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Min-Econ Amplifiers...



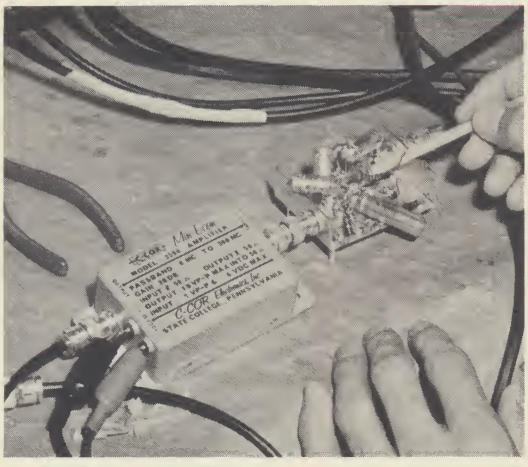
Small/Inexpensive...



Ready for delivery...

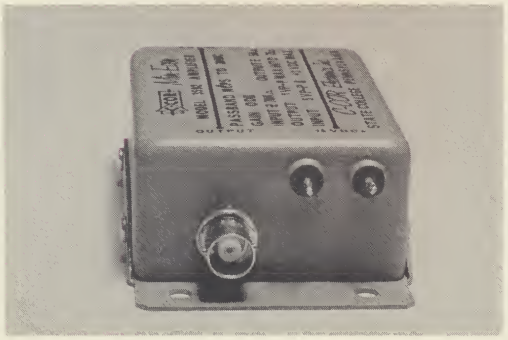


THE MIN-ECON CONCEPT

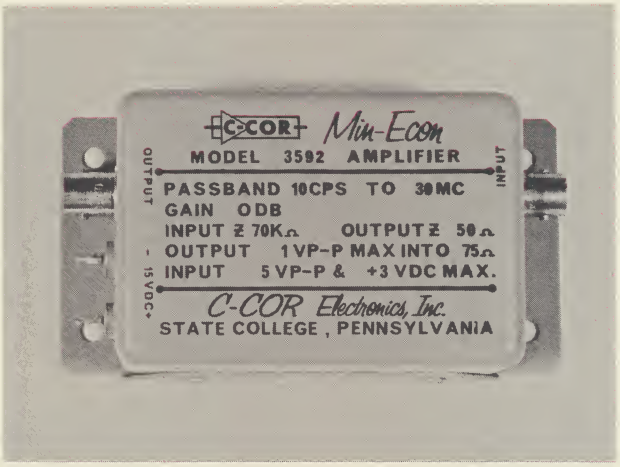


Adaptable...





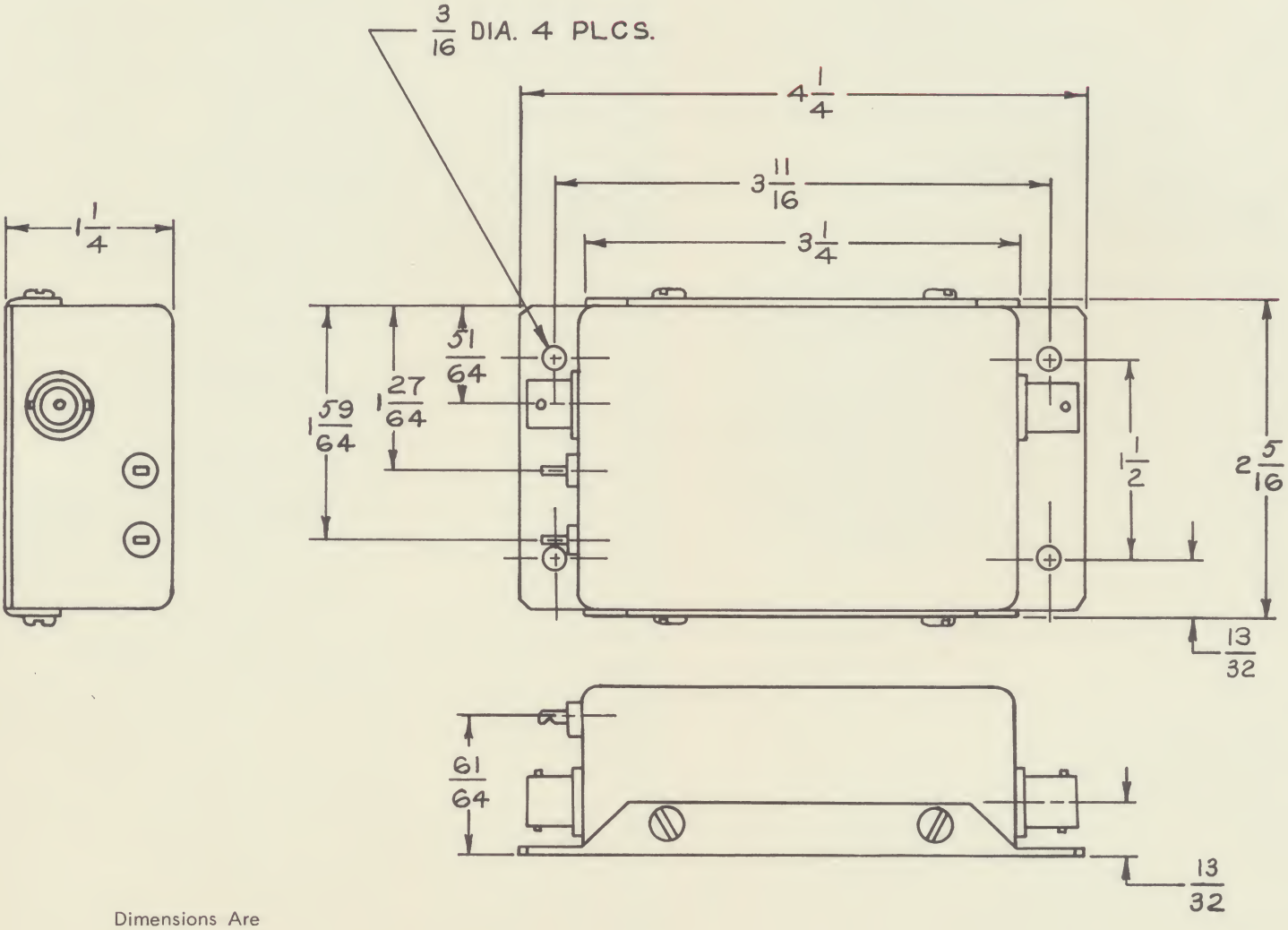
Min-Econ Amplifiers



Five words will tell you quite a bit about Min-Econ Amplifiers . . . but not the whole story. For instance, "In stock." That actually means 17 models sitting on the shelf. When you call in your order . . . it goes out the same day. "Small" . . . these are all 1¼" high x 2¼" wide x 3¼" long. That's small! "Inexpensive" . . . prices range from $65 to $195. "Adaptable" . . . there are 17 basic models with many standard modifications. These are not "flea power" devices, as are so many so-called "amplifier modules." These are silicon, solid-state amplifiers, built to do a job. If you don't see what you need, call us or your nearest C-COR representative for more information. Min-Econ is the perfect solution for laboratory, breadboarding or systems amplification.

MIN-ECON AMPLIFIERS MECHANICAL DETAILS AND OUTLINE DRAWING

Below is an outline drawing of the Min-Econ package. The case is brass, with a finish of light gray paint, per MIL-E-15090B, Type 3, Class 2, applied over a zinc-chromate primer. Input and output connectors are type BNC. Power is supplied through two feed-through, bypassing solder terminals. Total volume of the Min-Econ package is less than 10 cubic inches, excluding flanges and connectors.



Dimensions Are Approximate

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Prices and Specifications Subject to Change Without Notice.

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MIN-ECON 2866

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May 25, 1966

CURRENT MIN-ECON AMPLIFIERS and STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3580	Wideband Amplifier	Passband: 25 kHz to 150 mHz Gain: 20 db Impedances: 50 ohms	+15 VDC BNC	$150
3580-A	Wideband Amplifier	Same as 3580	+28 VDC BNC	$160
3581	Wideband Amplifier	Passband: 20 Hz to 60 mHz Gain: 20 db Impedances: 75 ohms	+10 VDC BNC	$70
3581-E	Wideband Amplifier	Same as 3581 except 50 ohms	Same	$75
3581-A	Restricted passband, increased output	Passband: 500 kHz to 30 mHz Gain: 20 db Impedances: 75 ohms Output: 1.5 V p-p	Same	$85
3581-B	Reduced low frequency response	Passband: 10 mHz to 60 mHz, ± 0.5 db Down 30 db at 100 kHz Gain: 20 db Impedances: 75 ohms VSWR: 1.5:1	Same	$80
4581-4	Multiple output Wideband Amplifier	Four Model 3581 in instrument case, with regulated power supply	105-125 V 50-400 cps BNC	$480
3581-F	Very Flat Wideband Amplifier	Passband: Same as 3581 except ± .2 db flatness, 20 mHz to 50 mHz	+10 VDC BNC	$90
3581-D	Increased gain	Passband: 1 kHz to 5 mHz ± 1 db Gain: 30 db Impedances: 150 ohms in 75 ohms out Noise Figure: 10 db	Same	$90

CURRENT MIN-ECON AMPLIFIERS
AND
STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3582	Low Distortion Video Amp	Passband: 20 Hz to 12 mHz Gain: 10X Impedances: 4700 ohms in 50 ohms out Distortion: 1% for 3 V p-p out	+25 V BNC	$80
3582-A	Restricted Bandpass	Passband: 1 kHz to 4 mHz Gain: 30X	+28 V	$90
3583	Low Noise 2 to 30 mHz Amplifier	Passband: 1.5 mHz to 35 mHz Gain: 20 db Impedances: 50 ohms Noise Figure: 5.5 db max.	+10 V BNC	$75
3583-A	Lower Noise	Same as 3583 except noise figure 4 db max.	Same	$125
3584	Low Noise UHF Preamp	Center freq: 250 to 500 mHz Bandwidth: 10% nominal Gain: 15 to 20 db Noise Figure: 4 db Impedances: 50 ohms	+15 V BNC	$160
3584-X	Same as 3584 with tighter specifications	Same basic specifications as 3584. Gain to 27 db; noise figure to 2.5 db; bandwidth to 3%; VSWR to 1:2/1	+15 V BNC	$300 to $500 Typical
3585	Pulse and Video Amplifier	USN preferred CKT PSC 20 Gain: 20X, neg pulse only Output: 55 V peak Rise Time: 100 ns Fall Time: 70 ns Impedances: 12 K in, 1 K out	+100 VDC BNC	$90
3586	Pulse and Video Amplifier	USN preferred CKT PSC 19 Gain: 10X pos. or neg. Output: ± 6 volt peak Rise Time: 130 ns Fall Time: 100 ns	+25 VDC BNC	$60
3587-A	High Level Pulse Amplifier (Non-inverting)	Gain: 10 to 250X (Variable) Output: 25 V pos. pulse Rise Time: Less than 125 ns Pulse Width: 250 ns max. Rep Rate: 300 kHz (Useful for modulating Fairchild scope)	+50 VDC BNC	$80

CURRENT MIN-ECON AMPLIFIERS
AND
STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3587-B	High Level Pulse Amplifier (Inverting)	Gain: .8 to 4X Output: 20 volt pos. pulse Rise Time: Less than 30 ns Width: 390 ns max. Rep Rate: 30 kHz	+50 VDC BNC	$80
3589	Ultra-stable Feedback Amplifier	Passband: 10 Hz to 1.5 mHz Gain: 100X Impedance: 1 meg. in; 100 ohms out	-36 VDC BNC	$90
3589-A	Same as 3589	Output: 15 V p-p into 10 K	-28 VDC BNC	$85
3592	Impedance Transforming Video Amp	Passband: 10 Hz to 30 mHz Gain: Unity Impedances: 70K in, 50 out Output: 1 V p-p, 1% THD	+15 VDC BNC	$85
3592-A	Same as 3592	Same as 3592, except adapted as Preamp for C-COR 1319-F	+22.5 V UHF	$85
3592-B	Similar to 3592	Same as 3592, except inverts input signals	+15 VDC	$95
3592-D	Same as 3592	Same as 3592	+24 VDC BNC	$85
3593	Video Amplifier with adjustable cable equalization	Passband: 5 Hz to 20 mHz Gain: 0 db Equalization: 0 to 4 db @ 10 mHz Impedances: 75 ohms Output: 1 V p-p	-15 VDC BNC	$70
3593-A	Same as 3593	Same as 3593 except 3 V p-p output. 0.3° max. diff. phase at 1 V p-p	+24 VDC BNC	$90
3594	VHF Low Noise Preamplifier	Center Frequency: 100 to 250 mHz Bandwidth: 5% nominal Gain: 20 db nominal Noise Figure: 3.5 db Impedances: 50 ohms	+10 VDC BNC	$150
3594-A	VHF Low Noise Preamplifier	Same as 3594, except gain 30 db nominal	+15 VDC BNC	$160

CURRENT MIN-ECON AMPLIFIERS
AND
STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3594-X	VHF Low Noise Preamplifier	3594 with tightened specifications. VSWR to 1.2/1; N.F. to 2.5 db; bandwidth to 3%	+15 VDC BNC	$300 to $500 Typical
3595	Low Distortion Amplifier. Audio and Ultrasonic Frequencies	Gain: 10X Passband: 50 Hz to 120 kHz Impedances: 5000 ohms in 10 ohms out Output: 1 V RMS for 1% THD	+15 VDC BNC	$85
3596	Ultra Wideband Amplifier	Passband: 8 mHz to 300 mHz Gain: 20 db nominal Impedances: 50 ohms Output: 1 V p-p	+15 VDC BNC	$175
3596-A	Narrow Pulse	Similar to 3596 except response to 100 kHz and aligned for pulse response rise time: 2 ns, ± .5 V peak.	+15 VDC BNC	$195
3597	Low Noise Video Amplifier for Detector Use	Passband: 300 Hz to 2.5 mHz Volt gain: 100 X Noise Figure: 2 db with 2000 ohm source Impedance: 20 K approx. input, 35 ohms out Output: ± 1 V peak across 1 meg.	-15 VDC BNC	$125
3599-X	Broadband Amplifier, 100 Hz to 30 mHz with internal filter to produce a variety of custom bandpass characteristics.	Typical specifications: Gain: 8 to 10 db adjustable Impedance: 75 ohms Filter: Bandpass, 14 mHz to 16 mHz, sharp cutoff Output: 2 V p-p matched 4 V p-p low impedance	+12 VDC BNC	$100 Basic Amp. $130 with filter

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UNIVERSAL WIDE-BAND AMPLIFIERS

Both the C-COR Model 3580 and Model 3581 Min-Econ amplifiers are low-pass, high output amplifiers suitable for a variety of laboratory and system applications. Applications include amplification of fast pulses, such as those encountered in photomultiplier and high-resolution video circuits, as well as amplification of multi-channel sine wave signals.

SPECIFICATIONS:

	Model 3580	Model 3581
3 db Passband:	25 KHz-150 MHz	20 KHz-60 MHz
Gain:	20 db	20 db
Input and Output Impedance:	50 ohms nominal	75 ohms nominal
Output Capability:	1 volt p-p into matched load	
Noise and Hum:	35 uv maximum	20 uv maximum
Rise Time:	4 ns maximum	8 ns maximum
Temperature Range:	-20° C to +70° C	0° C to +50° C
Power Required:	+15 VDC @ 40 ma nom.	+10 VDC @ 25 ma nom.

Modifications of the above amplifiers are available as follows:

Model 3580-A: Same as 3580 but takes +28 VDC for power.

Model 3581-E: Same as 3581 except impedances are 50 ohms.

Model 3581-A: Restricted passband, increased output.
Passband: 500 KHz to 30 MHz
Gain: 20 db; Impedances: 75 ohms
Output: 1.5 V p-p

Model 3581-B: Reduced low frequency response.
Passband: 10 MHz to 60 MHz, ± 0.5 db
Down 30 db at 100 KHz
Gain: 20 db; Impedances: 75 ohms
VSWR: 1.5:1

Model 3581-D: Increased gain. Gain: 30 db
Passband: 1 KHz to 5 MHz, ± 1.0 db
Impedances: 150 ohms IN, 75 ohms OUT
Noise Figure: 10 db

Model 4581-4: Multiple output: Four Model 3581's in instrument case, with regulated power supply; 105-125 VAC, 50-400 cps.

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LOW DISTORTION VIDEO AMPLIFIER, MODEL 3582

This amplifier is a very linear, high output unit, featuring low distortion.

SPECIFICATIONS:

3 db Passband:	20 HZ to 12 MHz
Flatness:	± 0.5 db, 60 HZ to 10 MHz
Voltage Gain:	10X, ± 10% with 50 ohm source
Input Impedance:	4700 ohms, shunted by 8 pf
Output Impedance:	50 ohms
Output Capability:	3 volts p-p into 50 ohms before clipping
	2 volts p-p into 50 ohms for 1% THD
	5 volts p-p into 75 ohms before clipping
	3 volts p-p into 75 ohms for 1% THD
Power Required:	+25 volts DC ± 5%, @ 70 ma nominal

Modifications of the above amplifier are available as follows:

Model 3582-A:	Restricted passband:	1 KHz to 4 MHz
	Gain:	30X

HF BAND AMPLIFIERS, MODEL 3583

This Min-Econ unit covers the entire HF band, broadband, and is optimized for flat response, low distortion, and low noise figure.

SPECIFICATIONS:

3 db Passband:	1.5 MHz to 35 MHz
Gain:	20 db minimum
Output Capability and Distortion:	1 volt p-p before clipping
	0.5 volt p-p at 1% THD (at 5 mc)
Input and Output Impedances:	50 ohms
Input and Output VSWR:	2 to 1 max. across band
Noise Figure:	5.5 db max.
Power Required:	+10 volts DC @ 30 ma nominal

Modifications of the above amplifier are available as follows:

Model 3583-A:	Same as 3583 except noise figure is 4 db max.

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BANDPASS AMPLIFIER - UHF BAND, MODEL 3584

This Min-Econ unit provides relatively narrow band, low noise characteristics for communication work and can be factory aligned to any frequency in its band.

SPECIFICATIONS:

Center Frequency:	250 MHz to 500 MHz (please specify)
3 db Bandwidth:	10% nominal of f_c (please specify)
Gain:	15 to 20 db
Output Capability:	0.5 V p-p into 50 ohms (-2 dbm)
Input and Output Impedances:	50 ohms
Input and Output VSWR:	1.5 to 1 typical
Noise Figure:	4 db max.
Power Required:	+15 VDC @ 8 ma nominal

Modifications of the above amplifier are available as follows:

Model 3584-X:	Same as 3584 except: (consult factory)
	Gain to 27 db
	Noise Figure to 2.5 db
	Bandwidth to 3%
	VSWR to 1:2/1

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HIGH LEVEL PREFERRED VIDEO AMPLIFIER, MODEL 3585
PREFERRED VIDEO PULSE AMPLIFIER, MODEL 3586

These are U. S. Navy preferred circuits....PSC-19 and PSC-20.... available in the Min-Econ package as Models 3585 and 3586.

Model 3585, PSC-19, is intended for CRT intensity modulation, or wherever a large negative pulse is required. It is a linear pulse amplifier with excellent temperature-gain stability characteristics.

Model 3586, PSC-20, is useful as a video or general purpose non-inverting pulse amplifier, and exhibits excellent temperature-gain stability characteristics.

SPECIFICATIONS:

Model Number:	3585	3586
USN Preferred Circuit Designation	PSC-20	PSC-19
3 db Passband (adjusted for pulse response):	10 Hz to 3 MHz	10 Hz to 3 MHz
Voltage Gain:	20X	10X
Load Z for Rated Gain:	60 K ohms	20 K ohms
Output Capability:	55 volts negative pulse	± 6 volt pulse
Load Z for Actual Output:	20 K ohms	10 K ohms
Input Impedance:	12 K ohms shunted by 40 pf	1 K ohm shunted by 50 pf
Output Impedance:	1 K ohm nominal	1 K ohm nominal
Rise Time:	100 ns	130 ns
Fall Time:	70 ns	100 ns
Overshoot:	5%	10%
Droop:		2% for 100 ns pulse
Delay:		30 ns nominal
Temperature Range:	-55° C to +125° C	-55° C to +125° C
Gain Variation over Rated Temperature Range:	-10% to +5%	-5% to +3%
Power Required:	+100 VDC @ 20 ma nominal	+25 VDC @ 15 ma nominal

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MIN-ECON PULSE AMPLIFIERS
MODELS 3587-A and 3587-B

The Models 3587-A and B are pulse amplifiers designed for such applications as gating and intensity modulation of cathode ray tubes. (They are particularly adaptable to use with Fairchild oscilloscopes.) Both models include gain adjustment and provide for over 25 volt positive output pulse with good rise time and flatness. Model 3487-A is non-inverting and 3587-B inverts the input pulse.

SPECIFICATIONS:

	Model 3587-A	Model 3587-B
Voltage Gain:	10X to 250X (adj.)	1 to 4X (adj.)
Rise Time:	50 ns	30 ns
Output:	25 volts positive	25 volts positive
Rate Load:	500 K and 50 pf	500 K and 50 pf
Input Impedance:	100 ohms	100 ohms
Max. Rep Rate:	300 KC	30 KC
Max. Pulse Width:	250 ns	400 ns
Output Impedance:	150 ohms	50 ohms
Gain adjustment is by means of an externally mounted potentiometer.		
Power Supply:	+50 VDC, 25 ma	+50 VDC, 25 ma
Connectors:	BNC for signal, solder terminals for DC	BNC for signal, solder terminals for DC

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ULTRA-STABLE FEEDBACK AMPLIFIER, MODEL 3589

The wide-band feedback amplifier, Model 3589, is designed to give extremely flat response and an ultra-stable gain characteristic over a wide temperature range. It provides a substantial output level, and features a high input impedance with input overload protection. Model 3589, when used in conjunction with a meter rectifying circuit, is particularly well suited as a VTVM amplifier.

SPECIFICATIONS:

0.5 db Passband:	10 Hz to 1.5 MHz
Flatness:	± 0.1 db, 10 Hz to 500 KHz
Voltage Gain:	100X
Input Impedance:	1 megohm, shunted by 35 pf nom.
Equivalent Input Noise:	50 uv rms
Output Capability:	15 volts p-p up to 500 KHz 5 volts p-p above 500 KHz
Load Impedance for Rated Output:	10 K ohms, shunted by 25 pf
Square Wave Response:	15% tilt for 60 Hz square wave
Stabilizing Time:	5 seconds after power applied
Temperature Range:	-55° C to +65° C
Power Required:	-36 volts DC ± 5% @ 15 ma nom.

Modification of the above amplifier is available as follows:

Model 3589-A:	Same as 3589 except power requirement is -28 VDC ± 1.0%.

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IMPEDANCE TRANSFORMATION AMPLIFIERS, MODEL 3592

Applications for low-pass amplifiers frequently arise where a high input impedance is required. C-COR Model 3592 amplifier was designed specifically for this use. It provides an economical means for converting many C-COR amplifiers to high impedance inputs. It is also useful where power gain rather than voltage gain is required. Model 3592-A is specifically intended for use with C-COR Model 1319F Video Amplifier.

SPECIFICATIONS:

3 db Passband:	10 Hz to 30 MHz
Flatness:	± 0.5 db, 10 Hz to 10 MHz
Voltage Gain:	Unity (1X) into matched load
Input Impedance:	70 K ohms min, shunted by 6 pf
Output Impedance:	50, 75 or 100 ohms (customer specify)
Equivalent Input Noise:	100 uv nominal
Output Capability:	1 v p-p into 75 or 100 ohms 0.5 v p-p into 50 ohms
Distortion:	1% THD typical, 10 cps to 10 mc, at rated output, all models
Rise Time:	20 ns max.
Overshoot:	1% max.
Tilt:	1% for 60 Hz square wave
Power Required:	+15 volts DC @ 20 ma nominal

Modifications of the above amplifier are available as follows:

Model 3592-A:	Same as 3592 except output Z is 75 ohms; delivers 1 v p-p into 75 ohms. Power requirement is +22.5 VDC @ 20 ma, uses SO-239 (UHF) connectors, and is provided with a power cord for powering from the Model 1319F.
Model 3592-D:	Same as 3592 except power requirement is +24 VDC.
Model 3592-E:	Same as 3592 except gain is 2X, input impedance is 47 K ohms, shunted by 8 pf and power requirement is +26.5 VDC.

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VIDEO LINE ADJUSTABLE EQUALIZING AMPLIFIER, MODEL 3593

The C-COR Model 3593 provides a means for compensating for the characteristic increasing of attenuation with frequency of coaxial cables. The degree of equalization can be adjusted with a single internal control for each particular application. For example, this unit will equalize about 600 feet of RG-11/U coaxial cable to 10 MHz.

SPECIFICATIONS:

3 db Passband:	5 Hz to 20 MHz
Flatness:	± 0.5 db, 10 Hz to 10 MHz
Gain:	Nominally 0 db (unity gain) at 1 kc
Passband Tilt:	Adjustable from flat to +4 db (at 10 MHz)
Output Capability:	1 volt p-p into 75 ohms
Input and Output Impedance:	75 ohms
Tilt:	1% max for 60 Hz square wave
Power Required:	-15 volts DC @ 50 ma nominal

NOTE: Output is DC coupled, and has approximately 0.75 VDC component.

Modification of the above amplifier is available as follows:

Model 3593-A: Same as 3593 except delivers 3 V p-p out; differential phase is 0.3° max. at 1 V p-p out. Power requirement is +24 VDC.

BAND PASS AMPLIFIER - VHF BAND, MODEL 3594

This Min-Econ unit provides relatively narrow band low noise characteristics for communications work and can be supplied factory aligned to any frequency in its band.

SPECIFICATIONS:

Center Frequency:	100 MHz to 250 MHz (please specify)
3 db Bandwidth:	Nominally 5-10% fc (please specify)
Gain:	20 db minimum up to 100 MHz 12 db minimum at 250 MHz
Output Capability:	0.5 volts p-p into 50 ohms (-2 dbm)
Input and Output Z	50 ohms
Input and Output VSWR:	1.5 to 1 typical
Noise Figure:	3.5 db nominal at 250 mc
Power Required:	+10 VDC @ 2.0 ma

Modification of the above amplifier is available as follows:

Model 3594-A: Same as 3594 except gain is 30 db nominal and power is +15 VDC and 8 ma nominal.

Model 3594-X: Same as 3594 except tighter specifications: VSWR 1.2/1; Noise figure to 2.5 db; Bandwidth to 3%. Power requirement is +15 VDC.

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LOW DISTORTION FEEDBACK AUDIO AMPLIFIER, MODEL 3595

The C-COR Model 3595 amplifier covers audio and ultrasonic frequencies and is capable of supplying 1 volt rms across 50 ohms at less than 0.3% THD.

SPECIFICATIONS:

3 db Passband:	50 Hz to 120 KHz
Flatness:	± 0.5 db from 60 Hz to 100 KHz
Voltage Gain:	10X min.
Equivalent Noise and Hum:	20 uv from 50 ohm source
Input Impedance:	5000 ohms, shunted by 10 pf
Output Impedance:	10 ohms or less to 100 KHz
Output Capability:	1 volt rms into 50 ohms
Total Harmonic Distortion at Rated Output:	Down 50 db min.
Power Required:	+15 VDC @ 60 ma nominal

ULTRA-WIDEBAND AMPLIFIER, MODEL 3596

The Model 3596 Min-Econ Amplifier has high output capability in the frequency range from 8 MHz to 300 MHz. It is suitable for broadband sweeping applications or any other broadband amplification requirement.

SPECIFICATIONS:

3 db Passband:	8 MHz to 300 MHz
Flatness:	± 1.0 db from 10 MHz to 250 MHz
Gain:	18 db min., 20 db nominal
Output Capability:	1 V p-p into 50 ohms
Input and Output Impedance:	50 ohms nominal
Input VSWR:	1.5:1 typical, 2.0:1 max.
Output VSWR:	2.0:1 max.
Broadband Noise:	30 uv rms
Power Required:	+15 VDC @ 50 ma nominal
Connectors:	Input and Output, BNC Feed thru solder terminals for power
Temperature:	-20° C to +50° C

A modification is available on the Model 3596 for narrow pulse application as follows:

Model 3596-A: Low end response to 100 KHz. Pulse rise time: 2 ns. Pulse amplitude out: ±0.5 V peak. All other specifications same as in Model 3596.

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LOW NOISE VIDEO DETECTOR AMPLIFIER, MODEL 3597

This Min-Econ unit is particularly useful in amplifying pulse signals demodulated from pulse modulated carriers where tangential sensitivity and wide bandwidth are important. This Model 3597 also provides high gain and has adequate output capability to drive an amplifier or an oscilloscope.

SPECIFICATIONS:

3 db Bandwidth:	300 Hz to 2.5 MHz
Voltage Gain:	100X
Noise Figure:	2 db (10 uv) with 2 K ohm source
Pulse Repetition Rate:	300 KHz max. for PW of 10 usec
Input Impedance:	2 K ohms or greater
Output Impedance:	33 ohms
Output Load:	2 K ohms minimum
Output Level:	2 V p-p across 1 megohm
Input Signal Level:	10 uv to 30 uv
Power:	-15 VDC @ 25 ma

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MIN-ECON DATA SHEET

3595
3596

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LOW DISTORTION FEEDBACK AUDIO AMPLIFIER, MODEL 3595

The C-COR Model 3595 amplifier covers audio and ultrasonic frequencies and is capable of supplying 1 volt rms across 50 ohms at less than 0.3% THD.

SPECIFICATIONS:

3 db Passband:	50 Hz to 120 KHz
Flatness:	± 0.5 db from 60 Hz to 100 KHz
Voltage Gain:	10X min.
Equivalent Noise and Hum:	20 uv from 50 ohm source
Input Impedance:	5000 ohms, shunted by 10 pf
Output Impedance:	10 ohms or less to 100 KHz
Output Capability:	1 volt rms into 50 ohms
Total Harmonic Distortion at Rated Output:	Down 50 db min.
Power Required:	+15 VDC @ 60 ma nominal

ULTRA-WIDEBAND AMPLIFIER, MODEL 3596

The Model 3596 Min-Econ Amplifier has high output capability in the frequency range from 8 MHz to 300 MHz. It is suitable for broadband sweeping applications or any other broadband amplification requirement.

SPECIFICATIONS:

3 db Passband:	8 MHz to 300 MHz
Flatness:	± 1.0 db from 10 MHz to 250 MHz
Gain:	18 db min., 20 db nominal
Output Capability:	1 V p-p into 50 ohms
Input and Output Impedance:	50 ohms nominal
Input VSWR:	1.5:1 typical, 2.0:1 max.
Output VSWR:	2.0:1 max.
Broadband Noise:	30 uv rms
Power Required:	+15 VDC @ 50 ma nominal
Connectors:	Input and Output, BNC Feed thru solder terminals for power
Temperature:	-20° C to +50° C

A modification is available on the Model 3596 for narrow pulse application as follows:

Model 3596-A: Low end response to 100 KHz. Pulse rise time: 2 ns. Pulse amplitude out: ±0.5 V peak. All other specifications same as in Model 3596.

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MIN-ECON FILTER AMPLIFIER, MODEL 3599-X

The Model 3599 Amplifier is a multi-purpose FILTER amplifier designed for application requiring filtering and gain. It contains an integrated broad band, low pass amplifier, a modular filter unit, and an output amplifier matching stage. The unit may be supplied with a variety of filter designs or may be purchased less filter when the user desires to tailor the transmission characteristics to his individual needs. Filtering may be bandpass, low pass, high pass, or band stop.

GENERAL SPECIFICATIONS:

The Model 3599 is available in a wide variety of combinations of gain, bandwidth impedance, and filter configurations. The specifications listed below indicate the range of parameters obtainable. Refer to current list of Min-Econ amplifiers for standard designs or contact the factory for a quotation on your special modification.

Gain: Nominally 6 db min. to 20 db max. with possibility of 5 db adjustment range by screw driver control.

Passband: 1 KHz to 30 MHz. Lower frequency may be extended by the use of external coupling capacitors.

Output Capability:

Volts p-p	Load	Output Impedance
2	75 ohms	Matched
3	75 "	15 ohms
1.5	50 "	Matched
2.2	50 "	15 ohms

Filter Characteristics:

Filter impedance is 500 or 1000 ohms. Design can be low pass, bandpass, high pass, or band stop. Filter module is 1" x 1" x 2-3/16" and will accommodate a 5-pole LC filter at 15 MHz center frequency.

Input Impedance: 50, 75, or 500 ohms

Size: Standard Min-Econ package

Connectors: BNC for signals, solder terminals for power.

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MIN-ECON POWER SUPPLY

Model PS-22A

This power supply has been developed for use with the popular C-COR Min-Econ line of amplifiers. It is capable of powering several amplifiers simultaneously, for most models. Compact and efficient, the Model PS-22A retains the Min-Econ tradition of small size and low cost.

SPECIFICATIONS:

Output Capability:	Available current is shown for each of the factory-set output voltages: 10 vdc @ 90 ma 15 vdc @ 90 ma 22.5 vdc @ 80 ma 25 vdc @ 90 ma 25 vdc & 6.3 vac @ 30 ma DC and 150 ma AC 36 vdc @ 50 ma NOTE: DC output can be positive or negative, at customer option.
Ripple:	10 mv max., at max. load
Regulation:	3%
Size:	2-1/4" x 2-3/4" x 4-1/4"

The Model PS-22A is equipped with a line cord for operation on 105-125 vac, 60 Hz power. DC output is available from a Winchester M5P jack.

The table below shows the number of each Min-Econ amplifier which the PS-22A will power simultaneously:

Model 3580 - two	Model 3584 - eight	Model 3593 - one
Model 3581 - three	Model 3586 - six	Model 3594 - four
Model 3582 - one	Model 3589 - three	Model 3595 - one
Model 3583 - three	Model 3592-A - four	Model 3596 - one

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CURRENT MIN-ECON AMPLIFIERS and STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3580	Wideband Amplifier	Passband: 25 kHz to 150 mHz Gain: 20 db Impedances: 50 ohms	+15 VDC BNC	$150
3580-A	Wideband Amplifier	Same as 3580	+28 VDC BNC	$160
3581	Wideband Amplifier	Passband: 20 Hz to 60 mHz Gain: 20 db Impedances: 75 ohms	+10 VDC BNC	$70
3581-E	Wideband Amplifier	Same as 3581 except 50 ohms	Same	$75
3581-A	Restricted passband, increased output	Passband: 500 kHz to 30 mHz Gain: 20 db Impedances: 75 ohms Output: 1.5 V p-p	Same	$85
3581-B	Reduced low frequency response	Passband: 10 mHz to 60 mHz, ± 0.5 db Down 30 db at 100 kHz Gain: 20 db Impedances: 75 ohms VSWR: 1.5:1	Same	$80
4581-4	Multiple output Wideband Amplifier	Four Model 3581 in instrument case, with regulated power supply	105-125 V 50-400 cps BNC	$480
3581-F	Very Flat Wideband Amplifier	Passband: Same as 3581 except ± .2 db flatness, 20 mHz to 50 mHz	+10 VDC BNC	$90
3581-D	Increased gain	Passband: 1 kHz to 5 mHz ± 1 db Gain: 30 db Impedances: 150 ohms in 75 ohms out Noise Figure: 10 db	Same	$90

CURRENT MIN-ECON AMPLIFIERS
AND
STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3582	Low Distortion Video Amp	Passband: 20 Hz to 12 mHz Gain: 10X Impedances: 4700 ohms in 50 ohms out Distortion: 1% for 3 V p-p out	+25 V BNC	$80
3582-A	Restricted Bandpass	Passband: 1 kHz to 4 mHz Gain: 30X	+28 V	$90
3583	Low Noise 2 to 30 mHz Amplifier	Passband: 1.5 mHz to 35 mHz Gain: 20 db Impedances: 50 ohms Noise Figure: 5.5 db max.	+10 V BNC	$75
3583-A	Lower Noise	Same as 3583 except noise figure 4 db max.	Same	$125
3584	Low Noise UHF Preamp	Center freq: 250 to 500 mHz Bandwidth: 10% nominal Gain: 15 to 20 db Noise Figure: 4 db Impedances: 50 ohms	+15 V BNC	$160
3584-X	Same as 3584 with tighter specifications	Same basic specifications as 3584. Gain to 27 db; noise figure to 2.5 db; bandwidth to 3%; VSWR to 1:2/1	+15 V BNC	$300 to $500 Typical
3585	Pulse and Video Amplifier	USN preferred CKT PSC 20 Gain: 20X, neg pulse only Output: 55 V peak Rise Time: 100 ns Fall Time: 70 ns Impedances: 12 K in, 1 K out	+100 VDC BNC	$90
3586	Pulse and Video Amplifier	USN preferred CKT PSC 19 Gain: 10X pos. or neg. Output: ± 6 volt peak Rise Time: 130 ns Fall Time: 100 ns	+25 VDC BNC	$60
3587-A	High Level Pulse Amplifier (Non-inverting)	Gain: 10 to 250X (Variable) Output: 25 V pos. pulse Rise Time: Less than 125 ns Pulse Width: 250 ns max. Rep Rate: 300 kHz (Useful for modulating Fairchild scope)	+50 VDC BNC	$80

CURRENT MIN-ECON AMPLIFIERS
AND
STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3587-B	High Level Pulse Amplifier (Inverting)	Gain: .8 to 4X Output: 20 volt pos. pulse Rise Time: Less than 30 ns Width: 390 ns max. Rep Rate: 30 kHz	+50 VDC BNC	$80
3589	Ultra-stable Feedback Amplifier	Passband: 10 Hz to 1.5 mHz Gain: 100X Impedance: 1 meg. in; 100 ohms out	-36 VDC BNC	$90
3589-A	Same as 3589	Output: 15 V p-p into 10 K	-28 VDC BNC	$85
3592	Impedance Transforming Video Amp	Passband: 10 Hz to 30 mHz Gain: Unity Impedances: 70K in, 50 out Output: 1 V p-p, 1% THD	+15 VDC BNC	$85
3592-A	Same as 3592	Same as 3592, except adapted as Preamp for C-COR 1319-F	+22.5 V UHF	$85
3592-B	Similar to 3592	Same as 3592, except inverts input signals	+15 VDC	$95
3592-D	Same as 3592	Same as 3592	+24 VDC BNC	$85
3593	Video Amplifier with adjustable cable equalization	Passband: 5 Hz to 20 mHz Gain: 0 db Equalization: 0 to 4 db @ 10 mHz Impedances: 75 ohms Output: 1 V p-p	-15 VDC BNC	$70
3593-A	Same as 3593	Same as 3593 except 3 V p-p output. 0.3° max. diff. phase at 1 V p-p	+24 VDC BNC	$90
3594	VHF Low Noise Preamplifier	Center Frequency: 100 to 250 mHz Bandwidth: 5% nominal Gain: 20 db nominal Noise Figure: 3.5 db Impedances: 50 ohms	+10 VDC BNC	$150
3594-A	VHF Low Noise Preamplifier	Same as 3594, except gain 30 db nominal	+15 VDC BNC	$160

CURRENT MIN-ECON AMPLIFIERS
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STANDARD MODIFICATIONS

Model	Use	Elec. Characteristics	Power, Connectors	Price
3594-X	VHF Low Noise Preamplifier	3594 with tightened specifications. VSWR to 1.2/1; N.F. to 2.5 db; bandwidth to 3%	+15 VDC BNC	$300 to $500 Typical
3595	Low Distortion Amplifier. Audio and Ultrasonic Frequencies	Gain: 10X Passband: 50 Hz to 120 kHz Impedances: 5000 ohms in 10 ohms out Output: 1 V RMS for 1% THD	+15 VDC BNC	$85
3596	Ultra Wideband Amplifier	Passband: 8 mHz to 300 mHz Gain: 20 db nominal Impedances: 50 ohms Output: 1 V p-p	+15 VDC BNC	$175
3596-A	Narrow Pulse	Similar to 3596 except response to 100 kHz and aligned for pulse response rise time: 2 ns, ± .5 V peak.	+15 VDC BNC	$195
3597	Low Noise Video Amplifier for Detector Use	Passband: 300 Hz to 2.5 mHz Volt gain: 100 X Noise Figure: 2 db with 2000 ohm source Impedance: 20 K approx. input, 35 ohms out Output: ± 1 V peak across 1 meg.	-15 VDC BNC	$125
3599-X	Broadband Amplifier, 100 Hz to 30 mHz with internal filter to produce a variety of custom bandpass characteristics.	Typical specifications: Gain: 8 to 10 db adjustable Impedance: 75 ohms Filter: Bandpass, 14 mHz to 16 mHz, sharp cutoff Output: 2 V p-p matched 4 V p-p low impedance	+12 VDC BNC	$100 Basic Amp. $130 with filter

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