Here's What's New...

New Product Releases from Planar Monolithics Industries, Inc.

December 13, 2017

*** NEW RELEASES ***

1.0 PMI Model No. DMBX-4G12G-19-8D5-SFF, 4.0 to 12.0 GHz, Double Balanced Mixer

PMI Model No. DMBX-4G12G-19-8D5-SFF is a Double Balanced Mixer operating over the 4.0 to 12.0 GHz frequency range. This unit provides a minimum isolation of 19 dB from LO to RF while maintaining a maximum noise figure of 8.5 dB. This compact mixer measures 1.000" x 0.725" x 0.510" and is outfitted with field replaceable SMA female connectors.

- Frequency Range: 4.0 to 12.0 GHz
- Output Frequency Range: 8.9 to 9.4 GHz (R Port)
- Input:
  - F1 = 870 MHz (I Port)
  - P1 = +5 dBm
  - F2 = 9.77 to 10.27 GHz (L Port)
  - P2 = +12 dBm
- Conversion Loss: 8.5 dB (I --> R) - Measured 7.04 dB
- Isolation:
  - 19 dB (L--->R) - Measured 38.97 dB
  - 30 dB (L---> I) - Measured 62.60 dB
  - 27 dB (I---> R) - Measured 39.27 dB
- Noise Figure: 8.5 dB Max. - Measured 7.04 dB
Nominal Impedance: 50Ω
RF Input Power: 200 mW Max. CW @ 25°C
Input Current: 100 mA DC Peak

PMI Website Link,
http://www.pmi-rf.com/Products/multifunctionmodules/DMBX-4G12G-19-8D5-SFF.htm

2.0 PMI Model No. P2T-500M10G-60-R-515-SFF-10WCW, 0.5 to 10.0 GHz, SP2T Reflective Switch

PMI Model No. P2T-500M10G-60-R-515-SFF-10WCW is a single pole two throw reflective switch that operates over the 0.5 to 10.0 GHz frequency range. This switch handles input power of 10 watts CW and has a maximum switching speed of 100 ns. The unit is supplied with SMA (F) connectors in a compact housing measuring 1.20" x 1.00" x 0.50"

- Frequency Range: 0.5 to 10.0 GHz
- Insertion Loss: 2.5 dB Max. - Measured 1.15 dB
- Isolation: 60 dB Min. - Measured 88 dB
- VSWR: 2.0:1 Max. - Measured 1.6:1
- Switching Speed: 100 ns Typ. - Measured 86 ns (50% TTL to 10%/90% RF)
- Control Logic - Single Control TTL Toggle
  - Logic "0" = J1 - J2 On
  - Logic "1" = J1 - J3 On
- Power Supply:
  - +5 V @ 100 mA Max. - Measured 38 mA
  - -15 V @ 75 mA Max. - Measured 43 mA
- RF Power: 10 Watts CW Max.

PMI Website Link,
http://www.pmi-rf.com/Products/Switches/P2T-500M10G-60-R-515-SFF-10WCW.htm

3.0 PMI Model No. P16T-100M50G-100-T-I, 0.1 to 50.0 GHz, SP16T Absorptive Switch

PMI Model No. P16T-100M50G-100-T-I is a single pole, sixteen throw absorptive switch which operates over the 0.1 to 50.0 GHz frequency range. This model offers a typical insertion loss of 16 dB while maintaining a typical isolation of 70 dB. This unit is supplied with 2.4mm female connectors in a gold-plated housing measuring 12.00" x 5.50" x 0.65".
Frequency Range: 0.1 to 50.0 GHz

Insertion Loss:
- 8.0 dB (0.1 to 18.0 GHz) Typ. - Measured 12.5 dB
- 12.5 dB (18.0 to 40.0 GHz) Typ. - Measured 17 dB
- 18.0 dB (40.0 to 50.0 GHz) Typ. - Measured 20 dB

VSWR (In/Out):
- 2.5:1 (0.1 to 18.0 GHz) Typ. - Measured 2.5:1
- 3.0:1 (18.0 to 40.0 GHz) Typ. - Measured 3.0:1
- 3.5:1 (40.0 to 50.0 GHz) Typ. - Measured 3.5:1

Isolation:
- 70 dB (0.1 to 18.0 GHz) Typ. - Measured 84 dB
- 70 dB (40.0 to 50.0 GHz) Typ. - Measured 61 dB
- 90 dB (1.0 to 18.0 GHz) Typ. - Measured 92 dB
- 80 dB (18.0 to 40.0 GHz) Typ. - Measured 72 dB

Input Power: 20 dBm CW Max.

Switching Speed:
- 100 ns Max. - Measured 90 ns

Control Signal:
- TTL Logic
  - "0" = ON
  - "1" = "OFF"

DC Voltage:
- +5 V @ 800 mA Max. - Measured 710 mA
- -5 V @ 700 mA Max. - Measured 680 mA

PMI Website Link
http://www.pmi-rf.com/Products/Switches/P16T-100M50G-100-T-I.htm

4.0 PMI Model No. P1T-7G18G-60-T-2W, 7.0 to 18.0 GHz, SPST Absorptive Switch

PMI Model No. P1T-7G18G-60-T-2W is a terminated, single pole, single throw switch that operates over the frequency range of 7.0 to 18.0 GHz. This model handles 2 watts CW input power with 60 dB of isolation. It has a low insertion loss of 3.0 dB max while still offering a fast switching speed of 100 ns max. The unit is supplied with SMA female connectors in a hermetically sealed housing measuring 1.00" x 1.00" x 0.50" (25.40 mm x 25.40 mm x 12.70 mm).

- Frequency Range: 7.0 to 18.0 GHz
- RF Power Handling: 2 Watts (30% Duty Cycle and 130 us Pulse Width) Hot Switching
- Isolation: 60 dB Min.* - Measured 86 dB
- Insertion Loss: 3.0 dB Max.** - Measured 2.9 dB
- Insertion Loss Ripple: 0.3 dB Max. over any 500 MHz bandwidth within 7.0 to 18.0 GHz - Measured <0.3 dB
- VSWR (Into Termination/Source of 1.3:1):
  - 1.6:1 Max. (Port Selected) - Measured 1.6:1
  - 2.0:1 Max. (Port Not Selected)*** - Measured 1.86:1
- DC Power Dissipation: 1.25 W
- Rise Time: 70 ns Max. - Measured 40 ns
- Fall Time: 100 ns Max. - Measured 50 ns
- Switch Delay: 150 ns Max. - Measured 105 ns

Notes:
* Measure and record S21 from 6.0 to 18.0 GHz (1201 Points), with the DC voltage supply set to
5.0 PMI Model No. P2T-7G18G-60-T-2W, 7.0 to 18.0 GHz SP2T Absorptive Switch

PMI Model No. P2T-7G18G-60-T-2W is a terminated, single pole, two throw switch that operates over the frequency range of 7.0 to 18.0 GHz. This model handles 2 watt CW input power with port to port isolation of 60 dB min. It has a low insertion loss of 3.0 dB max while still offering a fast switching speed of 500 ns max. The unit is supplied with SMA(F) connectors in a hermetically sealed housing measuring 1.00" x 0.80" x 0.50" (25.40 mm x 20.32 mm x 12.70 mm).

- Frequency Range: 7.0 to 18.0 GHz
- RF Power Handling: 2 Watts (30% Duty Cycle and 130 µs Pulse Width)
- Isolation: 60 dB Min.* - Measured 73.5 dB
- Insertion Loss: 3.0 dB Max** - Measured 2.9 dB
- Insertion Loss Ripple: 0.3 dB Max over any 500 MHz bandwidth within 7.0 to 18.0 GHz Measured < 0.3 dB
- VSWR (Into Termination/Source of 1.3:1):
  1.6:1 Max. (Port Selected) - Measured 1.57:1
  2.0:1 Max. (Port Not Selected)*** - Measured 1.88:1
- Command Logic: TTL
- DC Power Dissipation: 1.25 W
- Switch Delay: 500 ns Max. - Measured 55 ns

Notes:
* Measure and record S21 from 6.0 to 18.0 GHz (1201 Points), with the DC voltage supply set to > 2.6 V (Pulse Modulator in the off state). Isolation will be verified from this data.
** Insertion Loss shall be measured with the control signal relative to its return (i.e. On or Low Loss State) over the frequency range of 7.0 to 18.0 GHz.
*** VSWR required only during functional vibration

PMI Website Link,
http://www.pmi-rf.com/Products/Switches/P2T-7G18G-60-T-2W.htm
PMI Model No. SWN-2181-TRA-T is a pin diode transfer switch that operates over the 7.0 to 18.0 GHz frequency range. This transfer switch is uniquely designed to allow only one path on at a time while unused ports are terminated. Furthermore, this model also incorporates a TTL compatible driver for ease of system integration.

- **Frequency Range:** 7.0 to 18.0 GHz
- **RF Power Handling:** 2 Watts (30% Duty Cycle and 130 µs Pulse Width)
- **Isolation:** 60 dB Min. * - Measured 71.5 dB
- **Insertion Loss:** 5.0 dB Max. ** - Measured 4.7 dB
- **Insertion Loss Ripple:** 0.3 dB Max. over any 500 MHz bandwidth within 7.0 to 18.0 GHz - Measured <0.3 dB
- **VSWR (Into Termination/Source of 1.3:1):**
  - 1.6:1 Max. (Port Selected) - Measured 1.58:1
  - 2.0:1 Max. (Port Not Selected) *** - Measured 1.92:1
- **Command Logic:** TTL
- **DC Power Dissipation:** 2.25 W
- **Switch Delay:** 500 ns Max. - Measured 55 ns

**Notes:**
* Measure and record S21 from 6.0 to 18.0 GHz (1201 Points), with the DC voltage supply set to > 2.6 V (Pulse Modulator in the off state). Isolation will be verified from this data.
** Insertion Loss shall be measured with the control signal relative to its return (i.e. On or Low Loss State) over the frequency range of 7.0 to 18.0 GHz.
*** VSWR required only during functional vibration.

**PMI Website Link,**
http://www.pmi-rf.com/Products/Switches/SWN-2181-TRA-T.htm

### 7.0 PMI Model No. DLVA-18G40G-42-50-CD-1, 30.0 to 31.0 GHz, Detector Log Video Amplifier

PMI Model No. DLVA-18G40G-42-50-CD-1 is a DLVA operating over the frequency range of 18.0 to 40.0 GHz, with performance optimized over the frequency range of 30.0 to 31.0 GHz. This unit features a 42dB logging range and is housed in a hermetic package measuring 1.86" x 1.69" x 0.40".

- **Frequency Range:**
  - 18.0 to 40.0 GHz (Operational)
  - 30.0 to 31.0 GHz (Full Performance)
- **Flatness @ -23 dBm:** ±0.25 dB - Measured ±0.1 dB
- **VSWR (In/Out):** 1.5:1 Max. - Measured 1.18
- **TSS:** -34 dBm - Measured -39.8 dBm
- **Logging Range:** -32 to +10 dBm
- **Log Slope:** 50 mV/dB ±3 dB - Measured +51.83 mV/dB
- **Log Linearity:** ±0.5 dB - Measured +0.4,-0.35 dB
- **DC Offset:** 0 to ±75 mV - Measured +45 / -4 mV
- **Output Stability (-54 to +85 °C):** ±0.75 dB - Measured ±0.29 dB
8.0 PMI Model No. PEC-40-25-218-21-12-SFF-TTLVG, 2.0 to 18.0 GHz Variable Gain Amplifier

PMI Model No. PEC-40-25-218-21-12-SFF-TTLVG is a variable gain amplifier that operates over the 2.0 to 18.0 GHz frequency range. This model has two gain states. In high gain model the gain is +40 dB and in low gain model the gain is +25 dB typically. The OP1dB is +20 dBm minimum and a maximum noise figure of 4.5 dB in maximum gain mode and 7.0 dB in minimum gain mode. The gain model is controlled via TTL and switches between states in less than 500 ns. The amplifier is supplied with SMA(F) connectors and the housing measures 2.54" x 1.0" x 0.383".

- Frequency Range: 2.0 to 18.0 GHz
- Gain:
  - @ -25 ºC:
      - Measured 41.94 dB ±1.82 dB
      - Measured 26.80 dB ±1.52 dB
  - @ +25 ºC:
    - Max Gain Position: +40 dB ±2 dB Max.
      - Measured 41.68 dB ±1.28 dB
      - Measured 26.71 dB ±1.43 dB
  - @ +75 ºC:
- Pout @1dB Compression @ -25 ºC, @ +25 ºC, @ +75 ºC:
  - Max Gain Position: +21 dB Min.
  - Min Gain Position: +20 dB Min.
- Saturated Output Power Over Operating Temp Range (Both Gains): +26 dBm
- Noise:
  - @ -25 ºC:
    - Max Gain Position: +3.8 dB Max. - Measured +3.12 dB
    - Min Gain Position: +6.0 dB Max. - Measured +3.48 dB
  - @ +25 ºC:
    - Max Gain Position: +4.5 dB Max. - Measured +3.78 dB
    - Min Gain Position: +7.0 dB Max. - Measured +4.31 dB
  - @ +75 ºC:
    - Max Gain Position: +5.0 dB Max. - Measured +4.44 dB
    - Min Gain Position: +8.0 dB Max. - Measured +4.96 dB
- VSWR In/Out: 2.0:1 Max. - Measured 1.67:1 In/1.43:1 Out
- Input/Output Impedance: 50 Ω Nominal
Input Power (Without Damage): +20 dBm CW Max.
In-Band Harmonics @ or Below the 1 dB Compression Point: -10 dBc Min.
Pulse Rise Time with input signals up to 20 dBm: < 5 ns
Pulse Overshoot with input signals up to 20 dBm: < 0.5 dB
Pulse Droop with the following pulses up to 250 µs in duration input signal up to -20 dBm: < 2.0 dB
Pulse Recovery Time with the following pulses up to 250 µs in duration input signal up to -20 dB: 15 ns
Gain Switching Time: <500 ns
Gain Switch Control:
  - TTL High "1" - Max. Gain
  - TTL Low "0" - Min. Gain
DC Supply:
  - 780 mA Max. @ +12 V ±5% Max. Gain Position - Measured 332 mA @ Max. Gain Position
  - 610 mA Max. @ +12 V ±5% Min. Gain Position - Measured 332 mA @ Min. Gain Position

PMI Website Link,
http://www.pmi-rf.com/Products/amplifiers/PEC-40-25-218-21-12-SFF-TTLVG.htm

9.0 PMI Model No. DTA-0R5G18G-60-CD-1, 0.5 to 18.0 GHz 10-Bit Programmable Attenuator

PMI Model No. DTA-0R5G18G-60-CD-1 is a non-reflective, 10 bit, programmable 60 dB pin diode attenuator with step resolution as low as 0.06 dB over the frequency range of 0.5 to 18.0 GHz. This model is offered in a slim line housing measuring 2.0" x 1.8" x 0.5" with SMA female connectors and a 15 PIN Micro-D-Female control connector. Mating Micro-D Male connector supplied.

- Frequency Range: 0.5 to 18.0 GHz
- Mean Attenuation Range: 60 dB
- Insertion Loss: 4.8 dB Max. - Measured 4.7 dB
- VSWR: 2.0:1 Max. - Measured 1.9:1
- Flatness up to:
  - 20 dB: ±1.0 dB Typ. - Measured ±0.84 dB
  - 40 dB: ±1.5 dB Typ. - Measured ±1.07 dB
  - 60 dB: ±3.05 dB Typ. - Measured ±1.46 dB
- Accuracy of Attenuation:
  - 0 to 20 dB: ±1.0 dB Typ. - Measured ±0.86 dB
  - 20 to 40 dB: ±1.5 dB Typ. - Measured ±1.46 dB
  - 40 to 60 dB: ±2.0 dB Typ. - Measured ±1.46 dB
- Minimum Attenuation Step: 0.06 dB
- Operating Power: 15 dBm Typ.
- Survival Power: 1W Average from -65 ºC to +25 ºC
- Switching Time:
  - On time: 1.0 µs Max. - Measured 1 µs
  - Off Time: 0.5 µs Max. - Measured 0.4 µs
- DC Power Supply: +15V @ 150 mA Max. - Measured 128 mA
- Logic Input:
  - Logic "0" (Bit Off): -0.3 to +0.8 V
  - Logic "1" (Bit On): +2.0 to +5.0 V

PMI Website Link,
http://www.pmi-rf.com/Products/attenuators/DTA-0R5G18G-60-CD-1.htm
10.0 PMI Model No. LM-0518-10-1W-SHS-1-F, 0.5 to 18.0 GHz High Speed, High Power Limiter

PMI Model No. LM-0518-10-1W-SHS-1-F is a high speed, high power limiter that operates from 0.5 to 18.0 GHz. This limiter handles 100 Watts Peak Power with a pulse width of 1 µs. The insertion loss is only 2.0 dB typically and has a VSWR of 2.0:1 maximum. This limiter is supplied with SMA Female connectors in a small housing measuring only 0.5" x 0.5" x 0.22".

- Frequency Range: 0.5 to 18.0 GHz
- Insertion Loss @ -20 dBm Input: 2.0 dB Max., 1.5 dB Typ. - Measured 1.96 dB
- VSWR @ -20 dBm Input: 2.0:1 Max., 1.5:1 Typ. - Measured 1.65:1 Input, 1.66:1 Output
- Leakage @ 1 Watt CW Immune: +14 dBm Max., +10 dBm Typ. - Measured +12.8 dBm Max.
- Speed: 10 ns - Measured <10 ns
- Input Power: 1 Watt CW, 100 Watts Peak, 1 µs Pulse, 0.1% Duty Cycle Derated to 20% at 125 ºC
- Limiting Threshold: +10 dBm Typ. - Measured +5 dBm Typ.

PMI Website Link,
http://www.pmi-rf.com/Products/limiters/LM-0518-10-1W-SHS-1-F.htm

*** For more information on PMI's complete line of products, please visit ***
http://www.pmi-rf.com

DC to 50 GHz Components, Modules, and Sub-Systems

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- Low Noise Amplifiers
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- Filters and Switch Filter Banks
We truly value your interest in our company and our products. We appreciate your feedback. Please feel free to contact us with any requirements or questions that you may have.

Sincerely,

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