



Presenting...
New Product Releases from
Planar Monolithics Industries, Inc.
December 7, 2019

1.0 PMI Model No. EWDM-6G18G-65-70MV, 6.0 to 18.0 GHz CW Immune EW Detector Module

PMI Model No. EWDM-6G18G-65-70MV that operates over the 6.0 to 18.0 GHz frequency range. It has a maximum input VSWR of 2.3:1 and a maximum noise figure of 8 dB. This model is outfitted with SMA female connectors in a housing measuring 4.20" x 2.90" x 0.80".

- Specifications:
 - Input Frequency: 6.0 to 18.0 GHz
 - Input VSWR: 2.3:1 Max., Impedance = 50 Ohms
 - Measured 1.36:1 @ 50 Ohms (Bit In)
 - Measured 1.46:1 @ 50 Ohms (RF In)
 - Measured 1.81:1 @ 50 Ohms (RF Out)
 - Measured 2.08:1 @ 50 Ohms (SW)
 - Noise Figure: 8 dB Max. -Measured 4.1 dB
 - Input Power:
 - 1 W CW Max.
 - 100 W Peak @ PW = 1 us & Duty Cycle = 1% Max.



- SP3T Switch Specifications:
 - Isolation: 60 dB Min. among all ports - **Measured 85 dB**
 - Switching Speed: 100 ns Max. - **Measured 45 ns**
- Output to 8-Way Power Combiner Specifications:
 - Linear Gain: +33 dB Min. - **Measured 40.7 dB**
 - Frequency Flatness: ± 2.5 dB Max. - **Measured ± 1.59 dB**
 - 1 dB Compression Point: +3 dBm Min. - **Measured 8.0 dBm**
 - Saturated Power: +14 dBm Max. - **Measured 11.2 dBm**
 - Second Harmonic: -9 dBc Min. - **Measured -13.97 dBc**
 - Third Harmonic: -12 dBc Min. - **Measured -26.84 dBc**
 - I/O VSWR: 2.3:1 Max., Impedance = 50 Ohms
- Output to Switch Matrix Specifications:
 - Linear Gain: +7 dB Min. - **Measured 14.3 dB**
 - Frequency Flatness: ± 1.5 dB Max. - **Measured ± 0.99 dB**
 - 1 dB Compression Point: +3 dBm Min. - **Measured 3.8 dBm**
 - Saturated Power: +9 dBm Max. - **Measured 8.5 dBm**
 - Second Harmonic: -9 dBc Min. - **Measured -14.04 dBc**
 - Third Harmonic: -12 dBc Min. - **Measured -16.30 dBc**
 - I/O VSWR: 2.3:1 Max., Impedance = 50 Ohms
- DC Power Specifications:
 - DC Supply Voltage: ± 15 V $\pm 5\%$
 - Ripple from DC to 10 MHz: 100 mV Max.
 - Current:
 - 1.0 A for +15 VDC Max. - **Measured 499 mA**
 - 0.5 A for -15 VDC Max. - **Measured 113 mA**
- Log Video Output Specifications:
 - TSS: -71 dBm Max.
 - Dynamic Range: -65 to 0 dBm
 - Log Slope, Fixed: 70 mV/dB Nominal
 - Log Linearity (Deviation from 70 mV/dB Straight Line @ 10 GHz & 25°C): ± 1.0 dB Max. - **Measured ± 0.6 dB**
 - Log Accuracy (Deviation from 70 mV/dB Straight Line @ 25°C & Frequency Range): ± 1.75 dB Max. - **Measured ± 1.6 dB**
 - Absolute Log Accuracy (Deviation from 70 mV/dB Straight Line Over Frequency & Temperature Range): ± 2.0 dB Max. - **Measured ± 1.6 dB**
 - DC Offset: 0 ± 70 mV (RF Input Terminated & DC Power On) - **Measured -50 mV**
 - Rise Time (10% to 90%): 25 ns Typ., 28 ns Max.
 - Fall Time (90% to 10%): 300 ns Max. - **Measured 236 ns**
 - Settling Time: 50 ns Within ± 35 mV of Final Value Max. - **Measured 40 ns**
 - Recovery Time:
 - 1 μ s Max.
 - Measured from 1 dB below peak of the first 0 dBm, 330 μ s pulse to where the second -60 dBm, 100 ns pulse is measured within ± 1 dB error when the first 0 dBm pulse is not present
 - Video Frequency Flatness: ± 1.75 dB Max. at any constant input power from -65 to 0 dBm, as frequency is varied from 6 to 18 GHz (25°C) - **Measured ± 1.5 dB**
 - CW Immunity (Pulse Frequency and CW Frequency Difference of 500 MHz Min., Combined Signals are Inputted to DLVA):
 - CW immune power TSS to -40 dBm baseline shift: 140 mV Max. - **Measured 70 mV**
 - Pulse peak amplitude loss; 2 dB Max. - **Measured 1.45 dB**
 - Measured with a -30 dBm pulse in the presence of a -40 dBm CW signal
 - At CW > -40 dBm, pulse on CW
 - CW immune time at CW = -40 dBm, 3 ms Max. - **Measured 2.5 ms**
 - CW recovery time at CW = -40 dBm, 100 μ s Max. - **Measured 80 μ s**
 - Pulse Response, Input Signal: 100 ns to CW
 - Output Impedance: 75 ± 1 Ohm
 - Video Output @ -65 dBm Within Frequency Range (Middle Point of Window): 330 ± 123 mV -

Measured 56 mV

- Output Video Driver Capability: Driving 150 ft RG11 into 75 Ohm Load
- Output Pulse Peak Variation Versus Duty Cycle:
 - ± 70 mV Max. - Measured 60 mV
 - Power changes from -60 to 0 dBm, pulse width changes from 100 ns to 330 us for a duty cycle up to 60%, except when the minimum time between the first and second pulse is 1.5 us
- Signal Processing Capability: 100 ns to 330 us Pulse, Duty Cycle up to 60%
- Coupled Mode: Pseudo AC Coupled Mode
- Noise Level (Vp-p): 150 mV Max. - Measured 138 mV
- Drop of the Output Video Pulse at Lower Power -63 dBm for Pulse Width 330 us: 70 mV (1 dB) Max. - Measured 50 mV
- Propagation Delay: 80 ns (50% Input RF to 10% Output Video) Max. - Measured 30.8 ns

PMI Website Link,

<https://www.pmi-rf.com/product-details/ewdm-6g18g-65-70mv>

2.0 PMI Model No. PMC-33D7-6D8-SFF, 3.0 to 3.7 GHz Monopulse Comparator

PMI Model No. PMC-33D7-6D8-SFF is a 3.0 to 3.7 GHz Monopulse Comparator. It has a typical insertion loss of 0.8 dB and a maximum VSWR of 1.3:1. This model is outfitted with SMA female connectors in a housing measuring 3.23" x 3.23" x 0.43".

- Frequency Range: 3.0 to 3.7 GHz
- Insertion Loss: 0.8 dB Typ. (If input signals at ports A, B, C and D are equal Amplitude or Power & Inphase with an output at Port AZ Σ) - Measured 0.4 dB
- Insertion Loss: 6.8 dB Max. (If input signals at ports A, B, C or D and all other ports are terminated to 50 Ohms with an output at ports EL Δ , AZ Σ , AQ or AZ Δ) - Measured 6.7 dB
- Amplitude Balance: ± 0.5 dB Max. - Measured ± 0.2 dB
- Phase Balance: $\pm 7^\circ$ - Measured $\pm 2^\circ$
- Isolation: 24 dB Min. - Measured 24 dB
- VSWR: 1.3:1 Max. - Measured 1.2:1
- Power Handling:
 - Average: 11 Watt Max. (Port A, B, C & D)
 - Peak: 0.1 kW Max.
- Impedance: 50 Ohms



PMI Website Link,

<https://www.pmi-rf.com/product-details/pmc-33d7-6d8-sff>

3.0 PMI Model No. PIMA-26-4C-PD2-BPF-L 2.0 to 6.0 GHz Integrated Microwave Assembly

PMI Model No. PIMA-26-4C-PD2-BPF-L is a 2.0 to 6.0 GHz Integrated Microwave Assembly that consists of 4 channels with each channel having a 2-way power divider and a band pass filter. It has a maximum VSWR of 2.0:1 with a maximum insertion loss of 4.5 dB (above 3 dB). The housing is measured at 3.25" x 4.00" x 0.50".



- Frequency Range: 2.0 to 6.0 GHz
- Insertion Loss: 4.5 dB Max. (Above 3 dB) - **Measured 3.19 dB**
- VSWR: 2.0:1 Max. - **Measured 1.94:1**
- Isolation: 15 dB Min. - **Measured 15.6 dB**
- Amplitude Balance (3.0 to 5.0 GHz): ± 0.5 dB Max., ± 0.1 dB Goal - **Measured ± 0.05 dB**
- Phase Balance (3.0 to 5.0 GHz): $\pm 5^\circ$ Max., $\pm 1^\circ$ Goal - **Measured $\pm 2.55^\circ$**
- Filter Passband: 3.0 to 5.0 GHz
- Filter Rejection:
 - Below 2667 MHz ≥ 55 dB - **Measured 64.06 dB**
 - Above 5333 MHz ≥ 55 dB - **Measured 55.54 dB**
- Passband Flatness: ± 1 dB (3.2 to 4.8 GHz) - **Measured ± 0.52 dB**
- Channel to Channel:
 - Number of Channels: 4
 - Isolation: 60 dB Min. - **Measured 94.26 dB**

PMI Website Link,

<https://www.pmi-rf.com/product-details/pima-26-4c-pd2-bpf-l>

4.0 PMI Model No. BPF-11-14-SFF, 11.0 GHz Band Pass Filter

PMI Model No. BPF-11-14-SFF is a Band Pass Filter that operates over the frequency range of 3.75 to 18.25 GHz. It has a maximum insertion loss of 2.5 dB and a maximum VSWR of 2.0:1. The unit is supplied with SMA female connectors in a housing that measures 2.36" x 0.75" x 0.39".



- Frequency Range: 3.75 to 18.25 GHz
- Insertion Loss: 1.5 dB Typ., 2.5 dB Max. - **Measured 0.31 dB**
- VSWR: 1.5:1 Typ., 2.0:1 Max. - **Measured 1.94:1**
- Rejection @ DC to 2.75 GHz: 70 dB Typ. - **Measured 68 dB**
- Rejection @ 20.25 to 23.25 GHz: 60 dB Typ. - **Measured 63.71 dB**
- Input Power: 10 Watts Max.
- Impedance: 50 Ohms

PMI Website Link,

<https://www.pmi-rf.com/product-details/bpf-11-14-sff>

5.0 PMI Model No. PDVAN-8018-60-8, 8.0 to 18.0 GHz, 8-Bit Programmable

Attenuator

PMI Model No. PDVAN-8018-60-8 is an 8-Bit, Programmable Attenuator that operates over the frequency range of 8.0 to 18.0 GHz. It has a mean attenuation range of 60 dB and a typical switching time of 500 ns. This model is outfitted with SMA female connectors. Its housing measures 2.0" x 1.8" x 0.5".

- Frequency Range: 8.0 to 18.0 GHz
- Mean Attenuation Range: 60 dB - **Measured 65 dB**
- LSB: 0.25 dB
- Insertion Loss: 3.7 dB Max. - **Measured 2.3 dB**
- VSWR: 2.0:1 Max. - **Measured 1.5:1**
- Power Rating:
 - +20 dBm CW Min. (Operating)
 - +30 dBm CW Max. (Survival)
- Attenuation Flatness:
 - @ 10 dB: ± 0.8 dB - **Measured ± 0.51 dB**
 - @ 20 dB: ± 1.1 dB - **Measured ± 0.87 dB**
 - @ 40 dB: ± 1.5 dB - **Measured ± 1.20 dB**
 - @ 60 dB: ± 1.6 dB - **Measured ± 2.30 dB**
- Switching Time: 500 ns Typ.
- Digital Control: 8-Bit Binary TTL
- Input Tracking: Monotonic
- Power Supply:
 - +12 V to +15 V @ 150 mA Max. - **Measured 39 mA**
 - -12 V to -15 V @ 75 mA Max. - **Measured 0 mA**



PMI Website Link,

<https://www.pmi-rf.com/product-details/pdvan-8018-60-8>

6.0 PMI Model No. APD-4-218-LC-2, 2.0 to 18.0 GHz, 4-Way Power Divider

PMI Model No. APD-4-218-LC-2 is a 4-Way Power Divider that operates over the 2.0 to 18.0 GHz frequency range. This model offers a maximum of 2.0 dB insertion loss and a minimum isolation 16 dB. The 1.75" x 1.75" x 0.40" housing is outfitted with SMA female connectors.

- Frequency Range: 2.0 to 18.0 GHz
- Insertion Loss: 2.0 dB Max. (Above 6.02 dB Split) - **Measured 1.75 dB**
- VSWR Input: 1.65:1 Max. - **Measured 1.5:1**
- VSWR Output: 1.50:1 Max. - **Measured 1.40:1**
- Isolation: 16 dB Min. - **Measured 18.4 dB**
- Amplitude Balance: 0.5 dB Max. - **Measured 0.32 dB Max., -0.36 dB Min.**
- Phase Balance: 12° Max. - **Measured 5.16° Max., -0.36 dB Min.**
- Power Handling:
 - Forward: 10 Watts Max.
 - Reversed: 1 Watt Max.
- Impedance: 50 Ohms



PMI Website Link,

<https://www.pmi-rf.com/product-details/apd-4-218-lc-2>

7.0 PMI Model No. P6T-2G20G-55-T-SFF, 2.0 to 20.0 GHz, SP6T Absorptive

Switch

PMI Model No. P6T-20G-55-T-SFF is a Single Pole, Six Throw, Absorptive Switch with SMA female connectors. It has a frequency range of 2.0 to 20.0 GHz, 4.5 dB maximum insertion loss, and 55 dB minimum isolation. It has an operational input power of +20 dBm CW. The housing is measured at 3.1" x 1.0" x 0.4".



- Frequency Range: 2.0 to 20.0 GHz
- Isolation: 55 dB Min. - **Measured 62.8 dB**
- Insertion Loss: 4.5 dB Max. - **Measured 4.49 dB**
- Flatness:
 - 2.0 to 11.0 GHz: +1.0/-0.5 dB - **Measured +0.87/-0.46**
 - 11.0 to 20.0 GHz: +2.0/-0.5 dB - **Measured +0.96/-0.51**
- VSWR In/Out: 2.0:1 Max. - **Measured 1.99:1**
- Input Power: +20 dBm Operational, +27 dBm Survival
- RF Switching Speed:
 - Rise: 30 ns Max. 10% to 90% - **Measured 2.34 ns**
 - Fall: 30 ns Max. 90% to 10% - **Measured 2.60 ns**
- DC Voltage:
 - +15 V @ 200 mA - **Measured 47 mV**
 - -5 V @ 100 mA - **Measured 23 mV**
- Control Logic:
 - "0" = On
 - "1" = Off
- Video Leakage: <1.3 V Max., 25 ns Window
 - Measured BW 20 MHz = 280 mV
 - Measured BW 350 MHz = 952 mV

PMI Website Link,

<https://www.pmi-rf.com/product-details/p6t-2g20g-55-t-sff>

8.0 PMI Model No. BPM-26D5G40G-180-292FF, 26.5 to 40.0 GHz Bi-Phase Modulator

PMI Model No. BPM-26D5G40G-180-292FF is a Bi-Phase Modulator that operates over the 26.5 to 40.0 GHz frequency range. The typical insertion loss 5.5 dB and the maximum switching speed is 100 ns. The housing measures 1.0" x 1.0" x 0.50" and is supplied with 2.92 mm female connectors.



- Frequency Range: 26.5 to 40.0 GHz
- Insertion Loss: 5.5 dB Typ.
- Phase Shift: $\pm 30^\circ$ Typ.
- Amplitude Balance: ± 2.0 dB Typ. - **Measured ± 1.44 dB**
- Phase Shift Control Input:
 - TTL "0" = 0°
 - TL "1" = 180°
- VSWR: 2.0:1 Typ., 3.0:1 Max.
- Switching Speed: 100 ns Max. - **Measured 50 ns**
- Impedance: 50 Ohms
- Power Supply:
 - +5 VDC @ 75 mA Max.
 - -5 VDC @ 20 mA Max.

9.0 PMI Model No. P3T-2G18G-70-T-SFF, 2.0 to 18.0 GHz SP3T Absorptive Switch

PMI Model No. P3T-2G18G-70-T-SFF is a Single Pole, Three Throw, Absorptive Switch that operates over the 2.0 to 18.0 GHz frequency range. It has a maximum insertion loss of 3 dB and a minimum isolation of 70 dB. This model is outfitted with SMA female connectors in a housing measuring 1.0" x 1.0" x 0.4".



- Frequency Range: 2.0 to 18.0 GHz
- Insertion Loss: 3 dB Max. - Measured 2.98 dB
- VSWR (All Ports): 2.0:1 Max. - Measured 1.87:1
- Isolation: 70 dB Min. - Measured 76 dB
- Switching Speed: 150 ns - Measured 30 ns On/21.9 ns Off
- RF Survival Power: 1 Watt Min. (1 us, 0.1% Duty Cycle Pulse)
- DC Power:
 - +12 V @ 160 mA - Measured 94 mA
 - -12 V @ 85 mA - Measured 69 mA
- Input Power: ± 20 dBm Max.
- Control Signals: TTL/CMOS Compatible, Logic 1 is High
- Number of Control Lines: 3
- Control Logic: Inverting

PMI Website Link,

<https://www.pmi-rf.com/product-details/p3t-2g18g-70-t-sff>

10.0 PMI Model No. PE2-30-6R018R0-3R5-22-12-SFF, 6.0 to 18.0 GHz Low Noise Amplifier

PMI Model No. PE2-30-6R018R0-3R5-22-12-SFF is a Low Noise Amplifier with a frequency range of 6.0 to 18.0 GHz. The typical gain is 30 dB and the typical noise figure is 3.5 dB. This model is offered in PMI's standard PE2 housing measuring 1.08" x 0.71" x 0.29".



- Frequency Range: 6.0 to 18.0 GHz
- Gain: 30 dB Typ., 25 dB Min. - Measured 34.4 dB Typ., 33.7 dB Min.
- Gain Flatness: ± 1.5 dB Max. - Measured ± 0.7 dB
- Noise Figure: 3.5 dB Typ. - Measured 3.2 dB
- OP1dB: +18.5 dBm Min. - Measured +18.6 dBm
- VSWR Input/Output: 2.0:1 Max. - Measured 1.7:1
- DC Voltage Supply: +12 to +15 VDC
- DC Current Draw: 325 mA Max. - Measured 275 mA

PMI Website Link,

<https://www.pmi-rf.com/product-details/pe2-30-6r018r0-3r5-22-12-sff>

11.0 PMI Model No. HP2G-1780-CD-SS-OPT2200, 2.5 to 18.0 GHz High Pass

Filter

PMI Model No. HP2G-1780-CD-SS-OPT2200 is a High Pass Filter with a passband from 2.5 to 18.0 GHz. It has a maximum insertion loss of 1.0 dB and a maximum VSWR of 2.0:1. It is supplied with SMA female connectors in a housing measuring 0.75" x 0.75" x 0.50".



- Passband: 2.5 to 18.0 GHz
- 3 dB Bandwidth: 2.2 GHz Nominal - **Measured 1.75 GHz**
- VSWR in the Passband: 1.5:1 Typ., 2.0:1 Max.
- Passband Ripple: 0.5 dB (Peak to Peak) Max. - **Measured 0.49 dB**
- Insertion Loss (Passband): 0.5 Typ., 1.0 dB Max.
- Rejection at 870 MHz: 80 dB Min. - **Measured 92.08 dB**

PMI Website Link,

<https://www.pmi-rf.com/product-details/hp2g-1780-cd-ss-opt2200>

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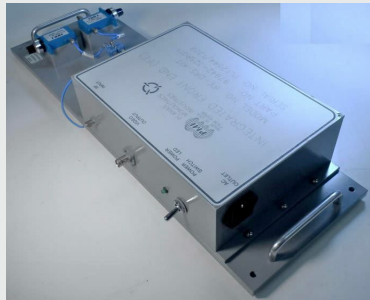
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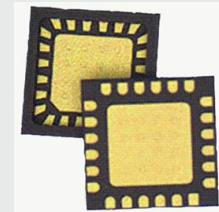
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