

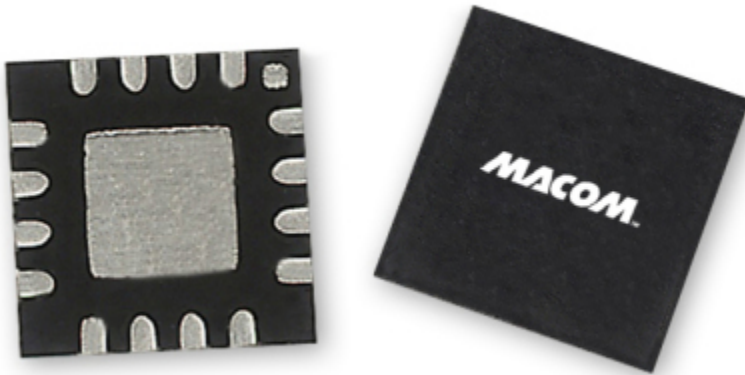
MACOM Introduces New Negative Voltage Drivers Optimized for Use With High-Performance AlGAs and HMIC PIN Diode Switches

December 18, 2018

- *New MADR-011020 and MADR-011022 drivers enable exceptionally fast switching speeds*
- *Seamless compatibility with MACOM AlGAs and HMIC PIN diodes ensures unrivaled ease of use*
- *MACOM's new drivers are available to customers today*

LOWELL, Mass.--(BUSINESS WIRE)--Dec. 18, 2018-- [MACOM Technology Solutions Inc.](https://www.businesswire.com/news/home/20181218005148/en/) ("MACOM"), a leading supplier of semiconductor solutions, today announced two new negative voltage drivers designed for use with a broad range of MACOM's AlGAs and HMIC PIN diode switches. The new [MADR-011020](#) and [MADR-011022](#) drivers enable integration that complements the industry-leading performance of MACOM's advanced PIN diodes, providing designers with layout-efficient and cost-effective solutions while eliminating the design complexities and time to market constraints imposed by discrete componentry.

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The MADR-011020 enables back bias voltage selection between -20V and -50V and provides up to 50 mA sinking and sourcing bias current for medium power SPDT switches, while the MADR-011022 accommodates between -10V and -25V with up to 25 mA sinking bias current and 20 mA sourcing for use with low power SPDT switches. These compact 4mm, 16-lead PQFN packaged drivers feature built-in power sequencers, eliminating the need for external power sequencing, and can be easily controlled with standard TTL logic. Achievable switching speeds range from sub-50ns (MADR-011020) to sub-80ns (MADR-011022).

These drivers can be used as building blocks where two or more drivers can be paralleled to control 2 to 8 throw switch configurations. An all-off RF switch state can be achieved using the drivers' enable pins.

The new MADR-011020 and MADR-011022 drivers enable integration that complements the industry-leading performance of MACOM's advanced PIN diodes, providing designers with layout-efficient and cost-effective solutions while eliminating the design complexities and time to market constraints imposed by discrete componentry. (Photo: Business Wire)

"Designers count on MACOM to provide the highest-performing PIN diode switches available in the industry leveraging our proprietary AlGAs and HMIC

technologies," said Graham Board, Senior Director of Product Marketing, MACOM. "The new drivers introduced today are worthy complements, comprising a complete solution that makes it exceptionally easy for designers to architect and evaluate their RF switch designs."

For over 60 years, MACOM's design and applications experts have spearheaded innovation in the RF, microwave and millimeterwave domain, developing the industry's broadest portfolio of MMICs and components spanning the entire RF signal chain. Leveraging advanced, proprietary technologies, MACOM's heterogeneous semiconductor and packaging strategy ensures that each individual RF system function is fully optimized to deliver maximum performance at the appropriate cost. MACOM remains firmly committed to delivering true competitive advantage to our customers, providing superior technology, expertise, cost structures and supply chains – with no compromises.

MACOM is a complete solution provider for High Performance RF control components, providing discrete PIN diodes with I-layer thickness from 1 micron to 400 microns for frequency-specific switching and power limiting applications, discrete chip capacitors and quartz chip inductors for custom bias networks/filters, drop in wideband (2 to 18 GHz) bias decoupling networks for use with discrete or integrated switching circuits, multi-throw switches using MACOM's HMIC or AlGAs technologies with on-chip biasing networks, and TTL-compatible positive and negative voltage switch/PIN diode drivers with very fast switching speed. MACOM offers standard band-specific control circuits, and supports customers with devices for custom designs and circuits.

Switch Part Number	Short Description	Compatible MACOM Driver Part #
MASW-011071	20 W HMIC™ Silicon PIN Diode Terminated SPDT Switch	MADR-011022
MA4AGSW1	SPST Reflective AlGAs PIN Diode Switch RoHS Compliant	MADR-011022

MA4AGSW2	SP2T AlGaAs PIN Diode Switch	MADR-011022
MA4AGSW3	SP3T AlGaAs PIN Diode Switch	MADR-011022
MA4AGSW4	SP4T AlGaAs PIN Diode Switch	MADR-011022
MA4AGSW5	SP5T AlGaAs PIN Diode Switch	MADR-011022
MA4AGSW8-1	SP8T AlGaAs PIN Diode Switch	MADR-011022
MA4SW4100	HMIC™ Silicon SP4T PIN Diode Switch	MADR-011022
MASW-002103	HMIC™ SP2T SURMOUNT CHIP	MADR-011022
MASW-002102	HMIC™ SP2T SURMOUNT CHIP with Integrated Bias Network	MADR-011022
MASW-010646	Ka-Band High Power Reflective SPDT PIN Switch	MADR-011020
MASW-010647	20W HMIC™ Silicon PIN Diode Terminated SPDT Switch	MADR-011020
MASW-011021	HMIC Silicon PIN Diode SPDT Switch	MADR-011020
MASW-011036	Ka-Band High Power Terminated SPDT PIN Switch, 26-40 GHz	MADR-011020
MASW-011094	Ka-Band High Power Terminated SPDT PIN Switch	MADR-011020
MASW-011098	Packaged High Power 26-40GHz Reflective SPDT PIN Switch	MADR-011020
MASW-001150-1316	HMIC PIN Diode, 50W	MADR-011020
MA4SW110	HMIC™ Silicon PIN Diode Switches	MADR-011020
MA4SW210	HMIC™ Silicon PIN Diode Switches	MADR-011020
MA4SW310	HMIC™ Silicon PIN Diode Switches	MADR-011020
MA4SW210B-1	HMIC PIN Diode with Bias	MADR-011020
MA4SW310B-1	HMIC PIN Diode with Bias	MADR-011020
MASW-001100-1190	HMIC™ Silicon PIN Diode Switches	MADR-011020
MASW-002100-1190	HMIC™ Silicon PIN Diode Switches	MADR-011020
MASW-003100-1190	HMIC™ Silicon PIN Diode Switches	MADR-011020
MASW-011052	HMIC Silicon PIN Diode SP2T Switch with Integrated Bias Network	MADR-011022
MASW-001150-1316	SURMOUNT PIN Diode Switch Element with Thermal Terminal	MADR-011020
MASW-011036	Ka-Band High Power Terminated SPDT PIN Switch, 26-40 GHz	MADR-011020

MACOM's new MADR-011020 and MADR-011022 drivers are available to customers today. For assistance identifying MACOM products optimized to substitute or replace offerings from other vendors, visit MACOM's Cross Reference tool. For more information about these new drivers, please visit.

<https://www.macom.com/products/product-detail/MADR-011020>

<https://www.macom.com/products/product-detail/MADR-011022>

ABOUT MACOM:

MACOM enables a better-connected and safer world by delivering breakthrough semiconductor technologies for optical, wireless and satellite networks that satisfy society's insatiable demand for information.

Today, MACOM powers the infrastructure that millions of lives and livelihoods depend on every minute to communicate, transact business, travel, stay informed and be entertained. Our technology increases the speed and coverage of the mobile Internet and enables fiber optic networks to carry previously unimaginable volumes of traffic to businesses, homes and datacenters.

Keeping us all safe, MACOM technology enables next-generation radars for air traffic control and weather forecasting, as well as mission success on the modern networked battlefield. MACOM is the partner of choice to the world's leading communications infrastructure, aerospace and defense companies, helping solve their most complex challenges in areas including network capacity, signal coverage, energy efficiency and field reliability, through its best-in-class team and broad portfolio of analog RF, microwave, millimeterwave and photonic semiconductor products.

MACOM is a pillar of the semiconductor industry, thriving for more than 60 years of daring to change the world for the better, through bold technological strokes that deliver true competitive advantage to customers and superior value to investors.

Headquartered in Lowell, Massachusetts, MACOM is certified to the ISO9001 international quality standard and ISO14001 environmental management standard. MACOM has design centers and sales offices throughout North America, Europe and Asia.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS:

This press release contains forward-looking statements based on MACOM's beliefs and assumptions and on information currently available to MACOM. These forward-looking statements reflect MACOM's current views about future events and are subject to risks, uncertainties, assumptions and changes in circumstances that may cause those events or our actual activities or results to differ materially from those expressed in any forward-looking statement. Although MACOM believes that the expectations reflected in the forward-looking statements are reasonable, it cannot and does not guarantee future events, results, actions, levels of activity, performance or achievements. Readers are cautioned not to place undue reliance on these forward-looking statements. A number of important factors could cause actual results to differ materially from those indicated by the forward-looking statements, including, but not limited to, those factors described in "Risk Factors" in MACOM's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and other filings with the Securities and Exchange Commission. MACOM undertakes no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

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