

DESCRIPTION

PMI MODEL SAA-218-6-093-013542 OPT. HERM IS A SWITCHABLE RF ATTENUATOR FOR SIX SIGNAL PATHS OPERATING FROM 2 TO 18 GHz. DESIGNED TO BE SWITCHED BETWEEN A LOW LOSS STATE (2 dB LOSS TYPICAL) AND A HIGH LOSS STATE (20 dB LOSS TYPICAL). THE SETTINGS WILL BE SELECTED BY SIX DIGITAL CONTROL BITS.

SPECIFICATIONS

- FREQUENCY RANGE: 2 TO 18 GHz
- LOGIC HIGH VOLTAGE, VH: 2.0 V MINIMUM, 3.5 V MAXIMUM
- LOGIC LOW VOLTAGE, VL: 0 V MINIMUM, 0.8 V MAXIMUM
- CURRENT AT VH: 0 mA MINIMUM, 24 mA MAXIMUM
- CURRENT AT VL: 0 mA MINIMUM, 24 mA MAXIMUM
- LOAD CAPACITANCE: 0 pF MINIMUM, 35 pF MAXIMUM
- RISE TIME: 1.0 ns MINIMUM, 2.0 ns TYPICAL, 10.0 ns MAXIMUM
- FALL TIME: 1.0 ns MINIMUM, 2.0 ns TYPICAL, 10.0 ns MAXIMUM
- RESPONSE TIME: 100 ns MAXIMUM (50% VOLTAGE OF INPUT LOGIC SIGNAL TO 1 dB OF FINAL VALUE OF RF ATTENUATION)
- REPETITION RATE: SUPPORT SWITCHING FROM DC TO 500 kHz
- INSERTION LOSS: "1 = 2 dB INSERTION LOSS"
"0 = 20 dB INSERTION LOSS"
- TOLERANCE AND FLATNESS: LOW LOSS: +1 dB, -2 dB (IL OF 1 dB TO 4 dB)
HIGH LOSS: +2 dB, -2 dB (IL OF 18 dB TO 22 dB)
- VSWR: 2.0:1 MAXIMUM
- OUTPUT 1 dB COMPRESSION: 18 dBm
- ISOLATION: 50 dB MINIMUM, BETWEEN ANY OF THE SIX OUTPUTS WITH ANY SWITCH SETTING
- STABILITY: < -70 dBm SPURIOUS OUTPUT SIGNAL*
- VIDEO SPIKE LEAKAGE: < 500 mV PEAK TO PEAK (MEASURED WITH A MINIMUM BANDWITH OF 200 MHz)
- SPECTRAL ACTIVITY: -70 dBm MAXIMUM @ 500 kHz SWITCHING RATE
- DC VOLTAGE: -5 ± 0.1 VDC @ 0.30 A MAXIMUM
+5 ± 0.1 VDC @ 0.30 A MAXIMUM
- AC RIPPLE: 120 mV PEAK TO PEAK MAXIMUM**
- CONNECTORS
 - INPUT - OUTPUT: SMA (F) REMOVABLE
 - CONTROL & POWER: 9 PIN MICRO D PLUG (M83513-03A03C)
- SIZE: 1.959" (MAX) X 4.000" (MAX) X 0.810" (MAX)
- WEIGHT: 1.0 LBS MAXIMUM
- FINISH: PLATE & WIRE BAR - CHEMICAL FILM :
YELLOW COLOR CLASS 3 PER MIL-C-5541

ATTENUATORS - GOLD PLATED AND HERMETICALLY SEALED

- * SHOULD BE UNCONDITIONALLY STABLE PER THE FOLLOWING CONDITIONS: A, B, C
- A. WITH ANY INPUT OR OUTPUT PORT TERMINATED IN ANY PASSIVE SOURCE OR LOAD IMPEDANCE
- B. WITH INPUT POWER LEVELS RANGING FROM NO INPUT TO THE MAXIMUM THAT IS SPECIFIED ON TABLE 1
- C. WITH ANY OPERATING TEMPERATURE SPECIFIED IN TABLE 1

** AC RIPPLE FREQUENCY IS 600 kHz TYPICAL

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ENVIRONMENTAL RATINGS:

TABLE 1: ABSOLUTE MAXIMUM RATINGS

PARAMETER	ZONE	SPECIFICATION
CONTINUOUS OPERATING TEMPERATURE	B	-40 °C TO 71.1 °C - CONTINUOUS N/A - MTBF
	C	-40 °C TO 71.1 °C - CONTINUOUS N/A - MTBF
TRANSIENT TEMPERATURE	B	-53.9 °C TO 48.9 °C
	C	TBD
STORAGE TEMPERATURE	ALL	-53.9 °C TO 95 °C
SURROUNDING AIR PRESSURE UNPRESSURIZED AREAS, EQUIPMENT BAYS	ALL	0.44 PSIA TO 15.5 PSIA AT 0.6 PSI/SEC
NON-GUNFIRING VIBRATION ENVIRONMENT	ALL	FIGURE 1, VIBRATION VALUES (SEE PAGE 2)
GUNFIRING VIBRATION ENVIRONMENT	ALL	FIGURE 2, GUNFIRING VIBRATION VALUES (SEE PAGE 2)
CONTINUOUS RF INPUT POWER (1)	N/A	24 dBm (MAXIMUM)
+5 VOLT POWER SUPPLY	N/A	+6 V (MAXIMUM)
-5 VOLT POWER SUPPLY	N/A	+6 V (MINIMUM)

NOTE 1: IN THE FREQUENCY BAND OF 2 TO 18 GHz

TABLE 3: RF INPUT AND OUTPUT CONNECTORS

CONNECTOR	SIGNAL NAME	SPECIFICATION
J2	ATTEN LF A INPUT	OUTPUT CONTROL
J8	ATTEN LF A OUTPUT	LEFT FORWARD TRANSMITTER A
J3	ATTEN LF B INPUT	OUTPUT CONTROL
J9	ATTEN LF B OUTPUT	LEFT FORWARD TRANSMITTER B
J4	ATTEN RF A INPUT	OUTPUT CONTROL
J10	ATTEN RF A OUTPUT	RIGHT FORWARD TRANSMITTER A
J5	ATTEN RF B INPUT	OUTPUT CONTROL
J11	ATTEN RF B OUTPUT	RIGHT FORWARD TRANSMITTER B
J6	ATTEN AFT A INPUT	OUTPUT CONTROL
J12	ATTEN AFT A OUTPUT	AFT TRANSMITTER A
J7	ATTEN AFT B INPUT	OUTPUT CONTROL
J13	ATTEN AFT B OUTPUT	AFT TRANSMITTER B

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	03/25/15	

TABLE 2: P1 CONNECTOR

PIN NO.	SIGNAL NAME	SPECIFICATION
1	ATTEN LF A	ATTENUATION CONTROL BIT LF A
2	ATTEN LF B	ATTENUATION CONTROL BIT LF B
3	ATTEN RF A	ATTENUATION CONTROL BIT RF A
4	ATTEN RF B	ATTENUATION CONTROL BIT RF B
5	ATTEN AFT A	ATTENUATION CONTROL BIT AFT A
6	ATTEN AFT B	ATTENUATION CONTROL BIT AFT B
7	-5 VDC	DC POWER
8	GROUND	GROUND
9	+5 VDC	DC POWER

PMI CONFIDENTIAL AND PROPRIETARY

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ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE			
DRAWN		03/25/15	PRODUCT FEATURE			
CHECKED			SAA-218-6-093-13542 OPT. HERM			
ISSUED			SIZE	FSCM NO.	DWG NO.	REV.
			B	05XQ0	27013482	1
			SCALE N:S		SHEET 1 OF 3	

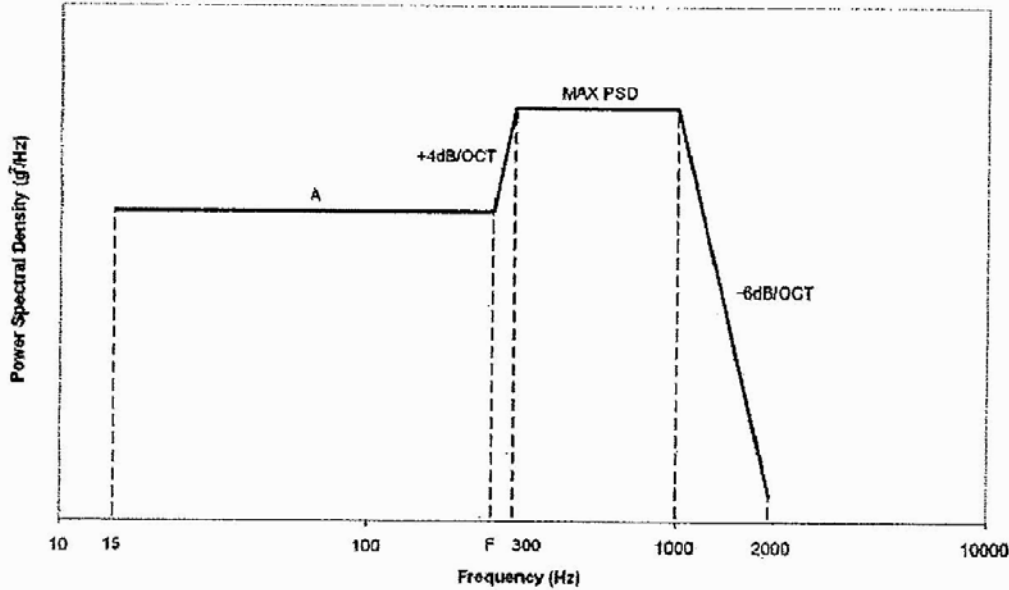
ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XX ±0.020
X.XXX ±0.010

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• NON-GUNFIRING VIBRATION ENVIRONMENT

Figure 1: Minimal Integrity Test – General
MIL-STD-810, 514.4-39, Modified

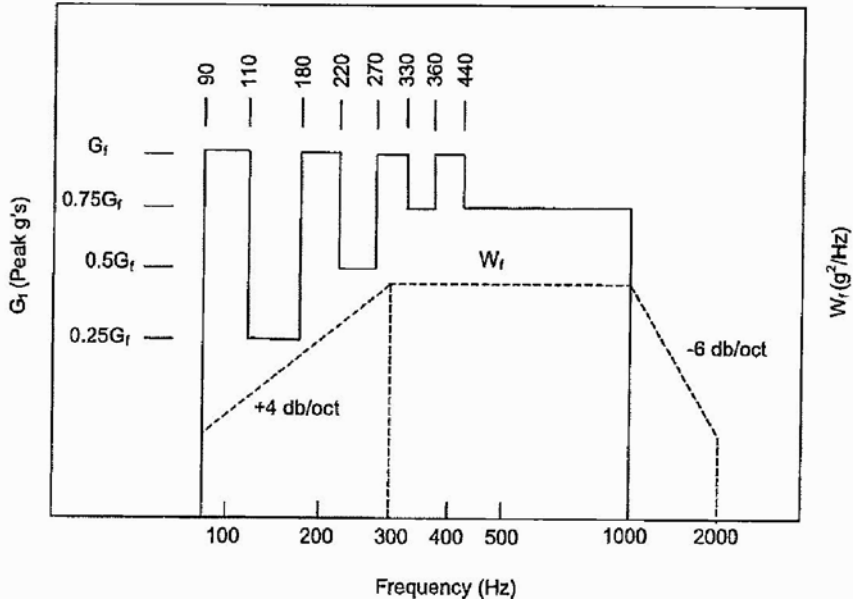


Vibration Values

Zone	Performance			Endurance		
	A	MAX PSD	F (REF)	A	MAX PSD	F (REF)
A	0.020	0.025	253.8	0.020	0.033	206.1
B	0.020	0.040	178.4	0.020	0.053	144.4
C	0.040	0.070	197.2	0.040	0.093	159.3
E	0.040	0.280	69.7	0.040	0.370	56.6
F	0.040	0.140	117.2	0.040	0.186	94.7

• GUNFIRING VIBRATION ENVIRONMENT

Figure 2: Gunfiring Vibration Environment



Gunfiring Vibration Values

	Gf	Wf PSD
A	2.7	0.012
B	8.4	0.036
C	3.3	0.014
E	SEE 3.2.12	
F	N/A	N/A

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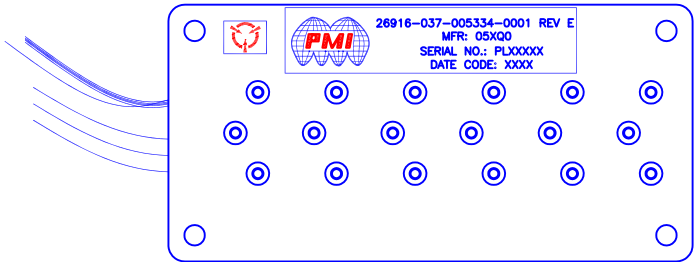
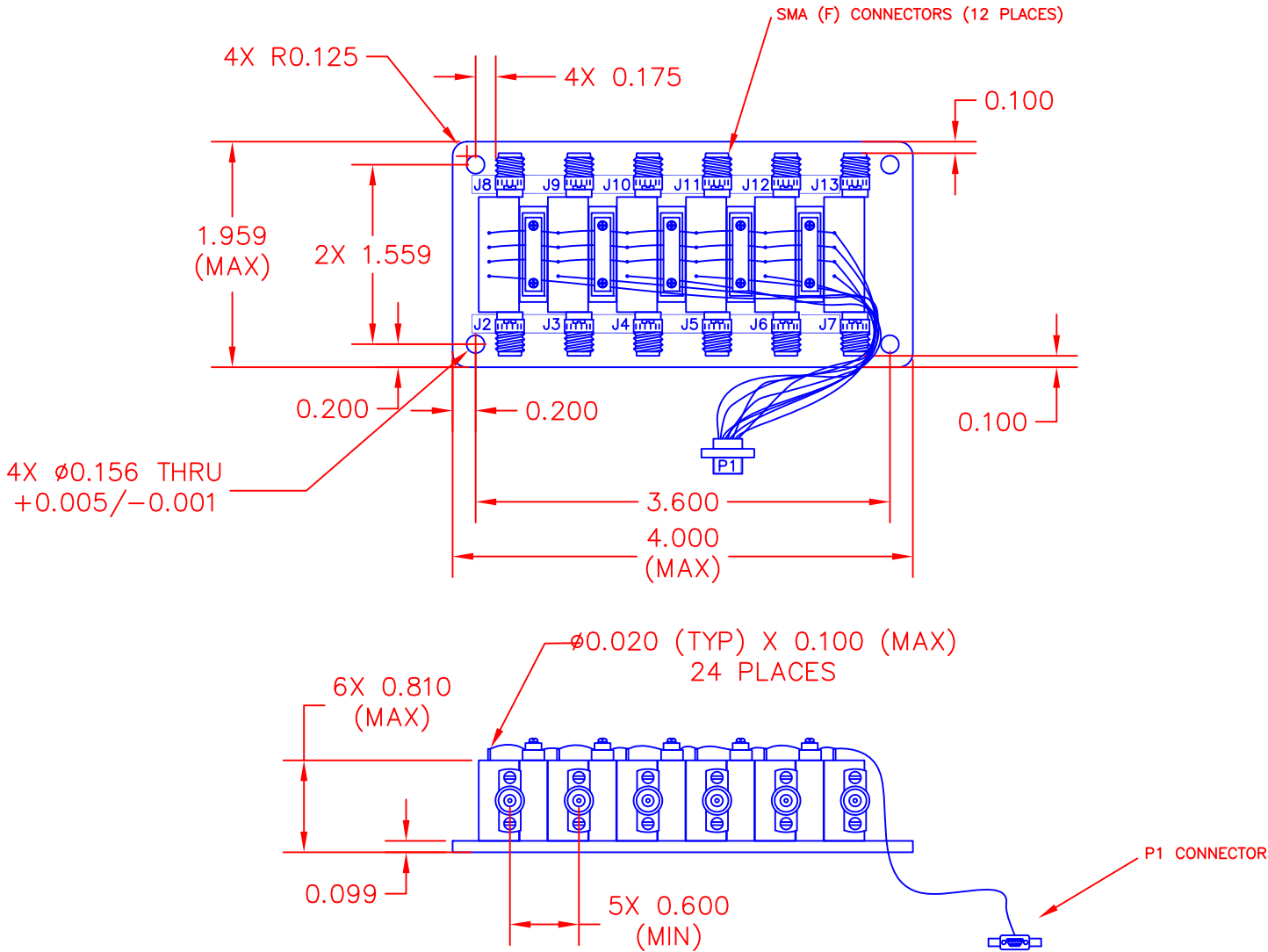
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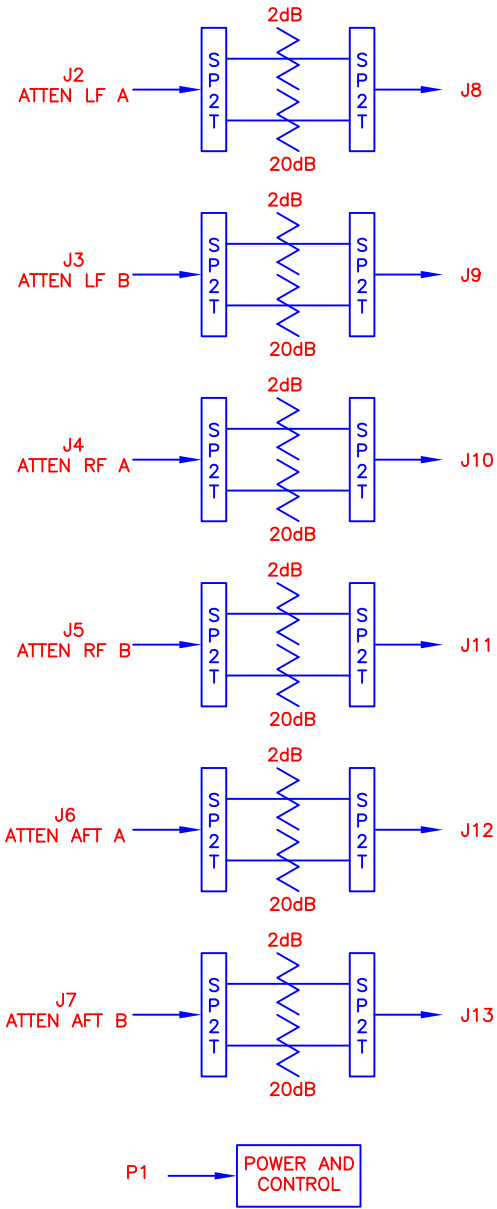
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MECHANICAL OUTLINE



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BLOCK DIAGRAM



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