impedance curves were generated by a Hewlett/Packard System 45 Desktop Computer and a 9872A Plotter. The curves are the calculated results from an equivalent circuit model using the H/P AC Circuit Analysis program. This method has made it possible to display the impedance curves up to 200kHz showing the secondary resonance and RC network damping effect. Measured data from many prototypes were used to derive the model to represent the average performance.

The distortion curves were generated by a Hewlett/Packard 9815A/9862A programmable calculator/plotter with a polynomial curve fit program. The distortion measurements employed a Sound Technology 1710A Analyzer. Verified accuracies are on the order of one pen line width.

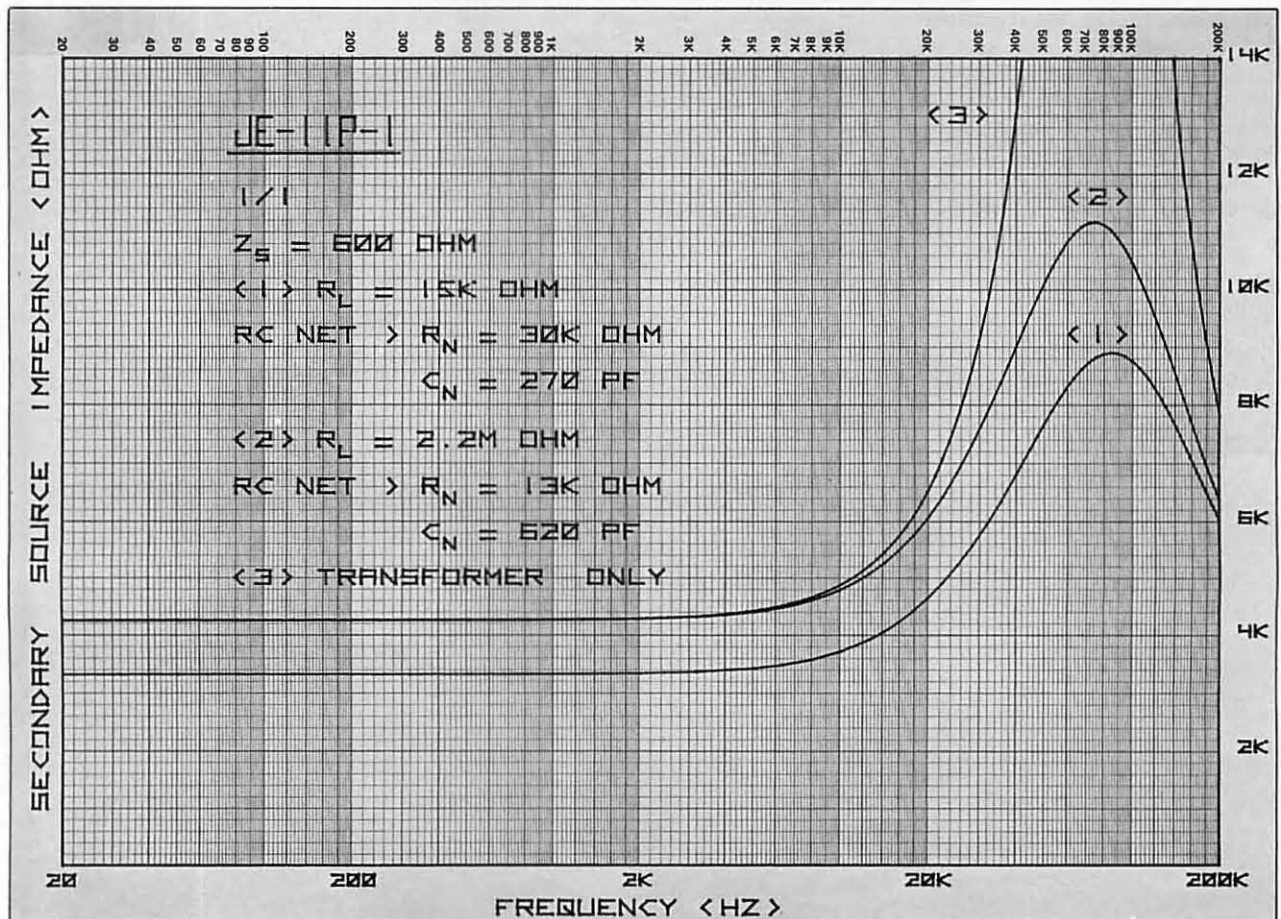
DISTORTION



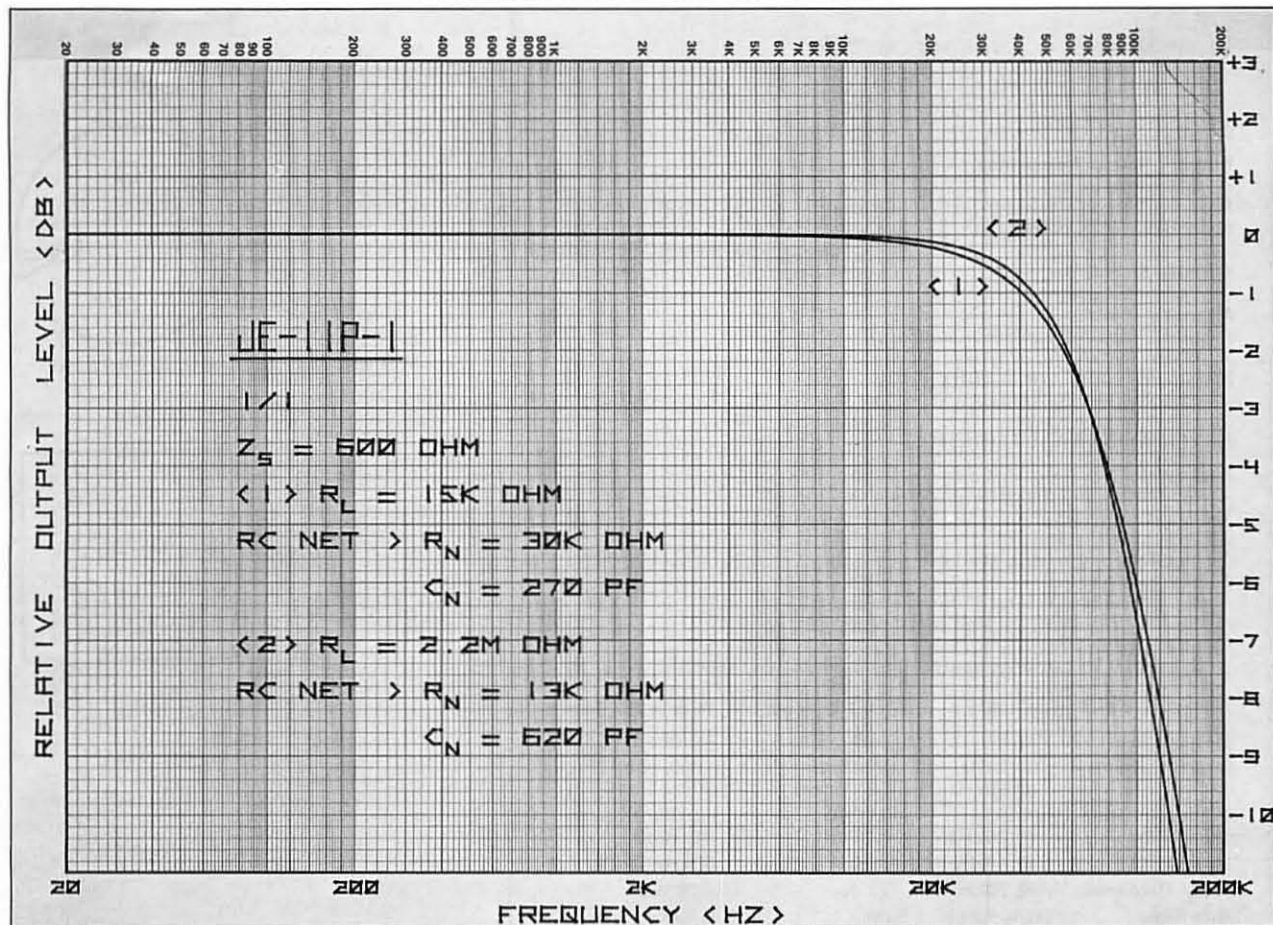
INPUT IMPEDANCE



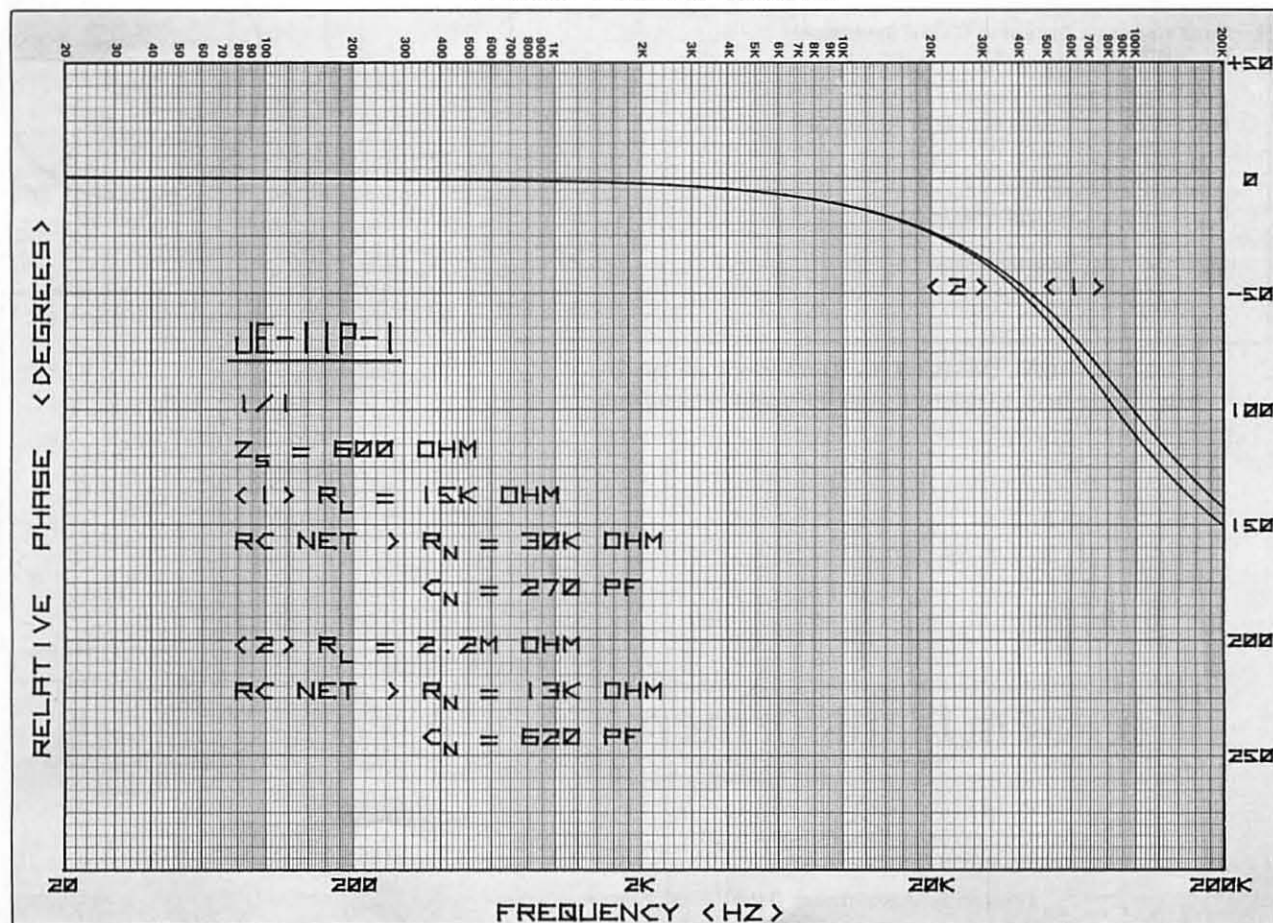
SECONDARY SOURCE IMPEDANCE



FREQUENCY RESPONSE



PHASE RESPONSE



JE-11P-1 GENERAL CHARACTERISTICS

Turns Ratio

1:1

Impedance Ratio

(15K/15K)

Primary Source Impedance

600 ohms or less

Secondary Load Resistor

15K ohms

> 25K ohms

Secondary RC Network

30K ohms, 270pF

13K ohms, 620pF
(most plug-in types have RC net built-in)

Faraday Shield

Separate Lead

Magnetic Shield

30dB, separate case lead (standard)

60dB, (octal plug-in types)

Maximum Input Level at 20Hz

+18dBv (Re: 0.775v)

PHYSICAL CHARACTERISTICS

Package

Mu-metal can (standard) or octal plug

Termination

Wire Leads (standard)

Octal plug types also available

Dimensions

1-1/8" diameter, 1-1/16" high (standard)

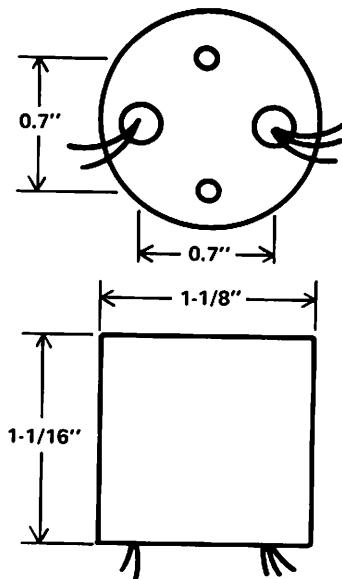
1-5/16" diameter, 2" high (octal plug)

Mounting (standard)

2 holes, 0.7" center-to-center/self-tapping screws supplied

TYPICAL PERFORMANCE

		With 15K load	With > 25K load
Voltage Gain		-2dB	-0.05dB
Input Impedance	@ 1kHz	18K ohms	166K ohm
	@ 10kHz	15.6K ohms	20K ohms
Frequency Response	@ 20Hz	-0.03dB	-0.03dB
(Re: 1kHz)	@ 20kHz	-0.25dB	-0.12dB
Bandwidth	@ -3dB	69kHz	69kHz
Phase Response	@ 20kHz	-23 deg	-24 deg
Rise Time	(10%-90%)	5μS	4.8μS
Overshoot		<1%	<2%
Secondary Source Impedance			
	4300 ohms @ 1kHz		
	4900 ohms @ 10kHz		
Total Harmonic Distortion (Below Saturation)			
	0.045% @ 20Hz		
	0.03% @ 30Hz		
	0.013% @ 50Hz		
Input Level @ 1% Saturation (dBv Re: 0.775v)			
	+17dBv @ 20Hz		
	+20dBv @ 30Hz		
	+26dBv @ 50Hz		
Common-Mode Voltage (maximum)			
	>200v peak		
Common-Mode Rejection Ratio			
	>75dB @ 1kHz		
	>55dB @ 10kHz		

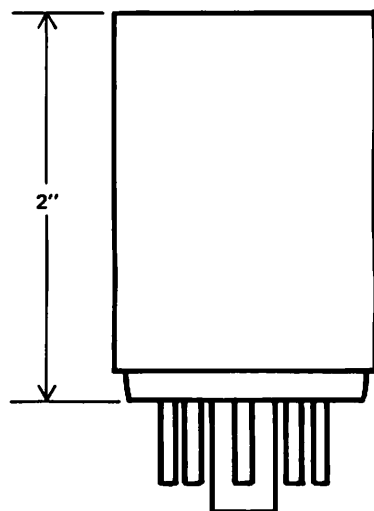
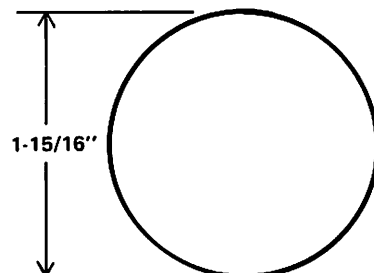


Mounting Holes

Clearance for #4 screw

Lead Holes

Use 0.35" hole to clear grommet



MECHANICAL DESIGNERS: Dimensions are approximate. Please have a transformer in hand when laying out panel cutouts.

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10735 BURBANK BOULEVARD
N. HOLLYWOOD, CALIFORNIA 91601
PHONE (213) 876-0059

(Visitors by Appointment Only)