



**AMERICAN MICROWAVE  
CORPORATION**

**TYPICAL DATA**

**ON**

**OCTAVE BAND**

**2.0 TO 18.0 GHz**

**500nS, HIGH SPEED**

**60dB DYNAMIC RANGE**

**DIGITALLY VARIABLE (A-DVAN)**

**VOLTAGE VARIABLE (A-VVAN)**

**AND**

**CURRENT VARIABLE (A-CVAN)**

**ABSORPTIVE, PIN DIODE ATTENUATORS**

**A-DVAN AND A-VVAN  
SERIES  
ATTENUATORS**

**DESIGNED  
BY  
A. K. GORWARA**

**REPORTED  
BY  
P. D. WOOD**

**FEBRUARY 17, 1996**



**AMERICAN MICROWAVE  
CORPORATION**

## A-DVAN & A-VVAN SERIES OCTAVE BAND 2.0 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(A-DVAN)
- 5dB & 10dB/VOLT, VOLTAGE VARIABLE MODELS (A-VVAN)

### SPECIFICATIONS:

MODEL # (A-DVAN/A-VVAN)	FREQUENCY RANGE	INSERTION LOSS(MAX)	VSWR (MAX)	FLATNESS @ 10dB	FLATNESS @ 20dB	FLATNESS @ 40dB	FLATNESS @ 60dB
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 (Extended Bandwidth)	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	±0.87 dB	±1.5 dB	±1.6 dB
2550E (Extended Bandwidth)	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	±0.87 dB	±1.5 dB	±1.6 dB
4080E (Extended Bandwidth)	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 (Extended Bandwidth)	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	2.8 dB	2.0:1	±0.7 dB	±1.0 dB	±1.5 dB	±1.6 dB
6012E (Extended Bandwidth)	4.5 to 13.5 GHz	3.0 dB	2.2:1	±0.9 dB	±1.6 dB	±3.0 dB	±3.5 dB
8018	8.0 to 18.0 GHz	2.7 dB**	2.0:1	±0.8 dB	±1.1 dB	±1.5 dB	±1.6 dB
8018E (Extended Bandwidth)	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.



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60dB ABSORPTIVE ATTENUATORS



AVAILABLE A-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 A-VVAN MULTIPIN ANALOG CONTROL PINOUTS  
(OPTION "MP")

MP-MULTIPIN	CONNECTOR PINOUT FOR VOLTAGE VARIABLE ATTENUATORS (A-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	

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 A-DVAN & A-VVAN SERIES  
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AVAILABLE OPTIONS  
 AND  
 HOW TO ORDER

EXAMPLE

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

- 1 : A-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 A-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

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

- 1 : A-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  
 • MP : Standard Connector for Analog Units  
(ITT Cannon 15-Pin Multiple Connector Per MIL-C-23006)
- 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 A-DVAN AND A-VVAN OPTIONS

OPTION No:	A-DVAN AVAILABLE OPTIONS (DIGITALLY VARIABLE)	OPTION No:	A-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 A-CVAN product code for the A-VVAN product code for Current Controlled (Non-Linearized) Attenuators

ORDERING:

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

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



**STANDARD A-DVAN MODELS AVAILABLE**

FREQUENCY	MODEL NUMBER	CONTROL
2.0 TO 4.0 GHz	A-DVAN-2040-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON per MIL-C-24308)
4.0 TO 8.0 GHz	A-DVAN-4080-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON per MIL-C-24308)
5.0 TO 10.0 GHz	A-DVAN-5010-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON per MIL-C-24308)
6.0 TO 12.0 GHz	A-DVAN-6012-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON per MIL-C-24308)
8.0 TO 18.0 GHz	A-DVAN-8018-60-8	8-Bit Digital Control (Standard) with 15-Pin Multipin Connector (ITT CANNON per MIL-C-24308)

A-DVAN : DIGITALLY VARIABLE ATTENUATOR

**STANDARD A-VVAN MODELS AVAILABLE**

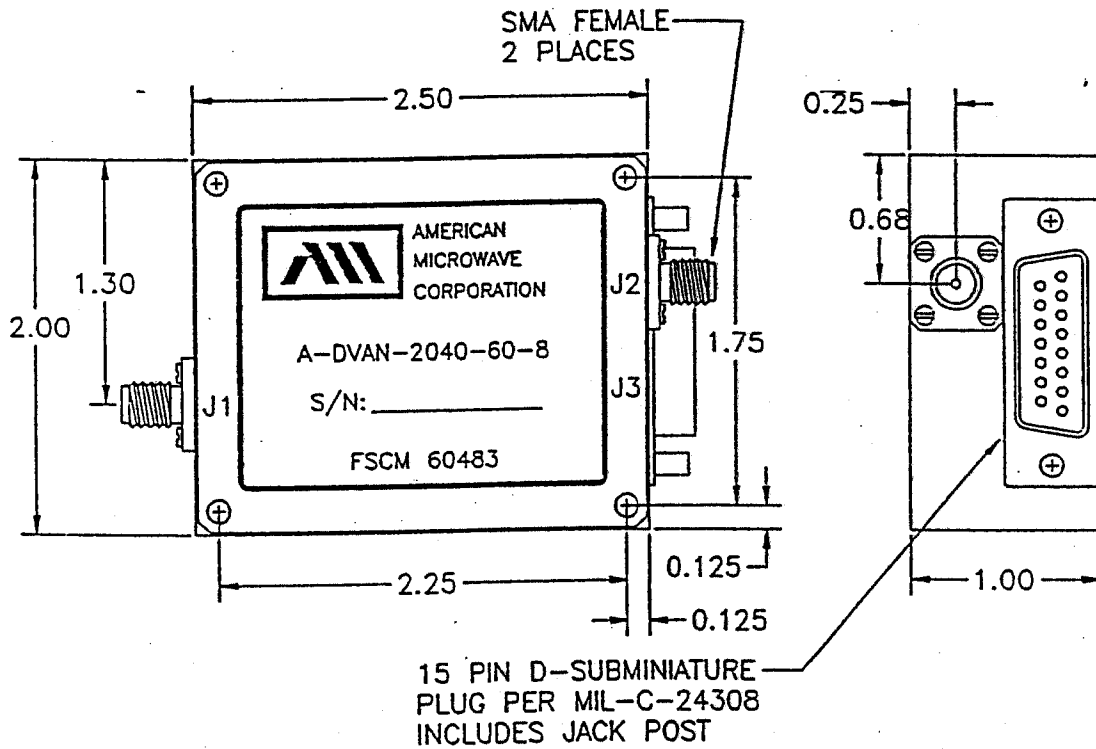
FREQUENCY	MODEL NUMBER	CONTROL
2.0 TO 4.0 GHz	A-VVAN-2040-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON per MIL-C-24308)
4.0 TO 8.0 GHz	A-VVAN-4080-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON per MIL-C-24308)
5.0 TO 10.0 GHz	A-VVAN-5010-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON per MIL-C-24308)
6.0 TO 12.0 GHz	A-VVAN-6012-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON per MIL-C-24308)
8.0 TO 18.0 GHz	A-VVAN-8018-60-MP	Analog, 10dB/Volt (Standard) with Multipin Connector (ITT CANNON per MIL-C-24308)

A-VVAN : VOLTAGE VARIABLE ATTENUATOR

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A-DVAN & A-VVAN SERIES  
60dB ABSORPTIVE ATTENUATORS



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



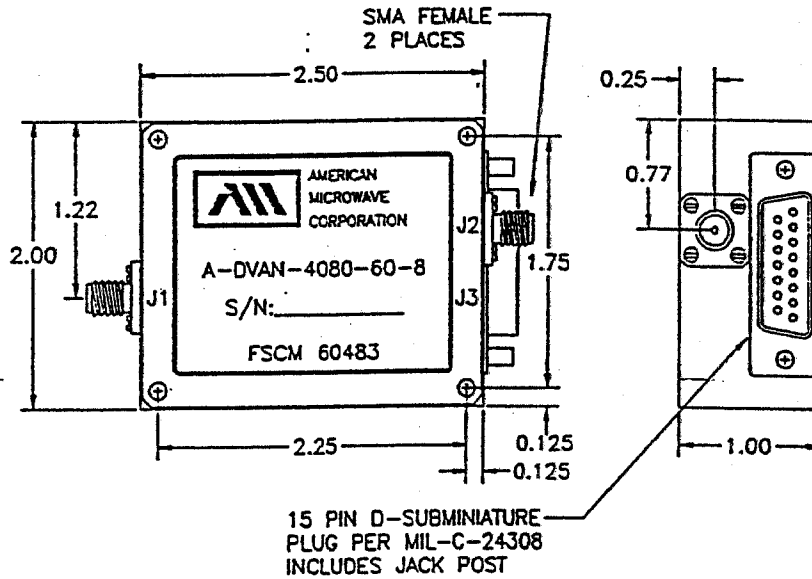
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**A-DVAN-2040/2550-60-8**

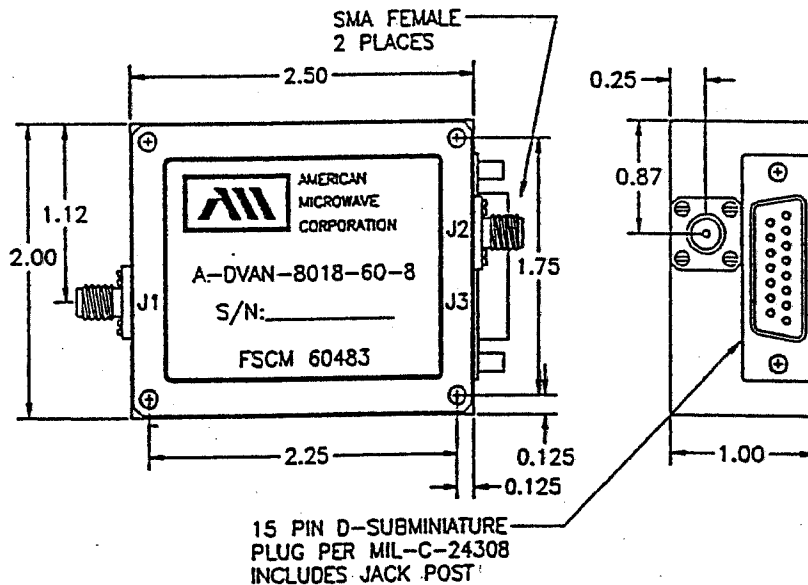
TYPICAL DATA  
 A-DVAN & A-VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



**A-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)



**A-DVAN-8018-60-8**  
 DIGITALLY VARIABLE ATTENUATOR  
 (8.0 TO 18.0 GHz)



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

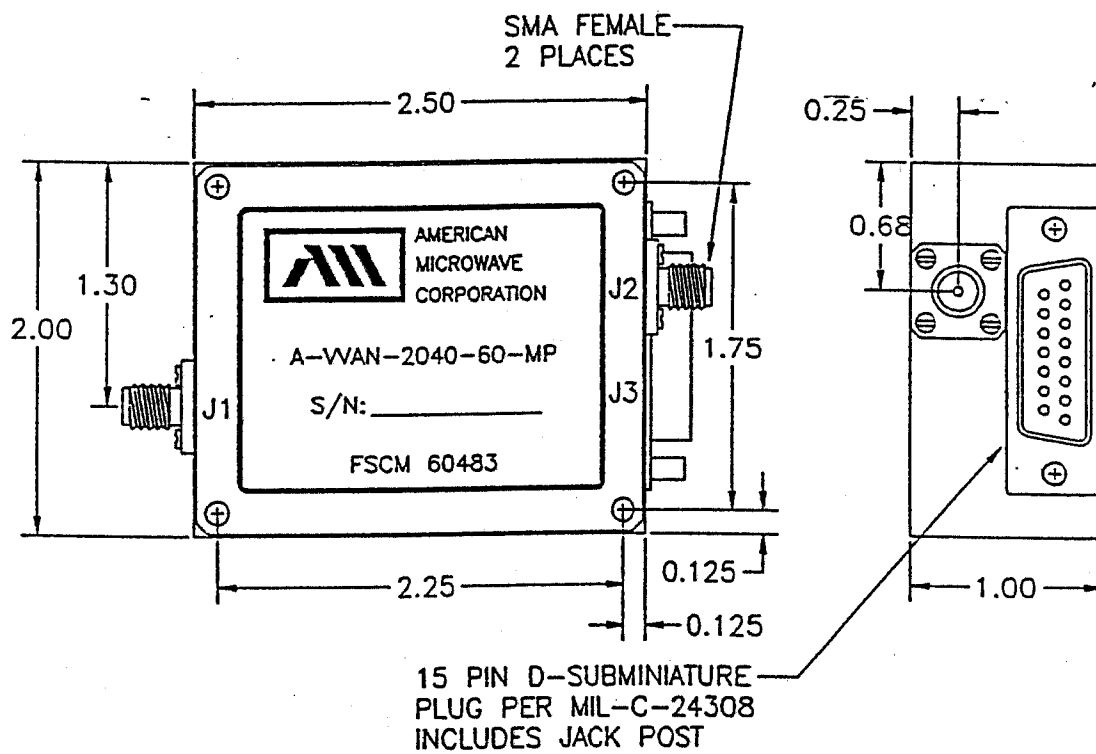
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TYPICAL DATA  
A-DVAN & A-VVAN SERIES  
60dB ABSORPTIVE ATTENUATORS



**A-VVAN-2040/2550-60-MP**  
VOLTAGE VARIABLE ATTENUATOR  
(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

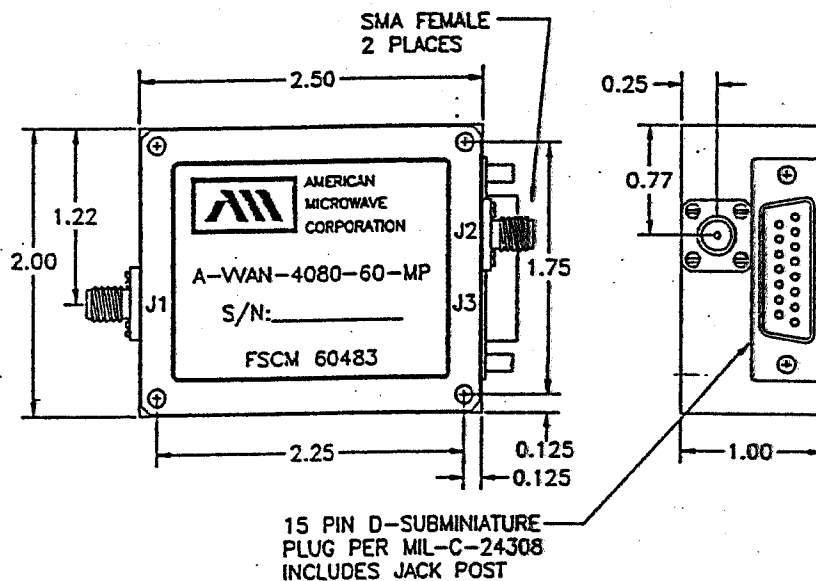
**A-VVAN-2040/2550-60-MP**

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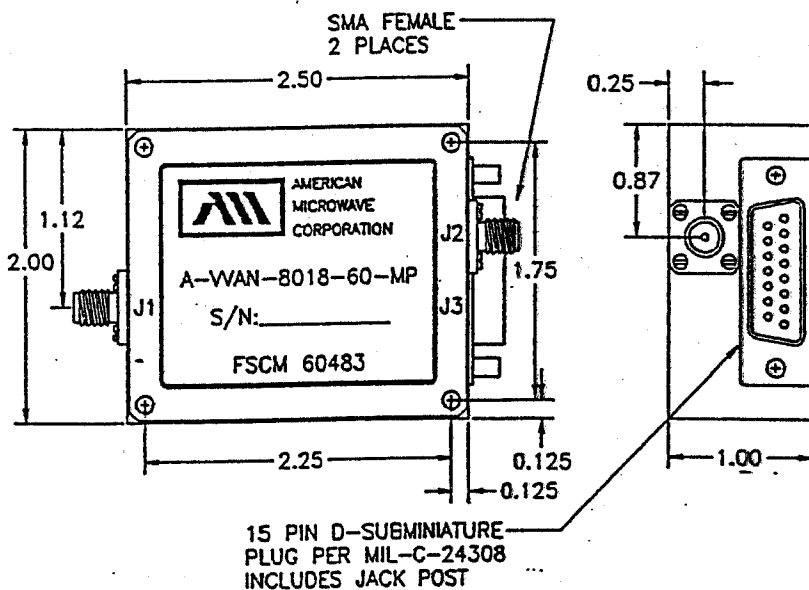
TYPICAL DATA  
 A-DVAN & A-VVAN SERIES  
 60dB ABSORPTIVE ATTENUATORS



**A-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)



**A-VVAN-8018-60-MP**  
 VOLTAGE VARIABLE ATTENUATOR  
 (8.0 TO 18.0 GHz)



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