



**AMERICAN MICROWAVE  
CORPORATION**

**TYPICAL DATA**

**ON**

**OCTAVE BAND**

**0.5 TO 18.0 GHz**

**500ns, HIGH SPEED**

**60dB DYNAMIC RANGE**

**DIGITALLY VARIABLE (DVAN)**

**VOLTAGE VARIABLE (VVAN)**

**AND**

**CURRENT VARIABLE (CVAN)**

**ABSORPTIVE, PIN DIODE ATTENUATORS**

**WITH**

**REMOVABLE SMA RF CONNECTORS FOR  
SURFACE MOUNT CAPABILITY**

**DVAN AND VVAN  
SERIES  
ATTENUATORS**

**DESIGNED  
BY  
A. K. GORWARA**

**REPORTED  
BY  
P. D. WOOD**

**JANUARY 29, 1996**



## DVAN & VVAN SERIES OCTAVE BAND 0.5 TO 18.0 GHz VARIABLE ATTENUATORS

- 60dB DYNAMIC RANGE
- LATCHING STROBE CAPABILITY
- 500 nSEC., MAXIMUM SWITCHING SPEED
- 8,10,11 & 12-BIT DIGITALLY VARIABLE MODELS(DVAN)
- 5dB & 10dB/VOLT, VOLTAGE VARIABLE MODELS (VVAN)
- REMOVABLE SMA RF CONNECTORS FOR SURFACE MOUNT CAPABILITY

### SPECIFICATIONS:

MODEL / (DVAN/VVAN)	FREQUENCY RANGE	INSERTION LOSS(MAX)	VSWR (MAX)	FLATNESS @ 10dB	FLATNESS @ 20dB	FLATNESS @ 40dB	FLATNESS @ 60dB
0510	0.5 to 1.0 GHz	2.0 dB	2.0:1	±0.45 dB	±0.3 dB	±1.5 dB	±1.6 dB
0510E <small>(Extended Bandwidth)</small>	0.4 to 1.25 GHz	2.5 dB	2.2:1	±0.65 dB	±1.5 dB	±3.0 dB	±3.5 dB
1020	1.0 to 2.0 GHz	2.0 dB	2.0:1	±0.45 dB	±0.3 dB	±1.5 dB	±1.6 dB
1020E <small>(Extended Bandwidth)</small>	0.75 to 2.25 GHz	2.5 dB	2.2:1	±0.65 dB	±1.5 dB	±3.0 dB	±3.5 dB
2040	2.0 to 4.0 GHz	2.0 dB	2.0:1	±0.45 dB	±0.3 dB	±1.5 dB	±1.6 dB
2040E <small>(Extended Bandwidth)</small>	1.5 to 4.5 GHz	2.5 dB	2.2:1	±0.65 dB	±1.5 dB	±3.0 dB	±3.5 dB
2550	2.5 to 5.0 GHz	2.1 dB	2.0:1	±0.47 dB	±0.37 dB	±1.5 dB	±1.6 dB
2550E <small>(Extended Bandwidth)</small>	1.9 to 5.6 GHz	2.6 dB	2.2:1	±0.7 dB	±1.5 dB	±3.0 dB	±3.5 dB
4080	4.0 to 8.0 GHz	2.5 dB	2.0:1	±0.5 dB	±0.37 dB	±1.5 dB	±1.6 dB
4080E <small>(Extended Bandwidth)</small>	3.0 to 9.0 GHz	2.7 dB	2.2:1	±0.75 dB	±1.5 dB	±3.0 dB	±3.5 dB
5010	5.0 to 10.0 GHz	2.7 dB	2.0:1	±0.6 dB	±0.9 dB	±1.5 dB	±1.6 dB
5010E <small>(Extended Bandwidth)</small>	3.75 to 11.25 GHz	2.9 dB	2.2:1	±0.8 dB	±1.5 dB	±3.0 dB	±3.5 dB
6012	6.0 to 12.0 GHz	2.3 dB	2.0:1	±0.7 dB	±1.0 dB	±1.5 dB	±1.6 dB
6012E <small>(Extended Bandwidth)</small>	4.5 to 13.5 GHz	3.0 dB	2.2:1	±0.9 dB	±1.6 dB	±3.0 dB	±3.5 dB
8013	8.0 to 18.0 GHz	2.7 dB**	2.0:1	±0.8 dB	±1.1 dB	±1.5 dB	±1.6 dB
8013E <small>(Extended Bandwidth)</small>	6.0 to 18.0 GHz	3.7 dB**	2.2:1	±0.9 dB	±1.6 dB	±3.0 dB	±3.5 dB

\*\* 2.7 dB Typical Loss to 16 GHz, 3.7 dB Max. Loss from 16.0 to 18.0 GHz.

TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



AVAILABLE DVAN DIGITAL CONTROL PINOUTS

PINOUT	8-BIT (STANDARD)	10-BIT	11-BIT	12-BIT
PIN 1	NOT USED	NOT USED	0.06 dB	0.03 dB
PIN 2	LATCHING STROBE * (OPTIONAL)	LATCHING STROBE * (OPTIONAL)	LATCHING STROBE * (OPTIONAL)	0.06 dB
PIN 3	NOT USED	0.13 dB	0.13 dB	0.13 dB
PIN 4	GROUND	GROUND	GROUND	GROUND
PIN 5	0.25 dB (LSB)	0.25 dB	0.25 dB	0.25 dB
PIN 6	0.5 dB	0.5 dB	0.5 dB	0.5 dB
PIN 7	1.0 dB	1.0 dB	1.0 dB	1.0 dB
PIN 8	2.0 dB	2.0 dB	2.0 dB	2.0 dB
PIN 9	4.0 dB	4.0 dB	4.0 dB	4.0 dB
PIN 10	8.0 dB	8.0 dB	8.0 dB	8.0 dB
PIN 11	16.0 dB	16.0 dB	16.0 dB	16.0 dB
PIN 12	32.0 dB (MSB)	32.0 dB (MSB)	32.0 dB (MSB)	32.0 dB (MSB)
PIN 13	+12 OR +15 VDC	+12 OR +15 VDC	+12 OR +15 VDC	+12 OR +15 VDC
PIN 14	-12 OR -15 VDC	-12 OR -15 VDC	-12 OR -15 VDC	-12 OR -15 VDC
PIN 15	NOT USED	0.06 dB (LSB)	0.03 dB (LSB)	0.016 dB (LSB)

\* Order "L" Suffix Models for Latching Strobe Capability, See "HOW TO ORDER" for more details.

STANDARD VVAN MULTIPIN ANALOG CONTROL PINOUTS  
 (OPTION "MP")

MP-MULTIPIN	CONNECTOR PINOUT FOR VOLTAGE VARIABLE ATTENUATORS (VVAN UNITS)
PIN 3	ANALOG INPUT
PIN 4	GROUND
PIN 13	+12 or +15 VDC
PIN 14	-12 or -15 VDC
ALL OTHER PINS NOT USED	

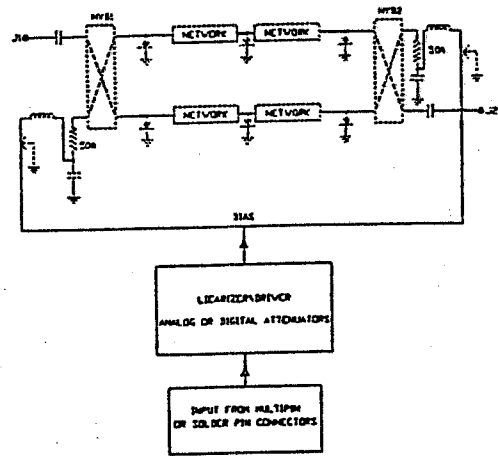
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



**SPECIFICATIONS:**

- DEVIATION FROM LINEARITY : 0 TO 30 dB ± 0.5 dB  
 : 30 TO 50 dB ± 1.0 dB  
 : 50 TO 60 dB ± 1.5 dB
- MONOTICITY : GUARANTEED
- SWITCHING SPEED : 500 nS MAX. (BETWEEN ATTENUATION SETTINGS)
- TEMPERATURE COEFFICIENT : ± 0.025 dB/°C
- RF POWER RATINGS : + 20 dBm OPERATING, + 30 dBm SURVIVAL
- CONTROL : 8-BIT (STANDARD) POSITIVE TRUE BINARY (DVAN)  
 (10-BIT, 11-BIT OR 12-BIT ALSO AVAILABLE) -OR-  
 : 10dB/VOLT(STANDARD) ANALOG TRANSFER  
 FUNCTION (VVAN)  
 (5dB/VOLT TRANSFER FUNCTION ALSO  
 AVAILABLE)
- DC POWER SUPPLY : ± 12vdc (STANDARD) OR ± 15vdc,  
 @ +150 mA, -75 mA MAX.(8-BIT DVAN MODEL)  
 @ +125 mA, -50 mA MAX.(ANALOG VVAN MODEL)
- CONNECTORS : REMOVABLE SMA FEMALE(STANDARD) FOR RF  
 : 15-PIN MULTIPIN(STANDARD, OPTION "MP") FOR POWER  
 AND CONTROL (SOLDER PIN CONTROLS,  
 OPTION "SP", AND OTHER OPTIONS AVAILABLE)
- SIZE : 2.0" X 1.80" X 0.5"
- WEIGHT : ≤4 OZ.

**FUNCTIONAL SCHEMATIC**



**ENVIRONMENTAL RATINGS**

- TEMPERATURE : -55°C to +85°C (Operating), -65°C to +125°C (Storage)
- HUMIDITY : MIL-STD-202F, METHOD 103B CONDITION B
- SHOCK : MIL-STD-202F, METHOD 312B CONDITION B
- VIBRATION : MIL-STD-202F, METHOD 204D CONDITION B
- ALTITUDE : MIL-STD-202F, METHOD 105C CONDITION B
- TEMPERATURE CYCLING : MIL-STD-202F, METHOD 107D CONDITION A

TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



AVAILABLE OPTIONS  
 AND  
 HOW TO ORDER

EXAMPLE

DVAN - 4080 - 60 - 8 - X - GP  
 1 2 3 4 5 6

- 1 : DVAN : DIGITALLY VARIABLE ATENUATOR NEW
- 2 : FREQUENCY OF OPERATION (e.g. 4.0 to 8.0 GHz)
- 3 : DYNAMIC RANGE IN dB
- 4 : NUMBER OF DIGITAL BITS (e.g. 8, 10, 11 or 12-bits)
- 5 : X=ANY COMBINATION OF THE DVAN OPTIONS GIVEN BELOW.
- 6 : GOLD PLATED (GP) MOUNTING SURFACE  
 All other sides are Painted.  
 PAINTED (P) MOUNTING SURFACE  
 This is Standard for all products

EXAMPLE

VVAN - 6012 - 60 - MP - 3 - GP  
 1 2 3 4 5 6

- 1 : VVAN : VOLTAGE VARIABLE ATENUATOR NEW
- 2 : FREQUENCY OF OPERATION (e.g. 6.0 to 12.0 GHz)
- 3 : DYNAMIC RANGE IN dB
- 4 : CONTROL CONNECTOR OPTION
  - MP : Standard Connector for Analog Units  
 (ITT Cannon 15-Pin Multipin Connector MDM-15PSP).
  - SP : Solder Pins for both Voltage and Control
  - SMA : Solder Pins for Voltage & SMA Female Control Connector
  - SMC : Solder Pins for Voltage & SMC Male Control Connector
- 5 : ADDITIONAL OPTIONS AS GIVEN BELOW
- 6 : GOLD PLATED (GP) MOUNTING SURFACE  
 All other sides are Painted.  
 PAINTED (P) MOUNTING SURFACE  
 This is Standard for all products

ADDITIONAL DVAN AND VVAN OPTIONS

OPTION No:	DVAN AVAILABLE OPTIONS (DIGITALLY VARIABLE)	OPTION No:	VVAN AVAILABLE OPTIONS (VOLTAGE VARIABLE)
1	Two SMA Male Removable RF Connectors	1	Two SMA Male Removable RF Connectors
2	One SMA Male & One SMA Female Removable RF Connector	2	One SMA Male & One SMA Female Removable RF Connector
3	Not/Applicable	3	5 dB/Volt Transfer Function
4	0 to 30dB Attenuation Range	4	0 to 30 dB Attenuation Range
5	± 15 vdc Supply Voltage	5	± 15 vdc Supply Voltage
L	Latching Strobe Capability	6	Substitute CVAN product code for the VVAN product code for Current Controlled (Non-Linearized) Attenuators (AVAILABLE WITH OPTIONS 1, 2, & 4 AND EITHER MP, SP, SMC OR SMA CONTROL CONNECTORS)

ORDERING:

AMERICAN MICROWAVE CORPORATION  
 7311-G GROVE ROAD, FREDERICK, MARYLAND 21704  
 TELEPHONE NUMBER : 301-662-4700  
 FACIMILE NUMBER : 301-662-4938

PLEASE CALL OR FAX FOR CATALOGS, TEST REPORTS AND ORDERING INFORMATION ON ANY OF OUR PRODUCTS.

TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



**STANDARD DVAN MODELS AVAILABLE**

FREQUENCY	MODEL NUMBER	CONTROL
0.5 TO 1.0 GHz	DVAN-0510-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)
1.0 TO 2.0 GHz	DVAN-1020-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)
2.0 TO 4.0 GHz	DVAN-2040-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)
4.0 TO 8.0 GHz	DVAN-4080-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)
5.0 TO 10.0 GHz	DVAN-5010-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)
6.0 TO 12.0 GHz	DVAN-6012-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)
8.0 TO 18.0 GHz	DVAN-8018-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON MDM-15PSP)

DVAN : DIGITALLY VARIABLE ATTENUATOR

TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



STANDARD VVAN MODELS AVAILABLE

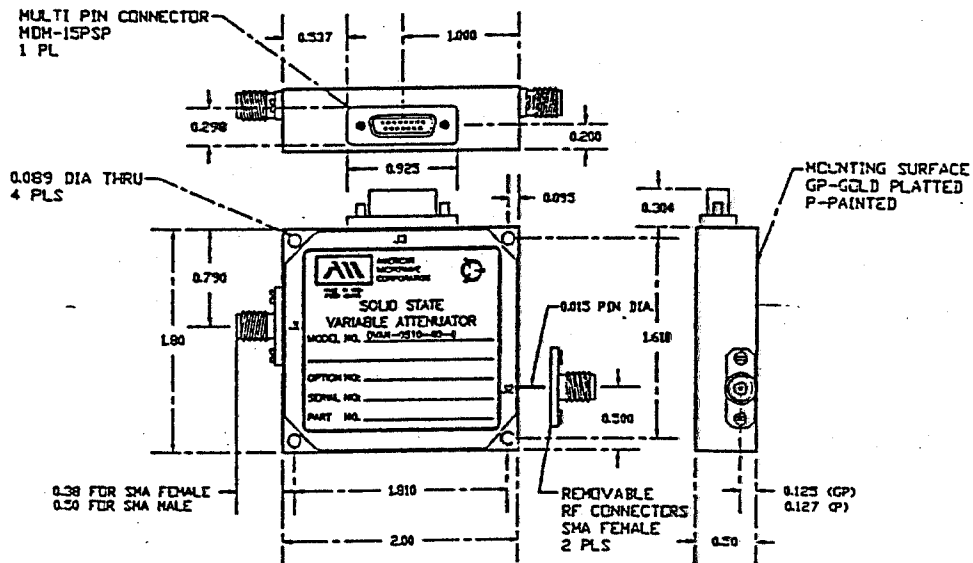
FREQUENCY	MODEL NUMBER	CONTROL
0.5 TO 1.0 GHz	VVAN-0510-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)
1.0 TO 2.0 GHz	VVAN-1020-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)
2.0 TO 4.0 GHz	VVAN-2040-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)
4.0 TO 8.0 GHz	VVAN-4080-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)
5.0 TO 10.0 GHz	VVAN-5010-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)
6.0 TO 12.0 GHz	VVAN-6012-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)
8.0 TO 18.0 GHz	VVAN-8018-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON MDM-15PSP)

VVAN : VOLTAGE VARIABLE ATTENUATOR

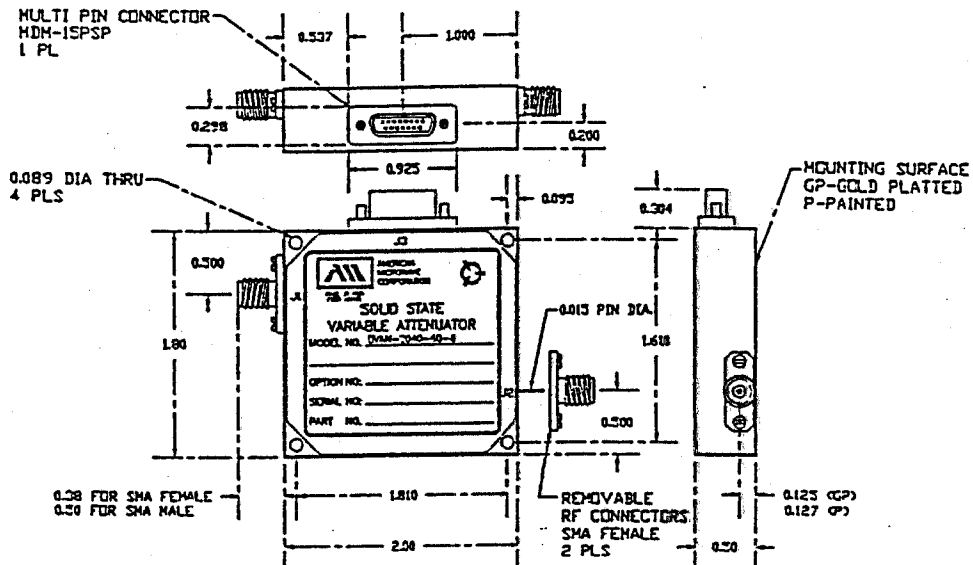
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



STANDARD MODEL  
 DVAN-0510/1020-60-8  
 DIGITALLY VARIABLE ATTENUATOR  
 (0.5 TO 1.0 GHz & 1.0 TO 2.0 GHz)



STANDARD MODEL  
 DVAN-2040/2550-60-8  
 DIGITALLY VARIABLE ATTENUATOR  
 (2.0 TO 4.0 GHz & 2.5 TO 5.0 GHz)

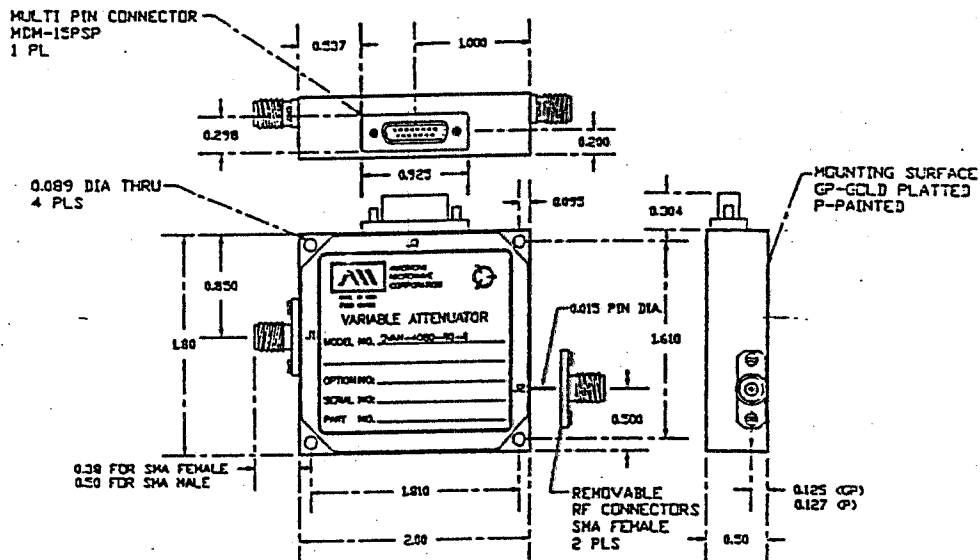




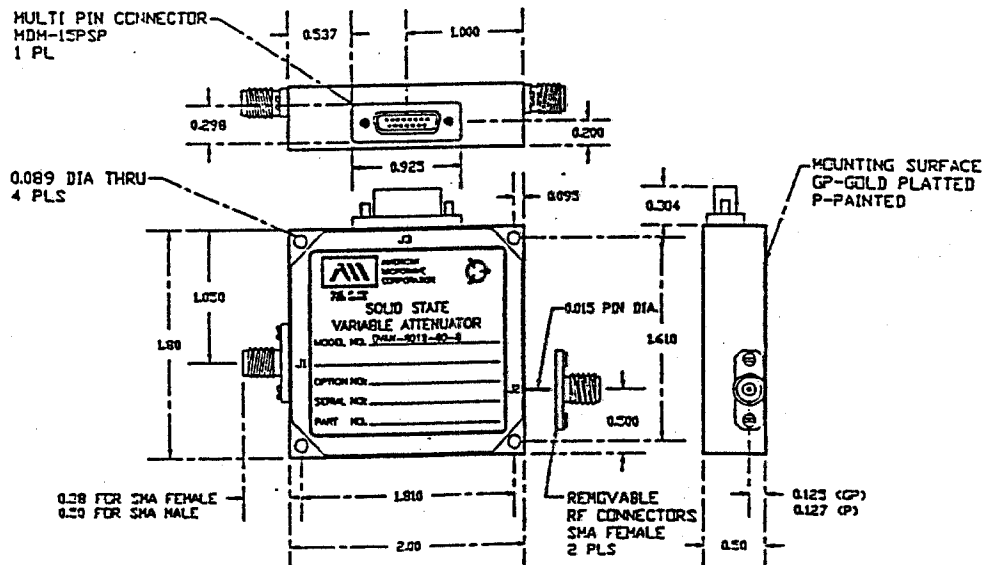
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



STANDARD MODEL  
 DVAN-4080/5010/6012-60-8  
 DIGITALLY VARIABLE ATTENUATOR  
 (4.0 TO 8.0 GHz, 5.0 TO 10.0 GHz & 6.0 TO 12.0 GHz)



STANDARD MODEL  
 DVAN-8018-60-8  
 DIGITALLY VARIABLE ATTENUATOR  
 (8.0 TO 18.0 GHz)

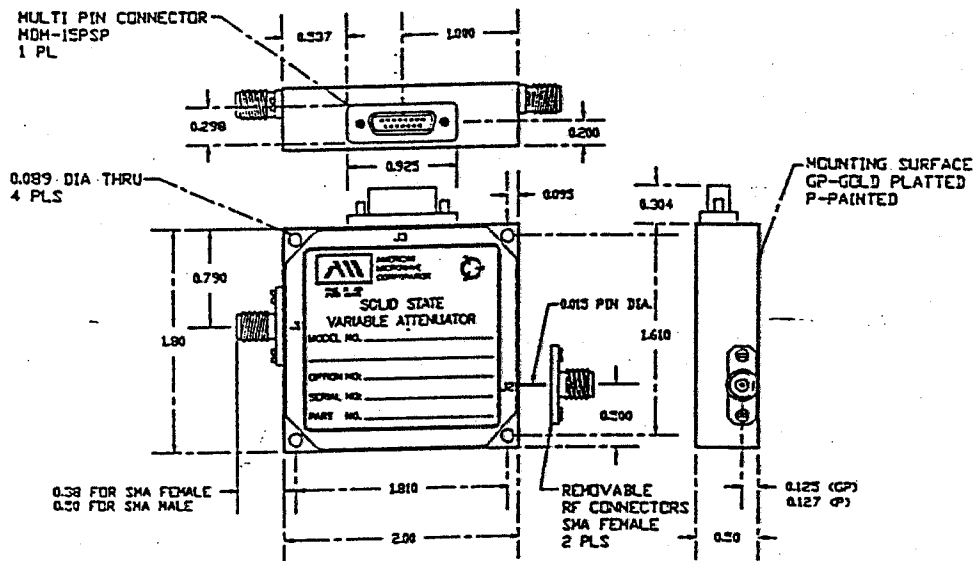


ALL DIMENSIONS ARE IN INCHES, TOLERANCE: X.XX ± 0.020, X.XXX ± 0.010

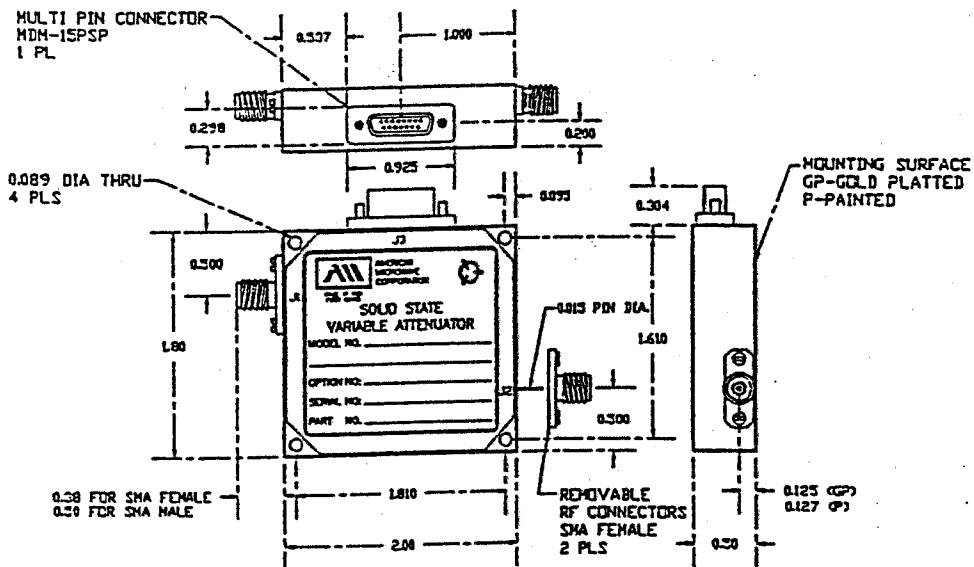
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



STANDARD MODELS  
 VVAN-0510/1020-60-MP  
 VOLTAGE VARIABLE ATTENUATOR  
 (0.5 TO 1.0 GHz & 1.0 TO 2.0 GHz)



STANDARD MODEL  
 VVAN-2040/2550-60-MP  
 VOLTAGE VARIABLE ATTENUATOR  
 (2.0 TO 4.0 GHz & 2.5 TO 5.0 GHz)



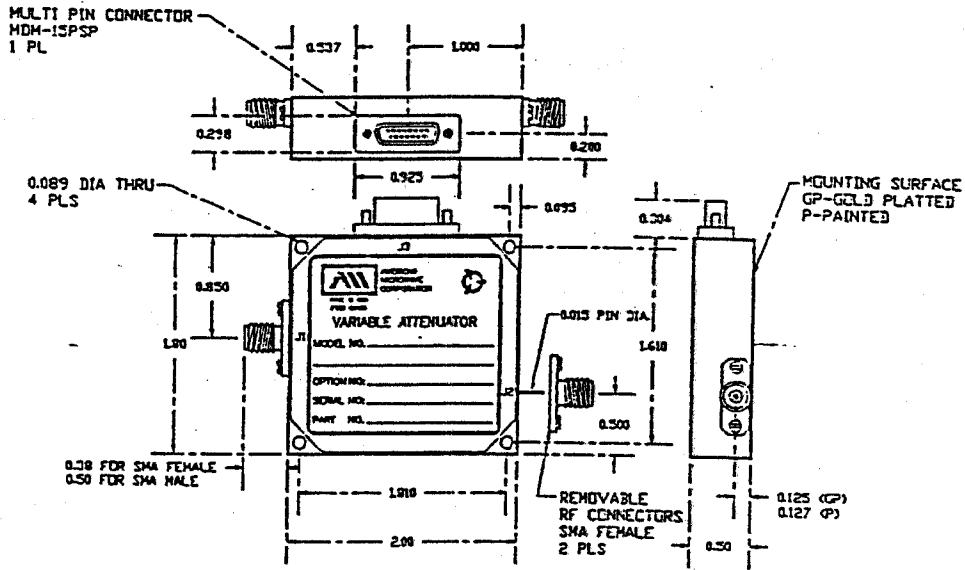
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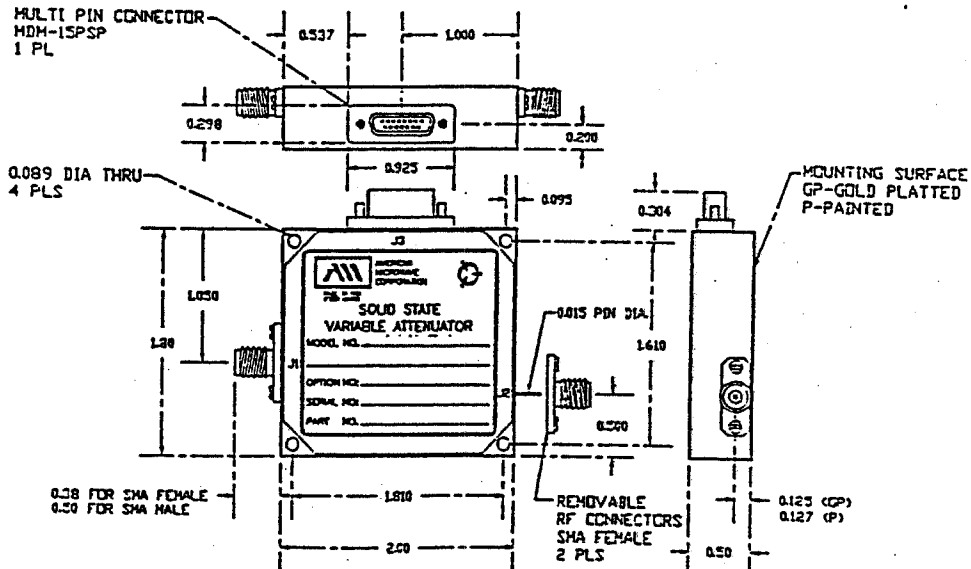
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



STANDARD MODELS  
 VVAN-4080/5010/6012-60-MP  
 VOLTAGE VARIABLE ATTENUATOR  
 (4.0 TO 8.0 GHz, 5.0 TO 10.0 GHz & 6.0 TO 12.0 GHz)



STANDARD MODEL  
 VVAN-8018-60-MP  
 VOLTAGE VARIABLE ATTENUATOR  
 (8.0 TO 13.0 GHz)



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



AVAILABLE OPTIONS ON VVAN ATTENUATORS

FREQUENCY	MODEL NUMBER	CONTROL
0.5 TO 1.0 GHz	VVAN-0510-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
0.5 TO 1.0 GHz	VVAN-0510-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
0.5 TO 1.0 GHz	VVAN-0510-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector
1.0 TO 2.0 GHz	VVAN-1020-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
1.0 TO 2.0 GHz	VVAN-1020-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
1.0 TO 2.0 GHz	VVAN-1020-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector
2.0 TO 4.0 GHz	VVAN-2040-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
2.0 TO 4.0 GHz	VVAN-2040-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
2.0 TO 4.0 GHz	VVAN-2040-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector

VVAN : VOLTAGE VARIABLE ATTENUATOR

TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



AVAILABLE OPTIONS ON VVAN ATTENUATORS

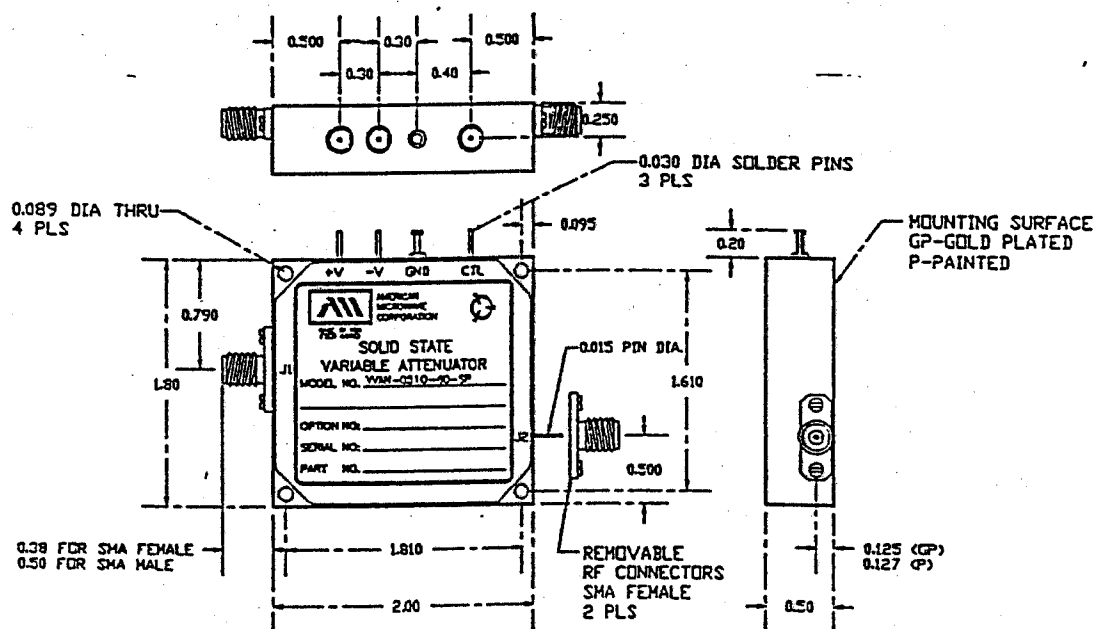
FREQUENCY	MODEL NUMBER	CONTROL
4.0 TO 8.0 GHz	VVAN-4080-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
4.0 TO 8.0 GHz	VVAN-4080-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
4.0 TO 8.0 GHz	VVAN-4080-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector
5.0 TO 10.0 GHz	VVAN-5010-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
5.0 TO 10.0 GHz	VVAN-5010-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
5.0 TO 10.0 GHz	VVAN-5010-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector
6.0 TO 12.0 GHz	VVAN-6012-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
6.0 TO 12.0 GHz	VVAN-6012-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
6.0 TO 12.0 GHz	VVAN-6012-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector
8.0 TO 18.0 GHz	VVAN-8018-60-SP	10dB/Volt Analog Control with Solder Pin Voltage & Control
8.0 TO 18.0 GHz	VVAN-8018-60-SMA	10dB/Volt Analog Control with Solder Pin Voltage & SMA Female Control Connector
8.0 TO 18.0 GHz	VVAN-8018-60-SMC	10dB/Volt Analog Control with Solder Pin Voltage & SMC Male Control Connector

VVAN : VOLTAGE VARIABLE ATTENUATOR

TYPICAL DATA  
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 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODELS  
**VVAN-0510/1020-60-SP**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SOLDER PIN CONTROL CONNECTORS  
 (0.5 TO 1.0 GHz & 1.0 TO 2.0 GHz)



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

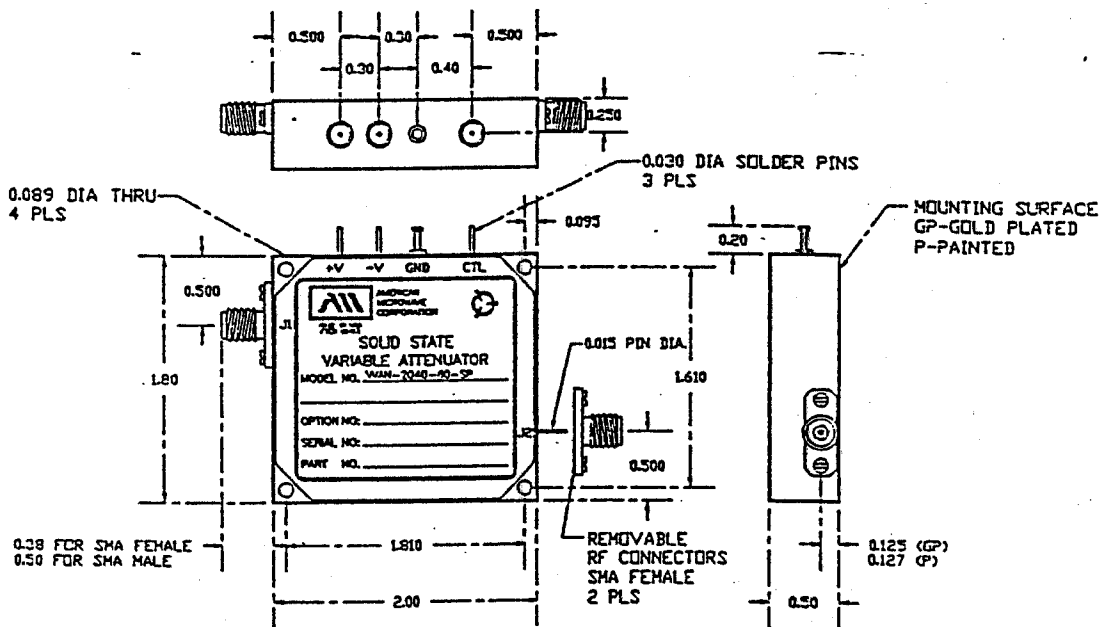
VVAN-0510/1020-60-SP

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TYPICAL DATA  
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 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODELS  
**VVAN-2040/2550-60-SP**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SOLDER PIN CONTROL CONNECTORS  
 (2.0 TO 4.0 GHz & 2.5 TO 5.0 GHz)



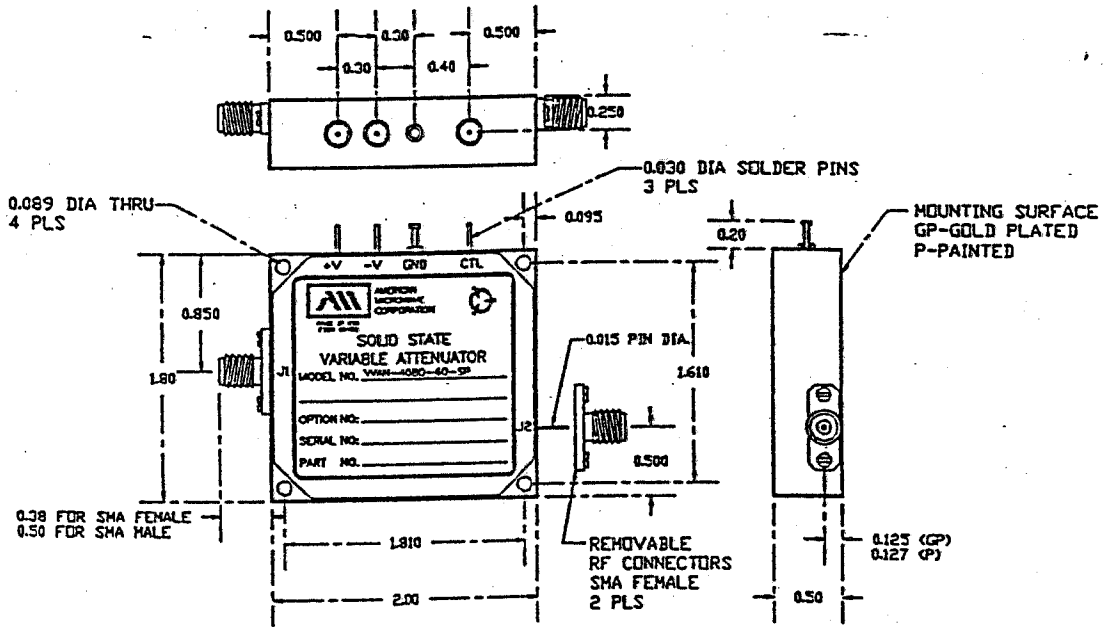
ALL DIMENSIONS ARE IN INCHES, X.XX ±0.020, X.XXX ±0.010

**VVAN-2040/2550-60-SP**

TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODEL  
**VVAN-4080/5010/6012-60-SP**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SOLDER PIN CONTROL CONNECTORS  
 (4.0 TO 8.0 GHz, 5.0 TO 10.0 GHz & 6.0 TO 12.0 GHz)



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

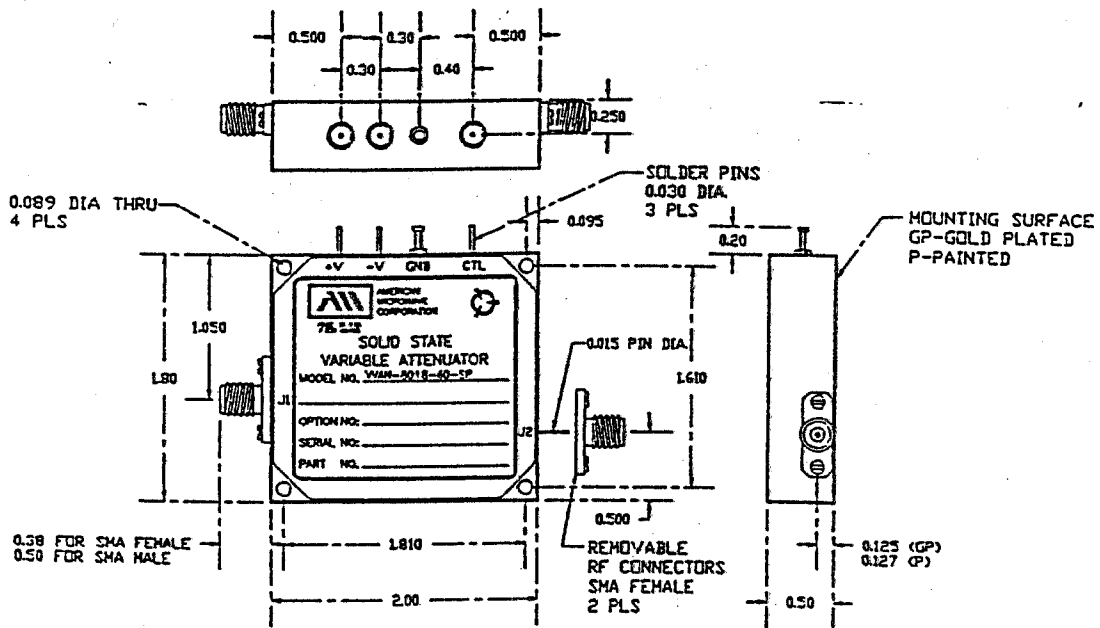
**VVAN-4080/5010/6012-60-SP**



TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODEL  
 VVAN-8018-60-SP  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SOLDER PIN CONTROL CONNECTOR  
 (8.0 TO 18.0 GHz)



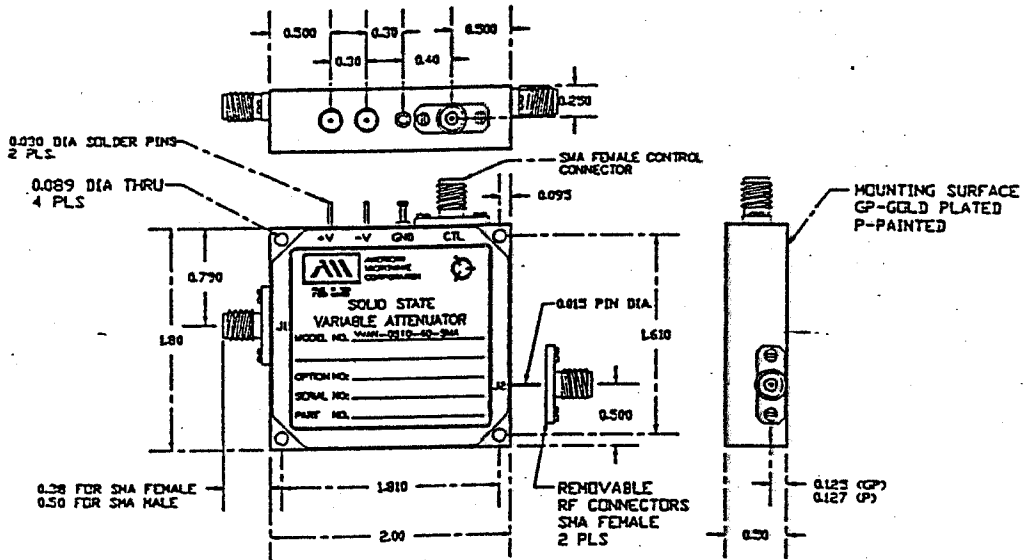
ALL DIMENSIONS ARE IN INCHES, TOLERANCE: X.XX ±0.020, X.XXX ±0.010

VVAN-8018-60-SP

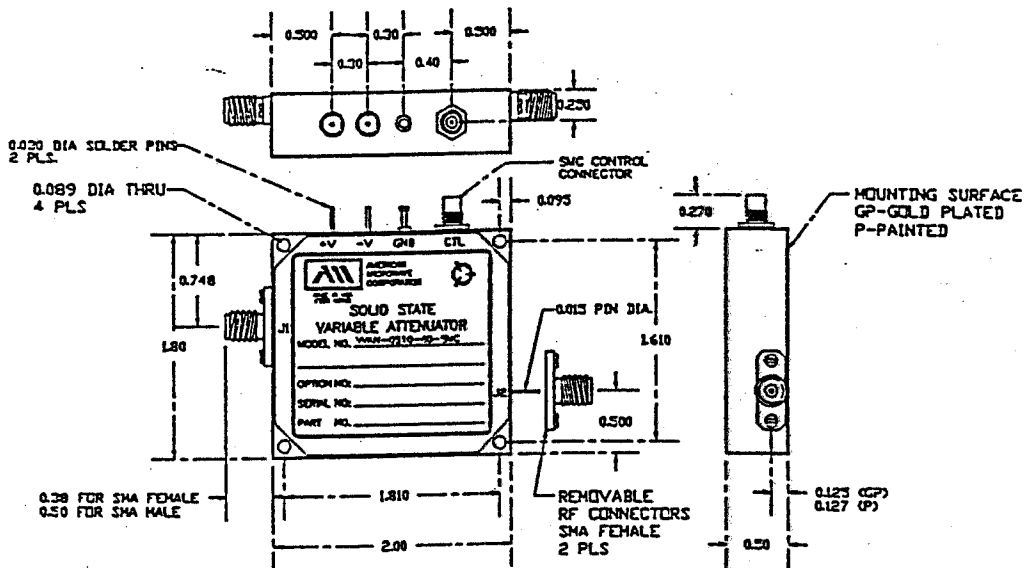
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODELS  
**VVAN-0510/1020-60-SMA**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SMA FEMALE CONTROL CONNECTOR  
 (0.5 TO 1.0 GHz & 1.0 TO 2.0 GHz)



**VVAN-0510/1020-60-SMC**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SMC MALE CONTROL CONNECTOR  
 (0.5 TO 1.0 GHz & 1.0 TO 2.0 GHz)

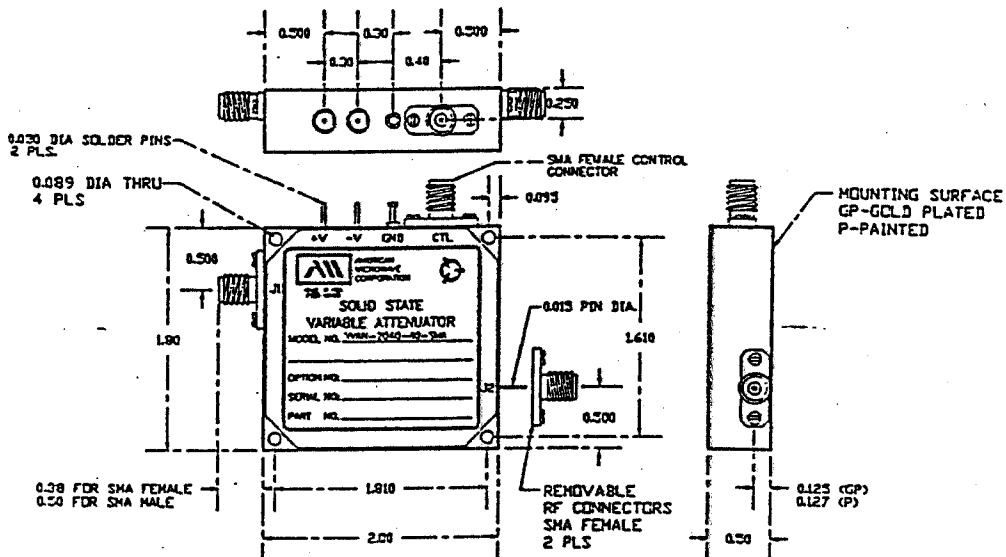


ALL DIMENSIONS ARE IN INCHES, TOLERANCE: X.XX ±0.020, X.XXX ±0.010

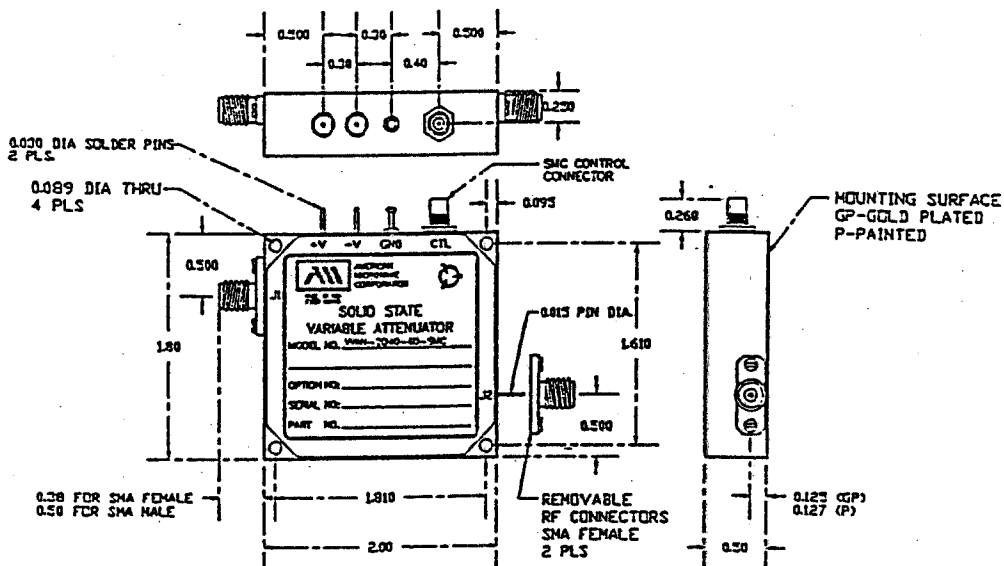
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODELS  
**VVAN-2040/2550-60-SMA**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SMA FEMALE CONTROL CONNECTOR  
 (2.0 TO 4.0 GHz & 2.5 TO 5.0 GHz)



**VVAN-2040/2550-60-SMC**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SMC MALE CONTROL CONNECTOR  
 (2.0 TO 4.0 GHz & 2.5 TO 5.0 GHz)

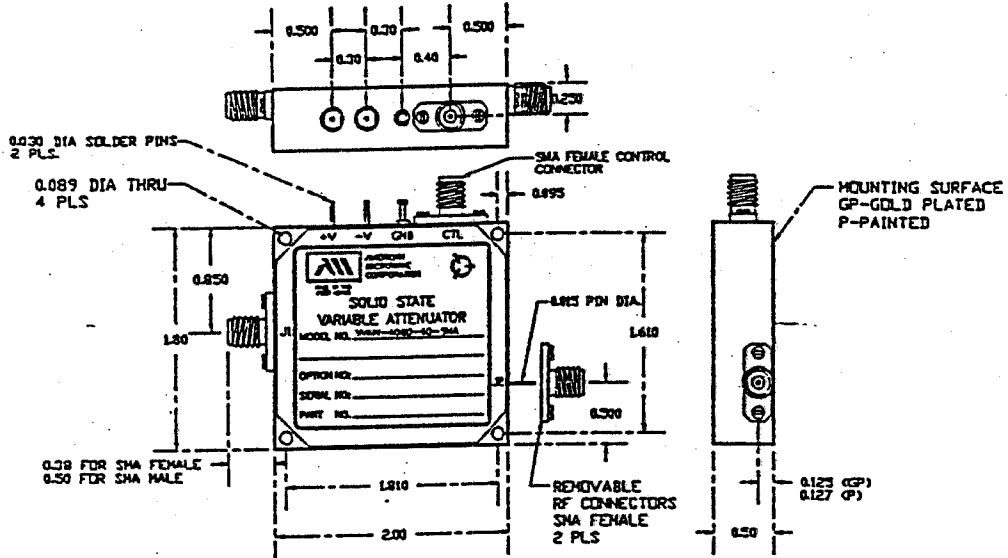


ALL DIMENSIONS ARE IN INCHES, TOLERANCE: X.XX ±0.020, X.XXX ±0.010

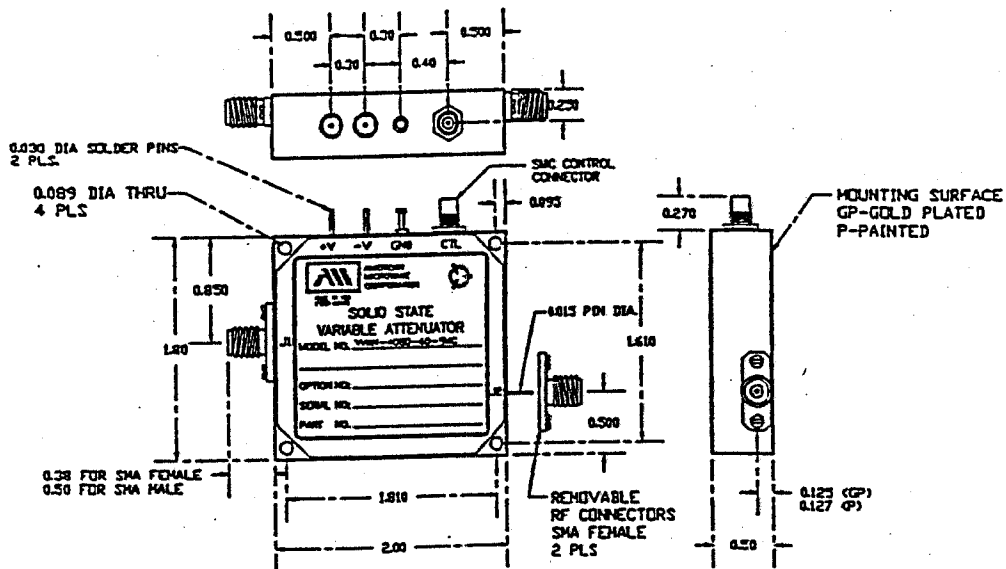
**TYPICAL DATA  
DVAN & VVAN SERIES  
60dB ABSORPTIVE ATTENUATORS**



**OPTIONAL MODELS  
VVAN-4080/5010/6012-60-SMA  
VOLTAGE VARIABLE ATTENUATOR  
WITH SMA FEMALE CONTROL CONNECTOR  
(4.0 TO 8.0 GHz, 5.0 TO 10.0 GHz & 6.0 TO 12.0 GHz)**



**VVAN-4080/5010/6012-60-SMC  
VOLTAGE VARIABLE ATTENUATOR  
WITH SMC MALE CONTROL CONNECTOR  
(4.0 TO 8.0 GHz, 5.0 TO 10.0 GHz & 6.0 TO 12.0 GHz)**

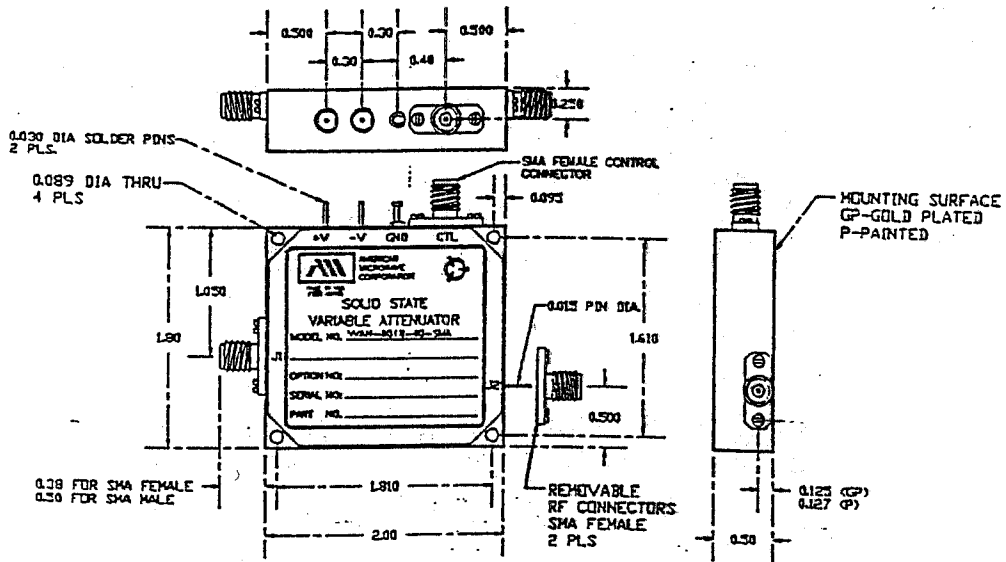


ALL DIMENSIONS ARE IN INCHES. TOLERANCE:  $\pm 0.020$ , X.XXX  $\pm 0.010$

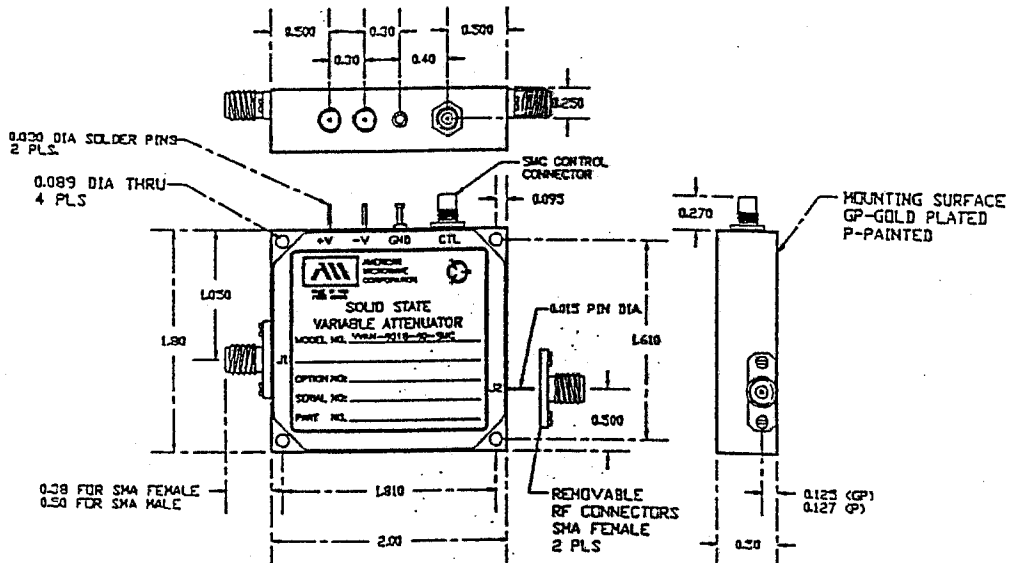
TYPICAL DATA  
 DVAN & VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



OPTIONAL MODELS  
**VVAN-8018-60-SMA**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SMA FEMALE CONTROL CONNECTOR  
 (8.0 TO 13.0 GHz)



**VVAN-8018-60-SMC**  
 VOLTAGE VARIABLE ATTENUATOR  
 WITH SMC MALE CONTROL CONNECTOR  
 (8.0 TO 13.0 GHz)



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

