AVANTEK
A Subsidiary of Hewlett-Packard

AMT Series:
Narrowband Low Noise and Power Millimeter Amplifier

Features

- 35, 44 and 60 GHz Frequency Bands
- Low Noise Figure
- Power Levels to +27 dBm
- Compact/Rugged Thin-Film Construction
- Temperature Compensation
- Optional Waveguide Input
- Optional ENR Bit Capability

AMT Series Amplifiers

Description

Avantek's family of small signal gain, low noise and power amplifiers offers coverage of the most needed bands in the electronics defense industry. Typical applications include airborne, shipboard, and ground electronic defense systems, IFF, radar and communications receivers, EHF satellite communications, TDRS uplink, and S-band telemetry.

Avantek's common small packaging offers extremely compact and lightweight amplifiers ideal for incorporation into the latest generation of ECM and radar systems as receiving preamplifiers, drivers, and phase/time delay loops.

Design Features

All the amplifiers in this series incorporate an integral monolithic IC voltage regulator to isolate the gain stages from variations in the DC input voltage. This voltage regulator also offers high rejection of noise and hum appearing on the power supply line and includes circuitry to protect both the regulator and the GaAs FET circuits. Over-voltage and reverse-voltage protection are also provided.

All of the amplifiers in the –25° to +71°C series are temperature compensated to minimize changes in the small signal gain over the wide military temperature ranges. Avantek's rugged and lightweight construction is particularly well-suited to military applications in environments such as MIL-E-5400 and MIL-E-16400.

AMT—High Performance and Temperature Compensated Connectorized Amplifier Series

AMT Series

Guaranteed Specifications @ 25°C Case Temperature

Model	Frequency Response (GHz) Minimum	Gain (dB) Minimum	Gain (dB) Maximum	Noise Figure (dB) Maximum	Power Output for 1 dB Gain Compression (dBm) Minimum	Gain Flatness (± dB) Maximum	Typical Third Order Intercept Point (dBm)	VSWR (50 ohms) Maximum In	VSWR (50 ohms) Maximum Out	Input Power Voltage (VDC)	Input Power Current (mA) Maximum	Case Type[1]
AMT-36032	34.5-35.5	12	16	4.5	+6	.75	+13	2.0	2.0	+12	110	IK2
AMT-36033	34.5-35.5	15	20	4.5	+10	.75	+17	2.0	2.0	+12	150	IK4
AMT-36034	34.5-35.5	23	29	4.5	+10	.75	+17	2.0	2.0	+12	200	IK4
AMT-36035	34.5-35.5	31	37	4.2	+10	1.5	+17	2.0	2.0	+12	250	IK4
AMT-36036	34.5-35.5	36	42	4.2	+10	1.5	+17	2.0	2.0	+12	300	IK6

AMT Series —Temperature Compensated

Guaranteed Specifications @ -25° to +71°C Case Temperature

AMT-36044	34.5-35.5	18	25	5.5	+6	1.0	+13	2.0	2.0	+12	275	IK4
AMT-36046	34.5-35.5	30	38	5.5	+10	1.5	+17	2.0	2.0	+12	350	IK6
AMT-36047	34.5-35.5	35	43	5.5	+10	1.5	+17	2.0	2.0	+12	400	IK8

Notes: Maximum safe input power: +10 dBm
1. Waveguide input only with external isolator.

AMT Series—Power Amplifiers

Preliminary Specifications @ 25°C Case Temperature

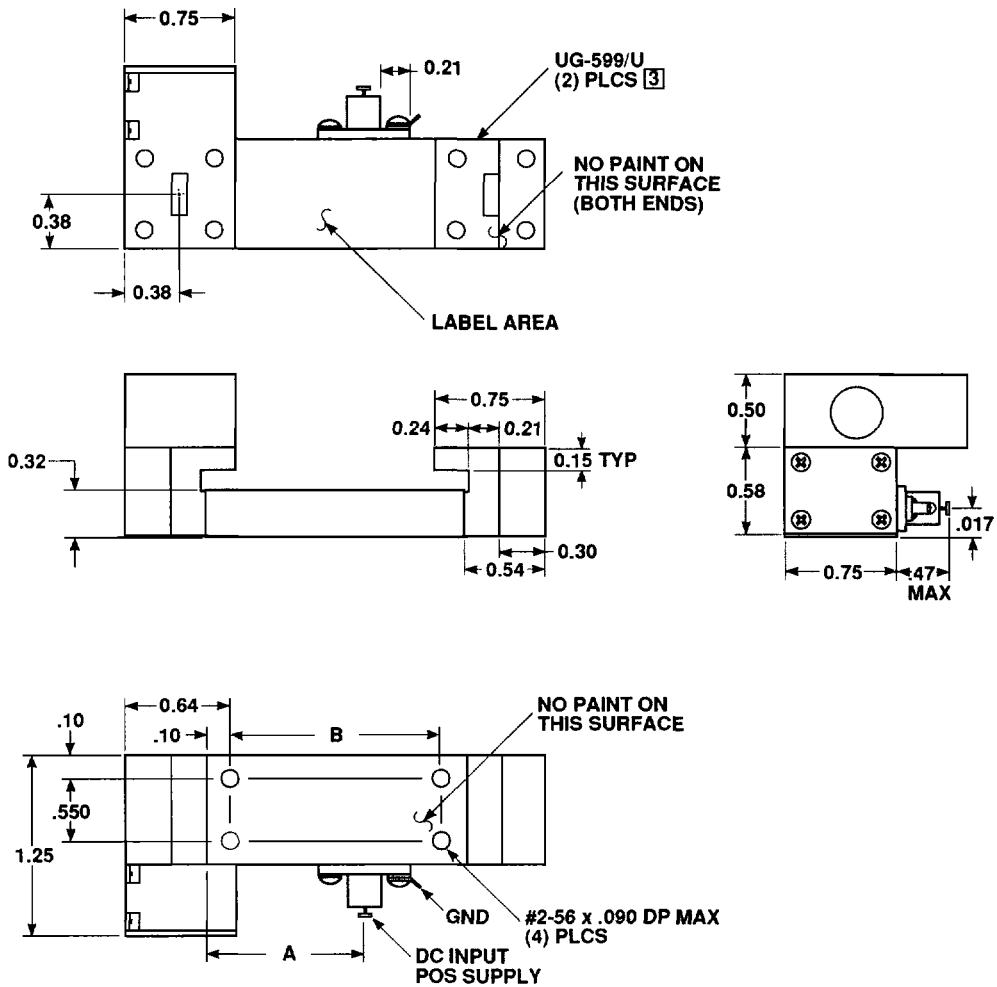
Model	Frequency Response (GHz) Minimum	Gain (dB) Minimum	Saturated Output Power (dBm) Minimum	VSWR Maximum In	VSWR Maximum Out	Input Power Voltage (+VDC)	Input Power Voltage (–VDC)	Input Power Current (mA) Maximum	Case Type
AMT-36054	34.5-35.5	10	27	2.0	2.0	+12	–8	2500	IK4W[1]
AMT-36057	34.5-35.5	18	27	2.0	2.0	+12	–8	2750	IK6W[1]
AMT-36058	34.5-35.5	23	27	2.0	2.0	+12	–8	3000	IK8W[1]
AMT-36056	34.5-35.5	33	24	2.0	2.0	+12	–8	1400	IK4N[1]
AMT-36156	35-36	25	23	2.2	2.2	+12	–8	1400	IK4N[1]

Notes: Maximum safe input power: +10 dBm
1. Contact Applications Engineering for case drawing.

The following RF connector options are available for the amplifiers on this page. Please specify option suffix at the time of order.

		INPUT	
		WG WR28	3 mm COAX
OUTPUT	WG WR28	-11	-31
	3 mm COAX	-13	-33

Case Drawing
IK Series
WR-28, Input Isolator

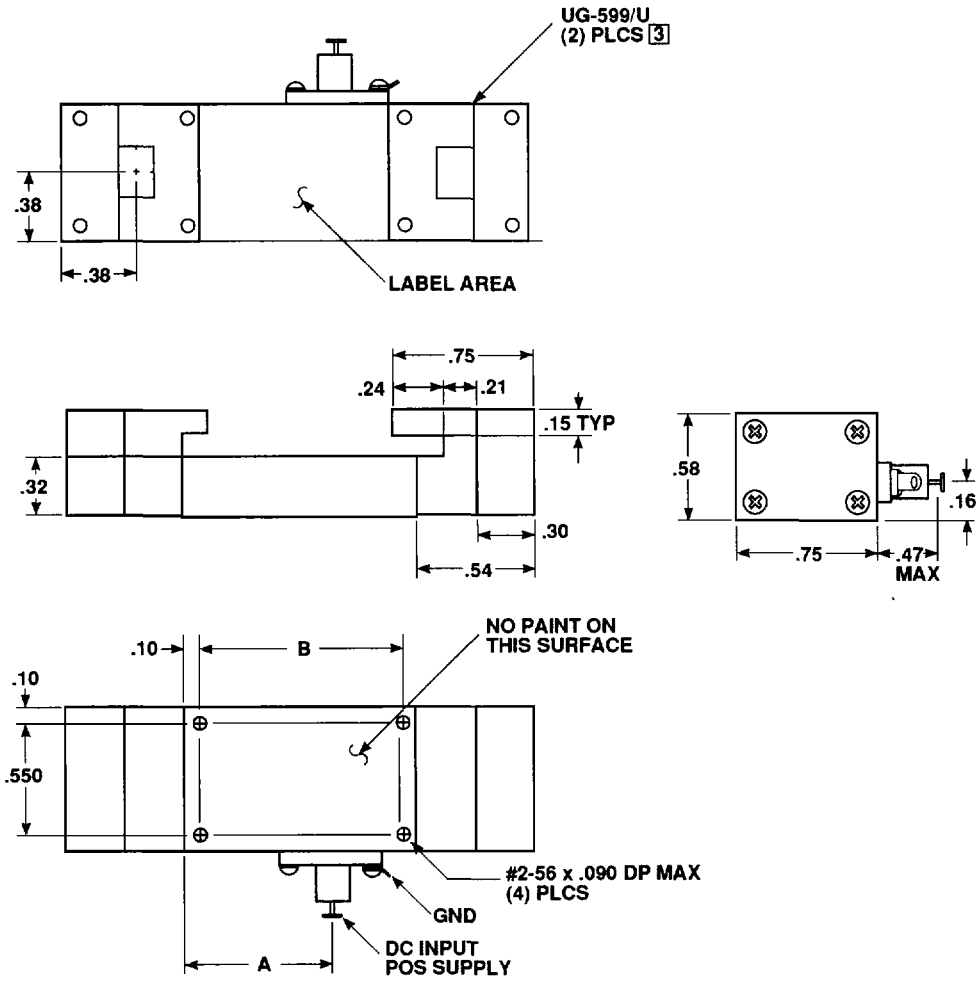


CASE	DIMENSION	
	A	B
IK2	0.36	0.708
IK4	0.95	1.303
IK6	1.15	1.697
IK8	1.35	2.095

NOTES (UNLESS OTHERWISE SPECIFIED):

1. DIMENSIONS ARE SPECIFIED IN INCHES
2. TOLERANCES: .XX ± .01
   .XXX ± .005
   ALL TOLERANCES BEFORE PAINT AND/OR LABELING
3 RF INPUT/OUTPUT CONNECTOR:
   WR-28,UG 599/U

Case Drawing
IK Series
WR-28

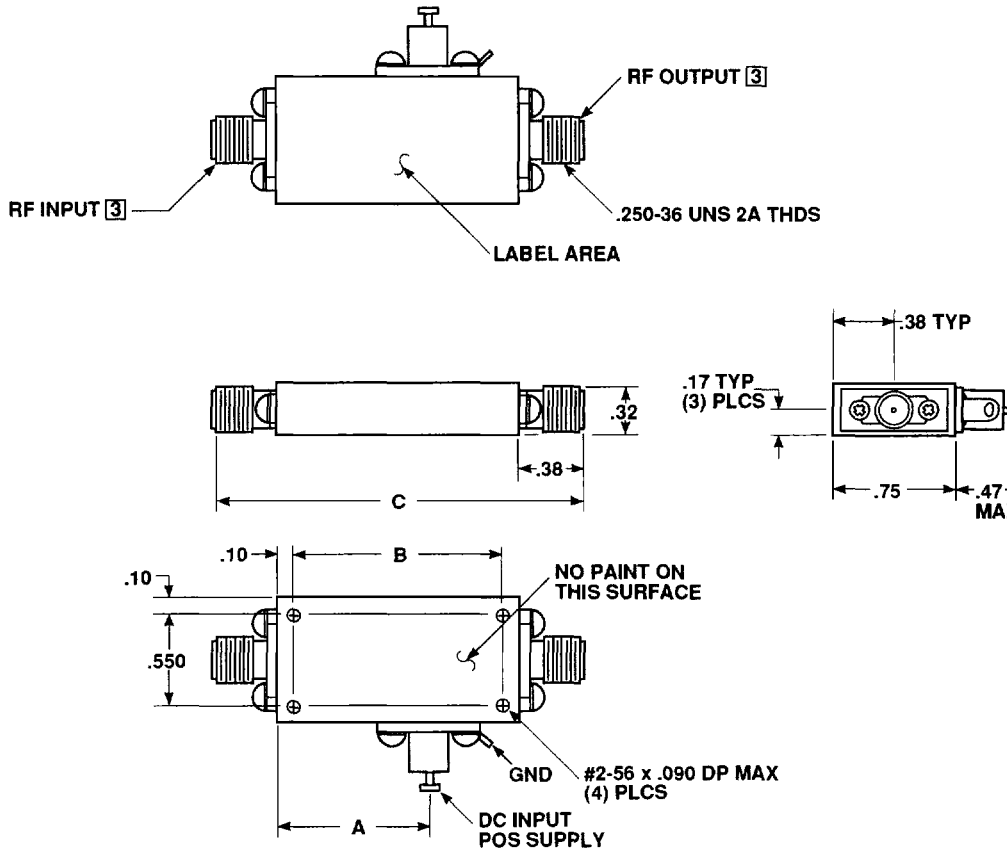


CASE	DIMENSION	
	A	B
IK2	0.36	0.708
IK4	0.95	1.303
IK6	1.15	1.697
IK8	1.35	2.095

NOTES (UNLESS OTHERWISE SPECIFIED):

1. DIMENSIONS ARE SPECIFIED IN INCHES
2. TOLERANCES: .XX ± .01
   .XXX ± .005
   ALL TOLERANCES BEFORE PAINT AND/OR LABELING
3. RF INPUT/OUTPUT CONNECTOR:
   WR-28,UG 599/U

Case Drawing
IK Series
Coax



CASE	DIMENSION		
	A	B	C
IK2	0.36	0.708	1.66
IK4	0.95	1.303	2.25
IK6	1.15	1.697	2.65
IK8	1.35	2.095	3.05

NOTES (UNLESS OTHERWISE SPECIFIED):

1. DIMENSIONS ARE SPECIFIED IN INCHES
2. TOLERANCES: .XX ± .01
   .XXX ± .005
   ALL TOLERANCES BEFORE PAINT AND/OR LABELING
[3] RF INPUT/OUTPUT CONNECTOR:
   3 MM SMA COMPATIBLE

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AMT Series

Guaranteed Specifications @ 25°C Case Temperature

Model	Frequency Response (GHz) Minimum	Gain (dB) Minimum	Gain (dB) Maximum	Noise Figure (dB) Maximum	Power Output for 1 dB Gain Compression (dBm) Minimum	Gain Flatness (±dB) Maximum	Typical Third Order Intercept Point (dBm)	VSWR (50 ohms) Maximum In	VSWR (50 ohms) Maximum Out	Input Power Voltage (VDC)	Input Power Current (mA) Maximum	Case Type
AMT-46035	43.5-45.5	22	30	8.0	+6	1.5	+13	2.5	2.5	+12	300	IK4
AMT-46037	43.5-45.5	30	38	8.0	+6	1.5	+13	2.5	2.5	+12	400	IK6
AMT-46055	43.5-45.5	22	30	8.0	+15	1.5	+22	2.5	2.5	+12	350	IK4
AMT-46057	43.5-45.5	30	38	8.0	+15	1.5	+22	2.5	2.5	+12	450	IK6
AMT-46075	43.5-45.5	22	30	5.5	+6	1.5	+13	1.5	2.5	+12	300	IK4[1]
AMT-46077	43.5-45.5	30	38	5.5	+10	1.5	+17	1.5	2.5	+12	400	IK6[1]

Guaranteed Specifications @ -25° to +71°C Case Temperature

Model	Frequency Response (GHz) Minimum	Gain (dB) Minimum	Gain (dB) Maximum	Noise Figure (dB) Maximum	Power Output for 1 dB Gain Compression (dBm) Minimum	Gain Flatness (±dB) Maximum	Typical Third Order Intercept Point (dBm)	VSWR (50 ohms) Maximum In	VSWR (50 ohms) Maximum Out	Input Power Voltage (VDC)	Input Power Current (mA) Maximum	Case Type
AMT-46045	43.5-45.5	22	30	6.0	+6	2.0	+13	2.5	2.5	+12	350	IK6[1]
AMT-46047	43.5-45.5	30	38	6.0	+6	2.0	+13	2.5	2.5	+12	450	IK8[1]

Notes: Maximum safe input power: +10 dBm
1. Waveguide input only with external isolator.

AMT Series—Power Amplifiers

Preliminary Specifications @ 25°C Case Temperature

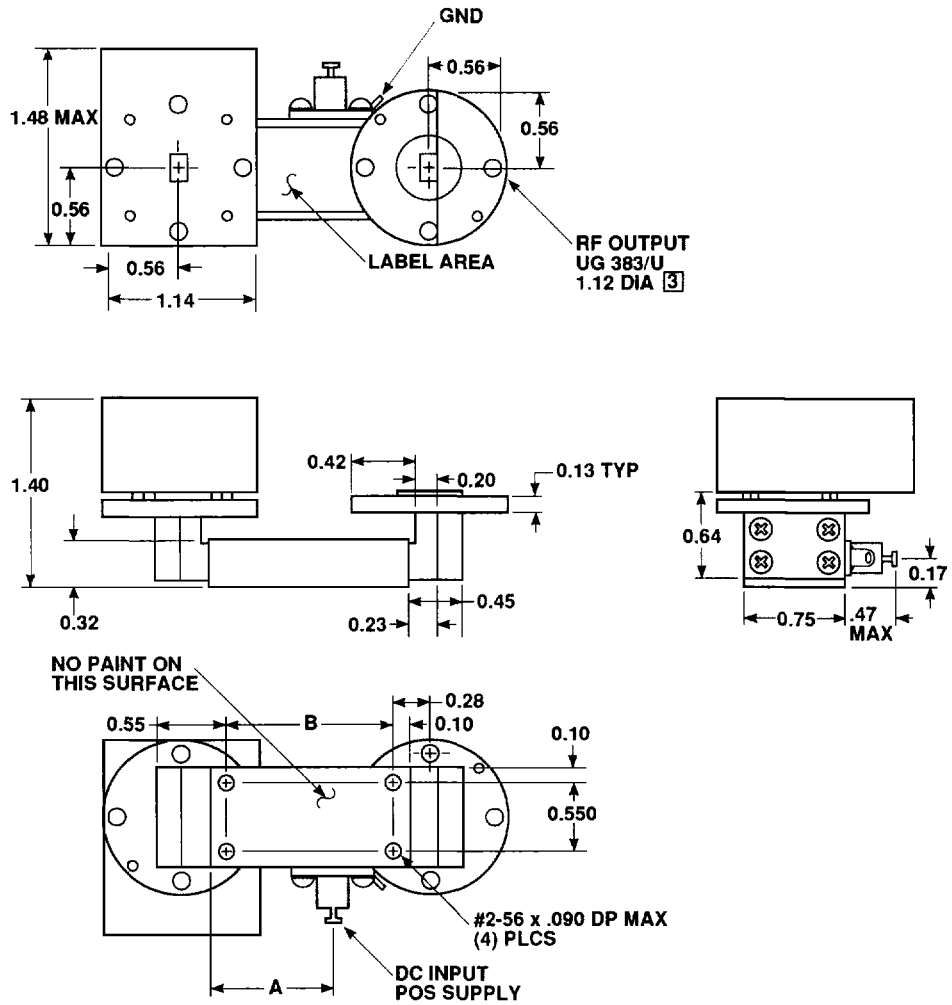
Model	Frequency Response (GHz) Minimum	Gain (dB) Minimum	Saturated Output Power (dBm) Minimum	VSWR Maximum In	VSWR Maximum Out	Input Power Voltage (VDC)	Input Power Current (mA) Maximum	Case Type
AMT-46158	43-45	26	+23	2.5	2.5	+12	650	IK6

Note: Maximum safe input power: +10 dBm

The following RF connector options are available for the amplifiers on this page. Please specify option suffix at the time of order.

		INPUT	
		WG WR22	3 mm COAX
OUTPUT	WG WR22	-11	

Case Drawing
IK Series
WR-22, Input Isolator



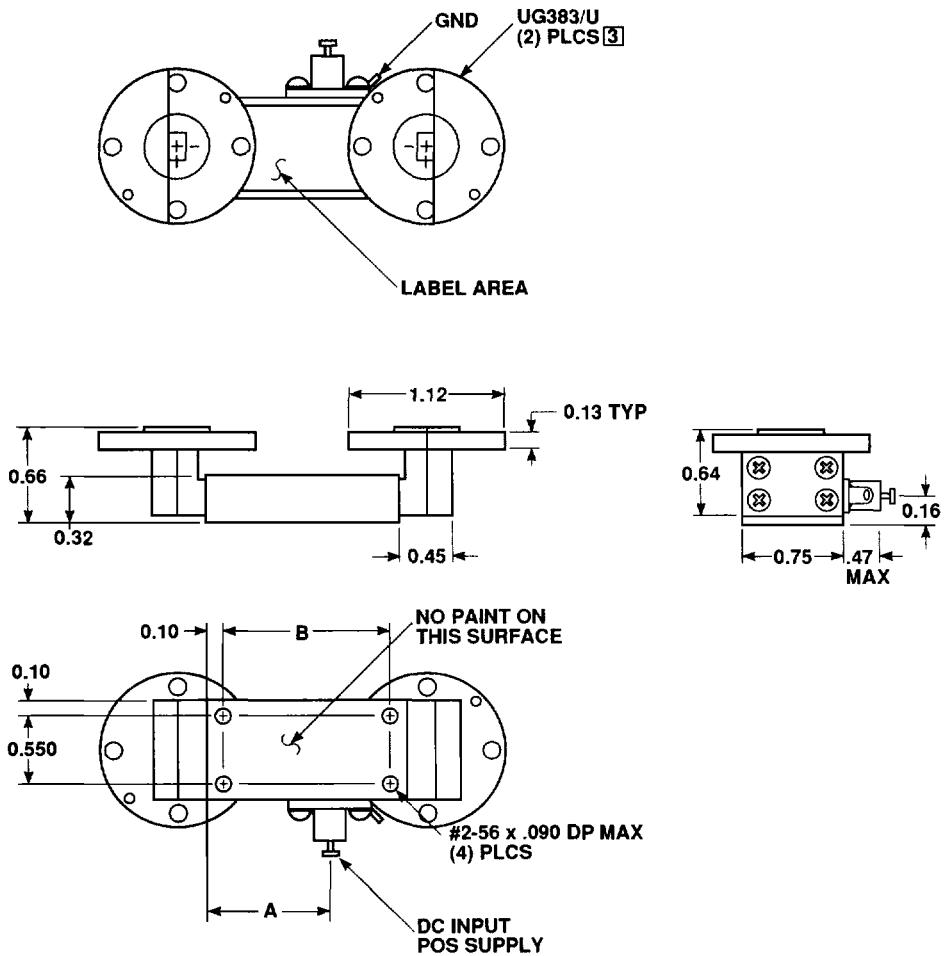
CASE	DIMENSION	
	A	B
IK4	0.95	1.303
IK6	1.15	1.697
IK8	1.35	2.095

NOTES (UNLESS OTHERWISE SPECIFIED):

1. DIMENSIONS ARE SPECIFIED IN INCHES
2. TOLERANCES: .XX ± .01
   .XXX ± .005
   ALL TOLERANCES BEFORE PAINT AND/OR LABELING

[3] RF INPUT/OUTPUT CONNECTOR:
WR-22,UG 383/U

Case Drawing
IK Series
WR-22



CASE	DIMENSION	
	A	B
IK4	0.95	1.303
IK6	1.15	1.697
IK8	1.35	2.095

NOTES (UNLESS OTHERWISE SPECIFIED):

1. DIMENSIONS ARE SPECIFIED IN INCHES
2. TOLERANCES: .XX ± .01
   .XXX ± .005
   ALL TOLERANCES BEFORE PAINT AND/OR LABELING
3. RF INPUT/OUTPUT CONNECTOR:
   WR-22, UG 383/U

AMT —High Performance Connectorized Amplifier Series

AMT Series

Guaranteed Specifications @ 25°C Case Temperature

Model	Frequency Response (GHz) Minimum	Gain (dB) Minimum	Gain (dB) Maximum	Noise Figure (dB) Maximum	Saturated Power Output (dBm) Minimum	Gain Flatness (±dB) Maximum	Typical Third Order Intercept Point (dBm)	VSWR (50 ohms) Maximum In	VSWR (50 ohms) Maximum Out	Input Power Voltage (VDC)	Input Power Current (mA) Maximum	Case Type
AMT-60032	59-60	10	12	9.0	+3	1.0	+10	3.0	3.0	+12	120	IV3[1]
AMT-60033	59-60	15	18	9.0	+3	1.5	+10	3.0	3.0	+12	185	IV3[1]
AMT-60034	59-60	20	24	9.0	+3	1.5	+10	3.0	3.0	+12	245	IV4[1]
AMT-60035	59-60	25	29	10.0	+5	2.0	+12	3.0	3.0	+12	305	IV5[1]
AMT-60036	59-60	30	35	10.0	+5	2.0	+12	3.0	3.0	+12	365	IV6[1]

Notes: Maximum safe input power: +10 dBm

1. Contact Applications Engineering for case drawing. The amplifiers on this page are available only with WR 19 I/O.