

DMP 100

APPLICATIONS:

- pulse amplifiers
- baseband and video communications
- photodiode - photomultiplier preamps

FEATURES:

- extremely flat gain and linear phase response
- low distortion and excellent pulse fidelity
- instant recovery from overload signal levels

electrical characteristics $V_{cc} \pm 5$ to ± 15 , $R_L = R_S = 50$ Ohms, $T_A = 25^\circ C$

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
-3dB Bandwidth		475	500		MHz
Gain (non-inverting)	DC to 300MHz		20		dB
Gain Flatness	DC to 300MHz		$0 \pm .05$	$0 \pm .15$	dB
Group Delay	DC to 500MHz		$1.4 \pm .07$		ns
Third Order Intermodulation Intercept (two tone)	1Hz to 100MHz 100 to 500 MHz	28 20	30		dBm dBm
Second Harmonic Distortion	0dBm out, 1Hz to 500MHz		-60	-50	dBc
Third Harmonic Distortion			-60	-50	dBc
Input and Output Impedance	see Note 1		50		ohms
Power Output	at -1dB gain compression	12			dBm
Equivalent Input Noise	10Hz to 500MHz Bandwidth		20		μV
Noise Figure			6		dB
Dynamic Range			72		dB
Rise and Fall Times	10 to 90%, 2V step		600	750	ps
Overshoot and Aberrations	duration not to exceed 2ns			10	%
Settling Time	to .4%, 2V step (Note 2)			5	ns
Overload Recovery Time	V_{in} peak = $\pm .5V$		2		ns
DC Offset	input or output (adjustable)		± 5		mV
Output Voltage Temp. Coeff. (Referenced to input)			20		$\mu V/^\circ C$
Current Consumption			40		mA

7

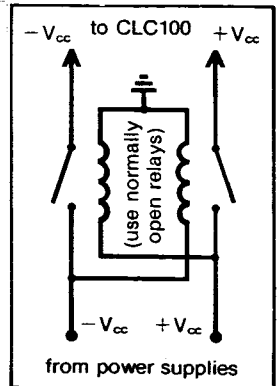
Note 1: Input impedance is dependent upon load impedance and output impedance is dependent upon source impedance. If the external termination impedance at one port varies up or down, the amplifier impedance at the opposite port will likewise change up or down. For example, with $R_S = 50$ and $R_L \infty$, $R_{in} = 100$ and $R_{out} = 50$. With $R_S = R_L = 75$, $R_{in} = R_{out} = 65$ approximately. Gain flatness and other specifications are typically the same in a 75 ohm system as they are in a 50 ohm system.

Note 2: Thermally induced drift will cause post settling drift of 2mV after 200us and 10mV after several seconds.

maximum ratings

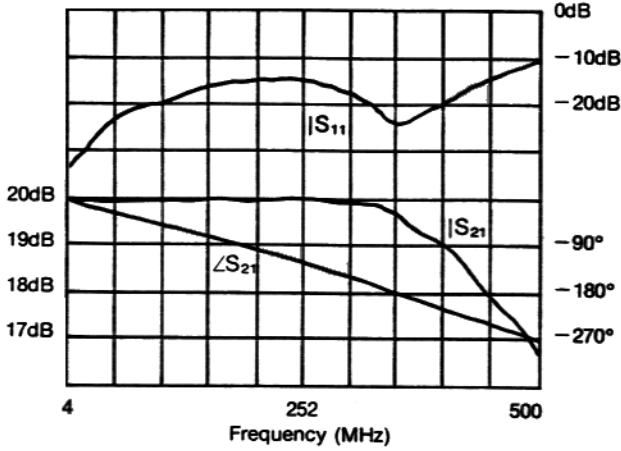
CAUTION: The positive and negative power supplies should come on and go off within one second of each other in order to prevent excessive power dissipation from damaging some internal components. If this requirement cannot be met, the following circuit should be used:

PARAMETER	CONDITION	RATING
V_{source} or V_{load}	Short to voltage source at input or output	$\pm 1.5V$
I_{source}	Short to current source at input	$\pm 100mA$
I_{load}	Short to current source at output	$\pm 20mA$
$\pm V_{cc}$		16V
Operating Temperature Range		$0^\circ C$ to $70^\circ C$
Storage Temperature Range		$-25^\circ C$ to $+85^\circ C$

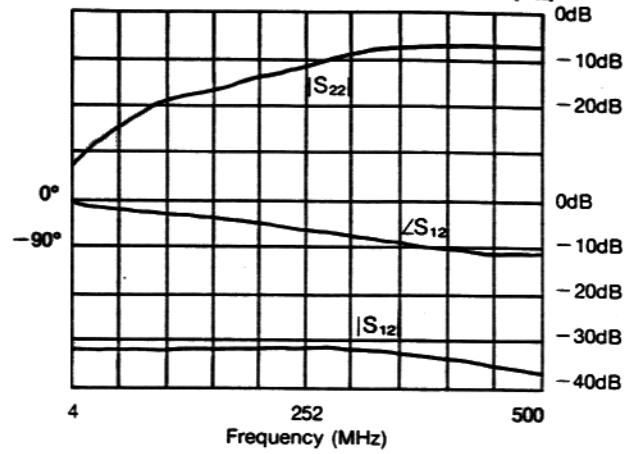


Both $\pm V_{cc}$ supply voltage inputs are diode clamped to ground to prevent damage to the amplifier in the event that the plus and minus supplies are interchanged. The supply current should be limited to 1 amp maximum in the event.

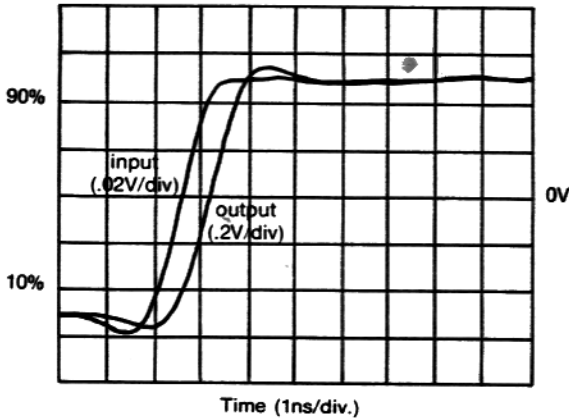
Forward Gain [S_{21}] and Input Return Loss [S_{11}]



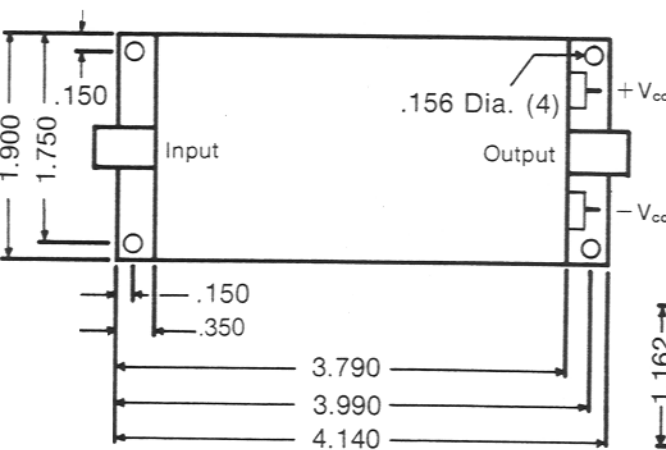
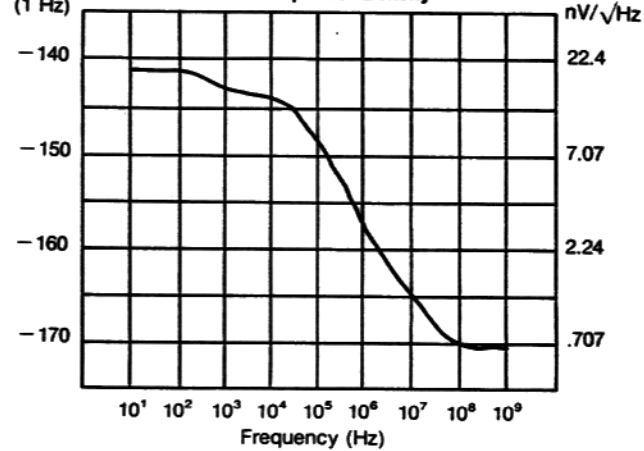
Reverse Isolation [S_{12}] and Output Return Loss [S_{22}]



Pulse Response



Noise Spectral Density



Case Dimensions (in inches)

Mass: 170 grams

BNC connectors are standard
SMA connectors are available

