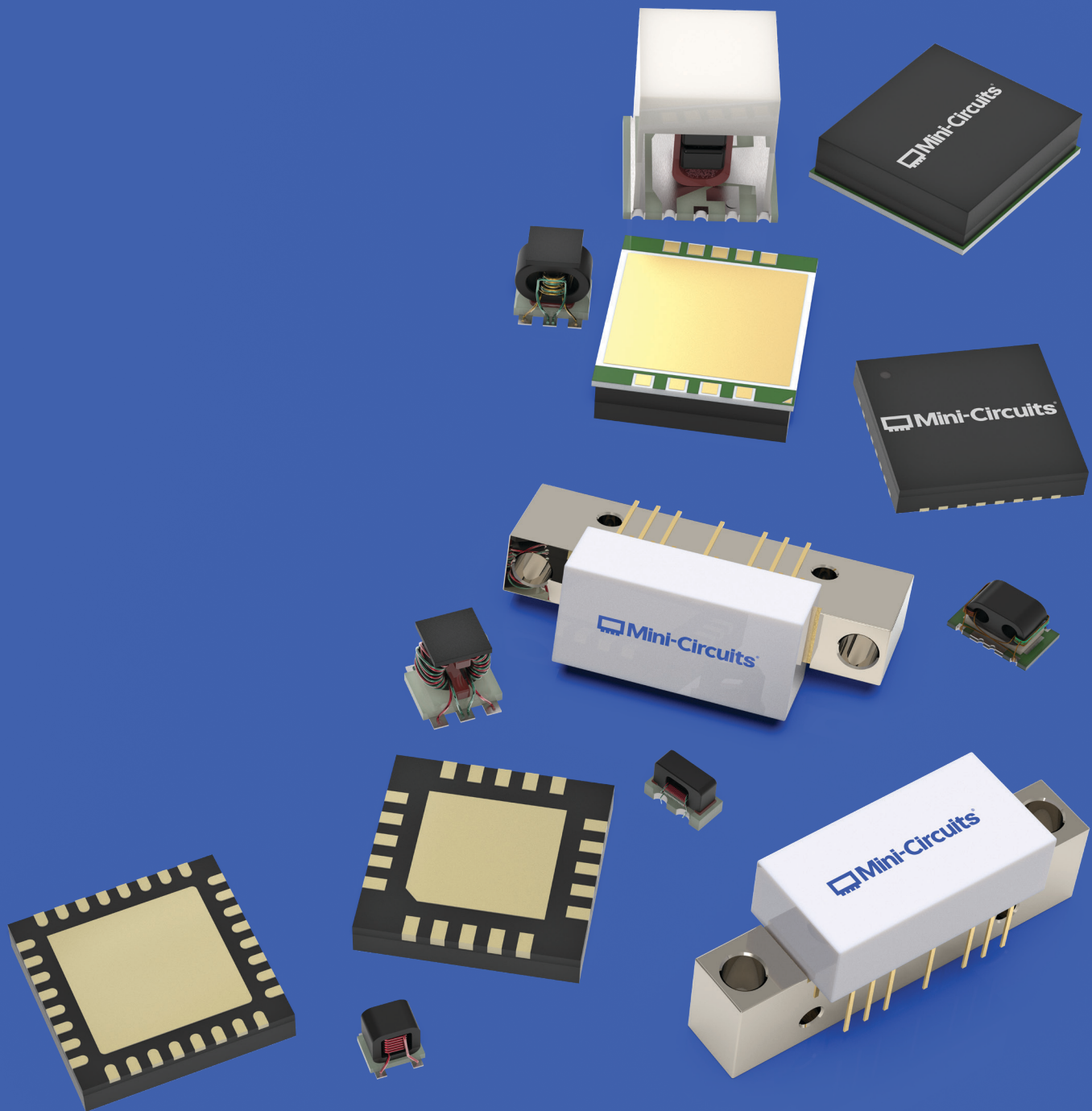


PRODUCT SELECTION GUIDE

CATV & Broadband Access

Actives & Passives from DOCSIS 1.x to 4.x & Beyond



ACTIVES	05-06
Broadband Amplifiers	
Power Doubler Amplifiers	
Power Doubler Hybrid Modules	
Dual Matched Amplifiers	
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Low Noise Amplifiers	
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Directional Couplers	
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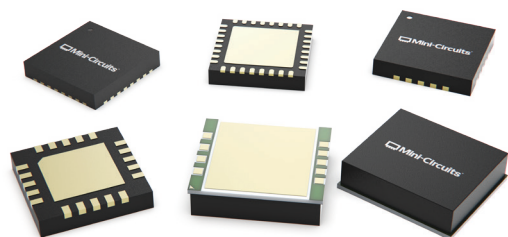
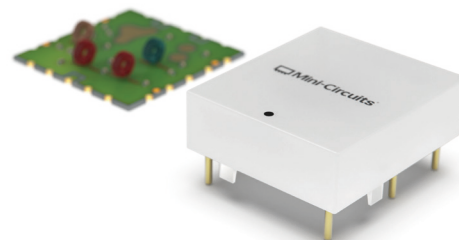
Your Complete Solution Partner

Actives & Passives from DOCSIS 1.x to 4.x & Beyond

With an extensive portfolio of active and passive components for CATV and HFC systems and equipment, Mini-Circuits offers complete solutions as operators upgrade network infrastructure for DOCSIS® 4.0 and beyond.

Passives

Our 75Ω transformers, duplexers, couplers and other passive components have been essential in a wide range of architectures for decades, with performance, quality and service that have made Mini-Circuits a trusted partner to CATV industry customers.



Actives

Our new Santa Rosa MMIC Design Center builds on our passive portfolio with industry-leading design capability for power amplifiers, multi-chip modules and hybrids for DOCSIS 3.1 and 4.0 systems utilizing ESD, FDX and other configurations.

Peace of Mind

When you choose Mini-Circuits, you're getting more than the right partner for your system. You're getting a partner committed to your success.

- Accessible engineering technical support
- Industry-leading supply chain stability
- 55+ years in-house manufacturing and quality excellence

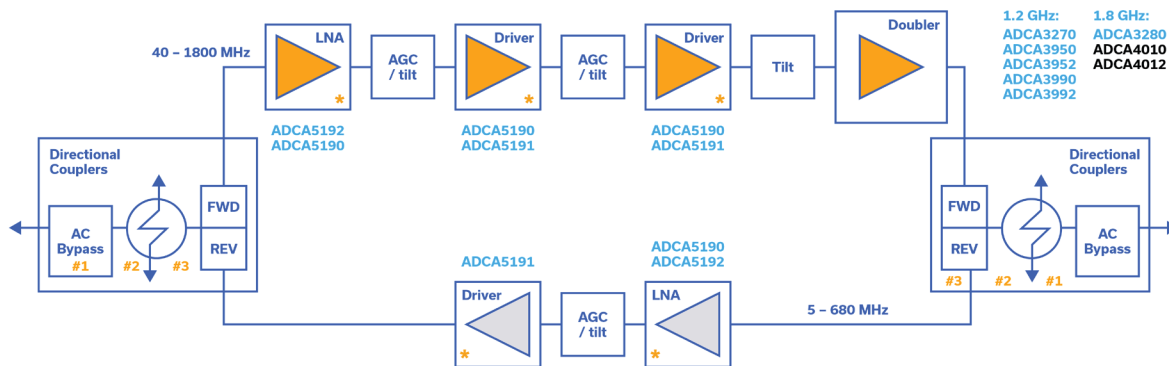


Product Line Synergy

Optimizing System Performance & Production Stability

Advanced in-house capability for 75Ω GaAs and GaN amplifier design and manufacturing together with an extensive portfolio of passive devices allows Mini-Circuits to optimize our designs for better overall system performance and production stability.

Typical Line Extender Amplifier Block Diagram:

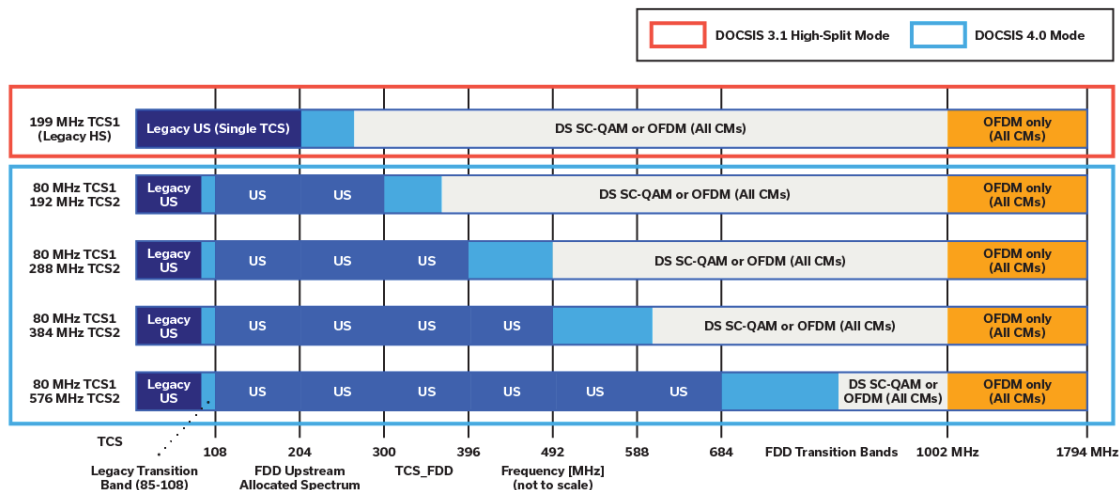


- #1 TACH-182-75-xx+ (high power choke)
- #3 D4PLXE1/EV1-x+ (DOCSIS 4.0 diplexers)

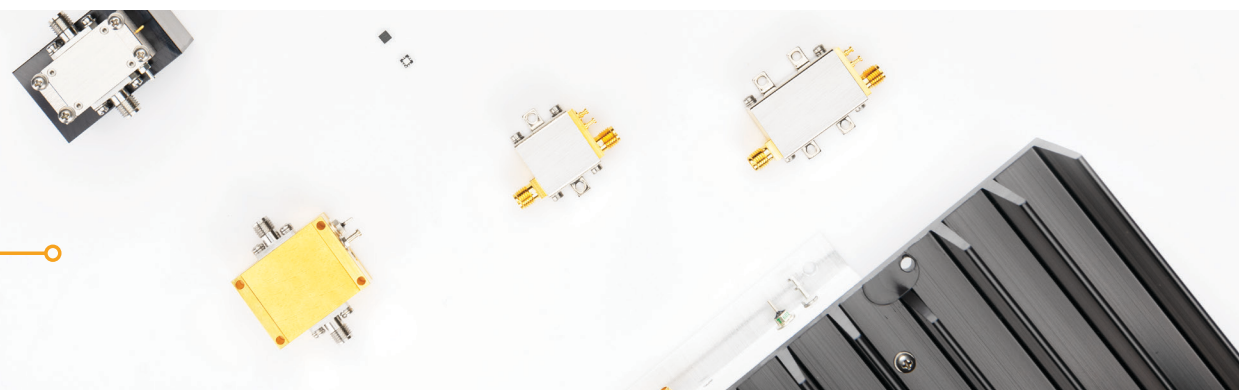
- #2 TDC-xx-182-xxx+ (test point couplers)
- * Mini-Circuits' TRS1-182-75-3+ transformer was developed for ADCA591x reference designs for DOCSIS 4.0

DOCSIS 4.0 ESD Channel Split Options

Mini-Circuits offers solutions for virtually any system configuration including FDX (full-duplex) and ESD (extended-spectrum) DOCSIS 4.0 architectures. Our diplexers support any channel split for 1.2 GHz and 1.8 GHz systems.



Actives



BROADBAND AMPLIFIERS

Model Number	Case Style	Freq Range (MHz)	Gain (dB)	NF (dB)	TCP (dBmV)	NPR (MER) (dB)	Voltage (V)	DC Current (mA)
ADCA5190	32-Lead 5x5mm LFCSP	5-1794	19.1	3.0	67	48	5/8	250/375
ADCA5191	32-Lead 5x5mm LFCSP	5-1794	25.8	3.8	67	51	5/8	300/470
ADCA5192	20-Lead 4x4mm LFCSP	5-1794	17	2.1	58	53	5	250

POWER DOUBLER AMPLIFIERS

Model Number	Case Style	Freq Range (MHz)	Gain (dB)	NF (dB)	TCP (dBmV)	NPR (MER) (dB)	Voltage (V)	DC Current (mA)
ADCA3280	9-Terminal 9x8mm LGA_CAV	45-1794	22.7	3.3	74	48	18/24	540
ADCA3270	9-Terminal 9x8mm LGA_CAV	45-1218	25	4.0	74	50	24	480

POWER DOUBLER HYBRID MODULES

Model Number	Case Style	Freq Range (MHz)	Gain (dB)	NF (dB)	TCP (dBmV)	NPR (MER) (dB)	BER (Post-Vit)	Voltage (V)	DC Current (mA)
ADCA4010	SOT-115J	54-1794	23.5	4.5	74	50	-	24	520
ADCA4012	SOT-115J	54-1794	25	4.5	76	50	-	34	535
ADCA3950	SOT-115J	45-1218	25	34	74	-8050	<1x10 ⁻¹⁰	24	470/490
ADCA3952	SOT-115J	45-1218	25	4	74	-8050	<1x10 ⁻¹⁰	24	250-490
ADCA3990	SOT-115J	45-1218	24.5	4.5	76.8	-	<1x10 ⁻⁹	24/34	535
ADCA3992	SOT-115J	45-1218	26.7	4.5	76.8	-	<1x10 ⁻⁹	24/34	535

DUAL MATCHED AMPLIFIERS

Model Number	Case Style	Freq Range (MHz)	Gain (dB)	NF (dB)	P1dB (dBm)	OIP3 (dBm)	Voltage (V)	DC Current (mA)
MPGA-122-75+	4x4mm QFN- Style	40-1250	15.3	3.2	30.6	48.8	9	391

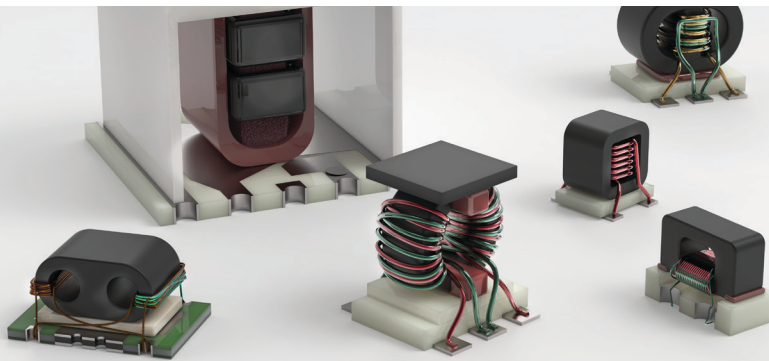
LINEAR AMPLIFIERS

Model Number	Case Style	Freq Range (MHz)	Gain (dB)	NF (dB)	P1dB (dBm)	OIP3 (dBm)	Voltage (V)	DC Current (mA)
PGA-106-75+	SOT-89	50-1500	16.9	3.3	20.1	36.2	5	116
PGA-106R-75+	SOT-89	5-250	17.9	3.3	19.5	34.4	5	116
PGA-122-75+	SOT-89	5-1500	15.5	2.8	23.8	41.4	9	115

LOW NOISE AMPLIFIERS

Model Number	Case Style	Freq Range (MHz)	Gain (dB)	NF (dB)	P1dB (dBm)	OIP3 (dBm)	Voltage (V)	DC Current (mA)
PGA-32-75+	SOT-89	5-300	15.6	2.9	23.7/18.7	43.3/39.1	9.0/5.0	110/55
PGA-32-75-D+	Bare Die	5-300	15.6	2.9	23.7/18.0	43.3/31.6	9.0/5.0	110/50.7

Passives

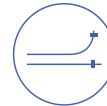


VOLTAGE VARIABLE ATTENUATORS



- 50-2000 MHz
- 0-30 dB attenuation range
- Compact SMT footprint (0.39 x 0.39")

DIRECTIONAL COUPLERS



- 5 to 1800+ MHz
- Coupling from 6 to 25 dB
- RF power up to 4W
- SMT & connectorized case styles

VOLTAGE VARIABLE EQUALIZERS



- 50 to 1220 MHz
- Custom designs available
- Compact SMT footprint (0.39 x 0.39")
- Compensate for frequency-dependent cable loss

DIPLEXERS



- DOCSIS 3.1 & 4.0 channel splits
- Custom designs available
- SMT & field-replaceable plug-in case styles

FILTERS



- Up- & downstream bands for DOCSIS 3.1 & 4.0
- Lumped element, LTCC & more
- Custom designs available
- Tiny 1210 ceramic monolith

SPLITTER/COMBINERS



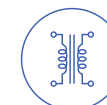
- 2-way to 24-way Bandwidths spanning DC to 2400 MHz
- RF input power up to 10W
- SMT & connectorized case styles

MMIC SWITCHES



- 5 to 3000 MHz
- SPDT to SP6T
- CMOS Drivers
- 2x2mm QFN-style package

TRANSFORMERS



- 0.5 to 3000 MHz
- Impedance ratios from 1:1 to 4:1
- Wide range of single-ended and balanced configurations

Test Tools & Accessories



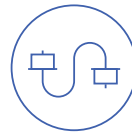
Test & measurement poses a unique challenge for systems with 75Ω characteristic impedance. Whether you're using 50Ω instrumentation with Z-conversion or working directly with 75Ω equipment, Mini-Circuits offers a wide selection of tools and accessories to improve the accuracy and efficiency of your setup, from R&D and design validation to production test.

ATTENUATORS



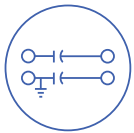
- 75Ω 3 dB pads
- DC to 2000 MHz
- BNC connectors

CABLES



- DC to 3000 MHz
- F-Type & N-Type Connectors
- Low-loss
- Good phase stability

DC BLOCKS



- DC to 2200 MHz
- BNC connectors

MATCHING PADS



- DC to 3000 MHz
- SMA, N-Type & BNC connector options
- Ideal for interfacing 75Ω components with 50Ω equipment

POWER SENSORS



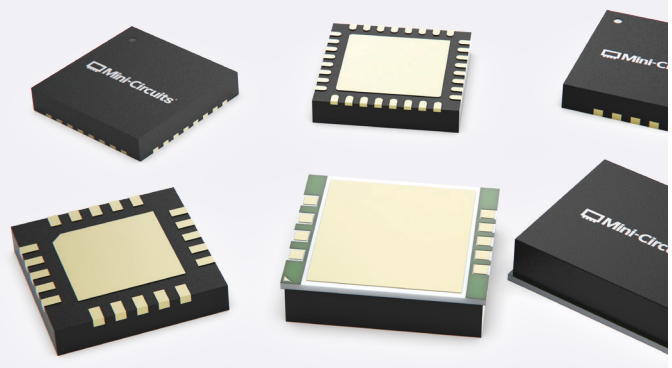
- CW measurements
- 0.1 to 2500 MHz
- -30 to +20 dBm

TERMINATIONS

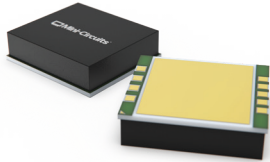


- BNC male connectors
- 0.5W RF power handling
- Excellent return loss

MMIC Package Style Reference

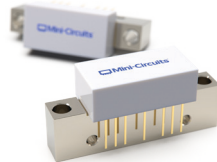


DL3631



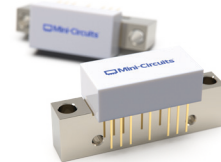
9-Terminal 9x8mm Thermally Enhanced Chip Array Small Outline No Lead Cavity (LGA_CAV)

NP3629



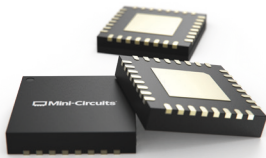
SOT115J

NP3629-1



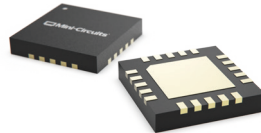
SOT115J

DG1677-11



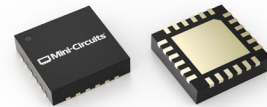
32-Lead 5x5mm LFCSP

DG983-6



20-Lead 4x4mm LFCSP

DG1847



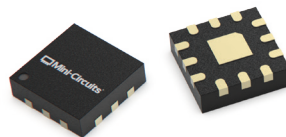
4x4mm QFN Style

DF782



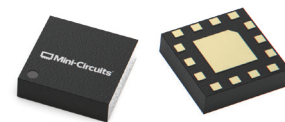
SOT89

MT1818



2x2 mm QFN Style

MT1817



2x2mm QFN Style

Mini-Circuits' Acquisition of Analog Devices' CATV Amplifier Business

FAQs

BACKGROUND

About the Acquisition

Mini-Circuits acquired Analog Devices' CATV amplifier product line and business effective April 12.

The transaction includes the following elements:

- A portfolio of CATV amplifier products for DOCSIS 3.x and 4.x applications
- A product development team based in Santa Rosa
- Assets, inventory, and manufacturing relationships for business continuity

Why did Mini-Circuits pursue the acquisition of this business?

The Broadband Optical and CATV market is a major segment of Mini-Circuits' business, and we have strong, longstanding relationships with customers in this space. DOCSIS® 3.1 and 4.0 infrastructure upgrades are expected to generate significant demand for 75Ω components over the next 10 years. Mini-Circuits considers this market a key part of its long-term growth strategy and an opportunity to expand its offerings to customers in this space.

Will Mini-Circuits retain the existing team?

Yes. Mini-Circuits greatly values the experience and domain expertise of the team which serves as the foundation for our Santa Rosa MMIC Design Center. Chris Day will continue to serve in his current capacity as principal designer and leader of the CATV amplifier organization and related operations within Mini-Circuits' broader MMIC business unit.

STRATEGIC PLANNING

What are Mini-Circuits' strategic plans for the CATV amplifier business?

Mini-Circuits can serve as a strategic partner to customers by offering a portfolio of amplifiers and passive components for CATV applications. We have planned increased investments and staffing in product development, operations, marketing, and technical support.

How will the development roadmap be managed going forward?

Through our direct engagement model, Mini-Circuits can collaborate more closely and "co-design" with customers. Our development roadmaps will reflect what our customers need for their current and future application requirements.

PRODUCT SALES & SUPPORT

What part numbers are subject to the agreement?

Mini-Circuits has acquired the following ADI parts:

- | | | |
|------------|------------|-----------|
| • ADCA3270 | • ADCA4010 | • OTM3222 |
| • ADCA3280 | • ADCA4012 | • OTM3227 |
| • ADCA3952 | • ADCA5190 | • OTM3228 |
| • ADCA3990 | • ADCA5191 | • OTM5170 |
| • ADCA3992 | • ADCA5192 | |

Will part numbers change?

ADI part numbers will not change. For customers' ease of ordering, Mini-Circuits is using ADI part numbers in our system.

Will there be any other changes to the products?

Mini-Circuits understands the impact of product change and structured the transaction to minimize disruption for customers.

- **Supply chain** – Use existing suppliers.
- **Production** – Use existing production processes and contract manufacturers.
- **Test and Characterization** – Use existing test equipment for characterization and production test. Mini-Circuits transferred production test to its facilities in Malaysia by mid-June 2024. Our operations management in Malaysia has many years of experience testing RF and Microwave components and worked closely with ADI for a seamless transfer.
- **Documentation** – Product documentation content is unchanged and adapted with Mini-Circuits branding.

Who is my point of contact?

Your Mini-Circuits account manager and local sales representative are your point of contact for the amplifier products. If you do not know your local representative, please contact sales@minicircuits.com or +1 (718) 934-4500.

How fast will new quotes be issued and when will orders ship?

We have worked closely with ADI to produce a buffer stock to ensure there are no supply issues during the transition. Please contact sales@minicircuits.com to receive quotations and delivery times.

Will products be available through distributors?

To provide the highest level of service, Mini-Circuits will be offering these parts only through direct sale.

Will Mini-Circuits be discontinuing any of the current models?

No. Mini-Circuits is proud of its reputation for the best product longevity and supply chain stability in the industry. Our policy has always been to support all active products through the lifetime of the customers' system and insulate customers from risk. This policy will apply to the CATV amplifier product line.

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