

MONOLITHIC AMPLIFIERS 50 Ω

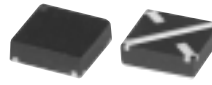
BROADBAND DC to 6 GHz



MAR-SM



MAV-SM



MAV-A

up to +18.5 dBm output

MODEL NO.	FREQ. (MHz)	GAIN (dB) Typical at MHz				MAXIMUM POWER (dBm)		DYNAMIC RANGE		VSWR (:1) Typ.		ABSOLUTE MAXIMUM RATING ⁶ (25°C)		DC OPERATING POWER ⁷ at Pin 3		THERMAL RESISTANCE ⁵ θ _{jc} °C/W	CASE STYLE Note B1	CONNECTION	PRICE \$ ea. Qty. (30)
		100	1000	2000	Note 1 Min.	Output (1 dB Comp.) Typ.	Input (no damage)	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	I (mA)	P (mW)	Current (mA)	Device Volt. Typ.				
MAR-1SM	DC-1000	18.5	15.5	—	13.0	+1.5	+13	5.5	+14.0	1.3	1.2	40	200	17	5.00	115	WW107	cb	1.04
MAR-2SM	DC-2000	12.5	12.0	11.0	8.5	+4.5	+13	6.5	+17.0	1.5	1.4	60	325	25	5.00	105	WW107	cb	1.17
MAR-3SM	DC-2000	12.5	12.0	10.5	8.0	+10.0	+13	6.0	+23.0	1.5	1.7	70	400	35	5.00	115	WW107	cb	1.24
MAR-4SM	DC-1000	8.3	8.0	—	7.0	+12.5	+13	7.0	+25.5	1.5	1.9	85	500	50	5.25	100	WW107	cb	1.34
MAR-6SM	DC-2000	20.0	16.0	11.0	9.0	+2.0	+13	3.0	+14.5	1.7	1.7	50	200	16	3.50	120	WW107	cb	1.21
MAR-7SM	DC-2000	13.5	12.5	11.0	8.5	+5.5	+13	5.0	+19.0	1.7	1.7	60	275	22	4.00	120	WW107	cb	1.36
NEW MAR-8ASM	DC-1000	31.5	25	—	20.0	+12.5	+13	3.1	+25.0	1.4	1.8	65	250	36	3.70	140	WW107	cb	1.12
MAR-8SM	DC-1000	32.5	22.5	—	19.0	+12.5	+13	3.3	+27.0	#	#	65	500	36	7.80	140	WW107	cb	1.32
NEW MAV-11BSM	50-1000	12.7	11.3	9.5	9.5	+18.0	+13	4.4	+34.0	1.2	1.2	80	460	60	5.50	141	RRR137	cb	1.50
MAV-11SM	50-1000	12.7	10.5	—	9.0	+17.5	+13	3.6	+30.0	1.5	1.7	80	550	60	5.50	125	RRR137	cb	1.62
NEW MAV-11A	50-2000	12.5	11.5	10.2	9.0	+18.5	+13	4.8	+35.0	1.4	1.1	80	550	60	5.50	130	DH820	cb	1.29

see suggested PCB layout PL-075 for MAR models

NOTES:

- ◆ Aqueous washable
- ☆ Increases below 1500 MHz.
- # MAR-8SM & RAM-8 models input and output impedances are not 50 ohms, see S-parameter data. Conditionally stable, source and load VSWR<3:1 required.
- Dash-6 models conditionally stable, source and load VSWR<5:1 required.
- ⊗ Low frequency cutoff determined by external coupling capacitors, except VNA-25
- A. Environmental specifications and re-flow soldering information available in General Information Section.
- B1. Units are non-hermetic unless otherwise noted. Details on case dimensions & finishes in "Case Styles & Outline Drawings". Case styles VV105 or BBB123 available, consult factory.
- C. Prices and Specifications subject to change without notice.
- 1. Minimum gain at highest frequency. Full temperature range, except room temperature for Dash-4 models.
- 2. Model number designated by alphanumeric code marking.
- 3. Frequency at which output power, NF and IP3 are specified: 500 MHz for MAR-1SM, MAR-6SM, RAM-1, RAM-6, MAV-11SM, VAM-6, 1000 MHz for all other models.
- 4. Dash-6 models potentially unstable with very high VSWR terminations.
- 5. Thermal resistance θ_{jc} is from hottest junction in device to mounting surface of leads.
- 6. Permanent damage may occur if any of these limits are exceeded. These ratings are not intended for continuous normal operation.
- 7. Supply voltage must be connected to pin 3 through a bias resistor in order to prevent damage. See "Biasing MMIC Amplifiers" in minicircuits.com/application.html. Reliability predictions are applicable at specified current & normal operating conditions.

model identification

Model marking (see note below)

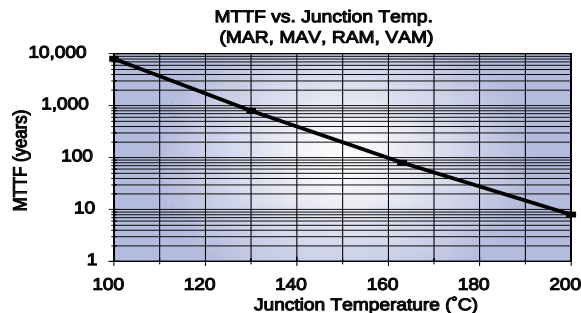
MAR-1SM	01
MAR-2SM	02
MAR-3SM	03
MAR-4SM	04
MAR-6SM	06
MAR-7SM	07
MAR-8SM	08
MAR-8ASM	8A
RAM-1	1 or 01
RAM-2	2 or 02
RAM-3	3 or 03
RAM-4	4 or 04
RAM-6	6 or 06
RAM-7	7 or 07
RAM-8	8 or 08

MAV-11BSM 11
MAV-11SM A
MAV-11A 11

VAM-3 03
VAM-6 06
VAM-7 07

Notes:

- Prefix letter (optional) designates assembly location.



Mini-Circuits®

Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified

INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

040817

Surface Mount



up to +12.5 dBm output

MODEL NO.◆	FREQ.● (MHz)	GAIN (dB) Typical at MHz					MAXIMUM POWER (dBm)		DYNAMIC RANGE	VSWR (:1) Typ.		ABSOLUTE MAXIMUM RATING ⁶ (25°C)		DC OPERATING POWER ⁷ at Pin 3		THERMAL RESIS- TANCE ⁵ θjc °C/W	CASE STYLE	C O N N E C T I O N	PRICE \$ ea. Qty. (1-9)					
		100	1000	2000	3000	Note 1 Min.	Output (1 dB Comp.) Typ.	Input (no damage)		NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	I (mA)	P (mW)					Current (mA)	Device Volt Typ.			
RAM-1	DC-1000	19.0	15.5	—	—	13.0	+1.5	+13	5.5 +14.0	1.3	1.3	40	200	17	5.00	150	AF190	cb	4.95					
RAM-2	DC-2000	12.5	11.8	11.0	—	8.5	+4.5	+13	6.5 +17.0	1.2	1.4	60	325	25	5.00	145	AF190	cb	4.95					
RAM-3	DC-2000	12.5	12.0	10.5	—	8.0	+10.0	+13	6.0 +23.0	1.6	1.7	80	425	35	5.00	150	AF190	cb	4.95					
RAM-4	DC-1000	8.5	8.0	—	—	7.0	+12.5	+13	6.5 +25.5	1.4	1.9	100	540	50	5.25	140	AF190	cb	4.95					
RAM-6	DC-2000	20.0	16.0	11.0	—	9.0	+2.0	+13	2.8 +14.5	1.4	1.3	50	200	16	3.50	155	AF190	cb	4.95					
RAM-7	DC-2000	13.5	12.5	11.0	—	8.5	+5.5	+13	4.5 +19.0	2.0	1.8	60	275	22	4.00	155	AF190	cb	4.95					
RAM-8	DC-1000	32.5	23.0	—	—	19.0	+12.5	+13	3.0 +27.0	#	#	65	420	36	7.80	175	AF190	cb	4.95					
		Typical at GHz																						
		0.1	1	2	3	4	6	Note 1 Min.																Qty. (30)
VAM-3	DC-2000	11.5	11.0	9.5	—	—	—	7.5	+9.0	+13	6.0 +22.0	1.5	1.7	60	240	35	4.70	500	MMM168	cb	1.19			
VAM-6	DC-2000	19.5	15.0	10.0	—	—	—	8.0	+2.0	+13	3.0 +14.0	1.6	1.5	40	125	16	3.30	505	MMM168	cb	1.16			
VAM-7	DC-2000	13.0	12.0	9.8	—	—	—	7.8	+5.5	+13	5.0 +18.0	1.5	1.5	50	175	22	3.80	505	MMM168	cb	1.31			

see suggested PCB layouts: PL-075 for RAM models

features

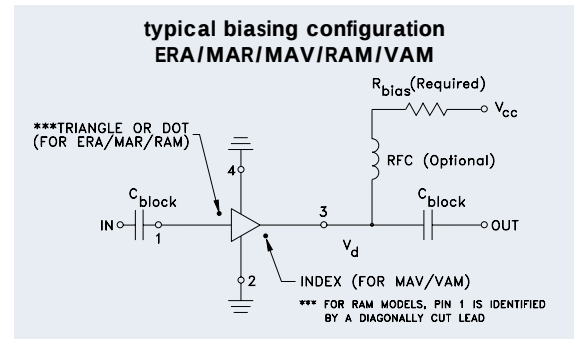
- cascadable
- excellent repeatability
- wide bandwidth, up to 6000 MHz
- unconditionally stable, most models
- aqueous washable
- high output power, up to +12.5 dBm typ
- low cost

pin connections

PORT	cb
RF IN	1
RF OUT	3
DC	3
GND EXT	2,4

demo boards

TB-207	VAM models
MAV-TB	MAV models
MAR-TB	MAR models
RAM-TB	RAM models



NSN GUIDE

MCL NO.	NSN
MAR-1SM	5962-01-414-8635
MAR-3SM	5962-01-423-1569
MAR-6SM	5962-01-460-6063
RAM-6	5996-01-450-5504

DESIGNERS KITS AVAILABLE