

Surface Mount Monolithic Amplifier

RAM-1+ RAM-1

50Ω DC to 1000 MHz



Features

- wideband, DC to 1000 MHz
- cascadable ceramic package
- low noise figure, 5.5 dB typ.
- excellent repeatability
- protected under US Patent 6,943,629

CASE STYLE: AF190
PRICE: \$4.95 ea. QTY. (1-9)

+ RoHS compliant in accordance
with EU Directive (2002/95/EC)

The +Suffix identifies RoHS Compliance. See our web site
for RoHS Compliance methodologies and qualifications.

Applications

- cellular
- UHF/VHF
- communication system
- transmission receivers

Electrical Specifications

FREQ. ¹ (MHz)		GAIN (dB) Typical at MHz			MAXIMUM POWER (dBm)		DYNAMIC RANGE ³		VSWR (:1) Typ.		ABSOLUTE MAXIMUM RATING ⁵ (25°C)		DC OPERATING POWER ⁶ at Pin 3		THERMAL RESISTANCE ⁴
f _L	f _U	100	1000	Min. ²	Output (1 dB Compr.) Typ.	Input (no damage)	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	I (mA)	P (mW)	Current (mA)	Device Volt Typ.	θ _{jc} Typ. °C/W
DC	1000	19.0	15.5	13.0	+1.5	+13	5.5	+14.0	1.3	1.3	40	200	17	5.0	150

1. Low frequency cutoff determined by external coupling capacitors.
2. Minimum gain at highest frequency. Full temperature range.
3. Frequency at which output power, NF and IP3 are specified: 500 MHz.
4. Thermal resistance θ_{jc} is from hottest junction in device to mounting surface of leads.
5. Permanent damage may occur if any of these limits are exceeded.
These ratings are not intended for continuous normal operation.
6. 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.

Maximum Ratings

Operating Temperature -54°C to 100°C
Storage Temperature -65°C to 150°C

Pin Connections

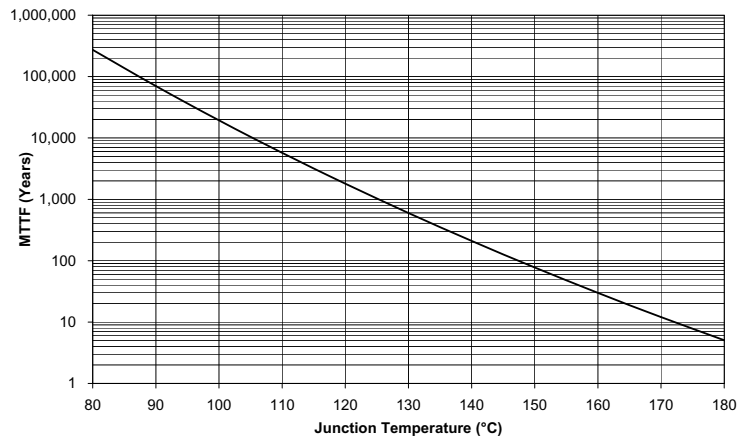
RF IN	1
RF OUT	3
DC	3
GROUND	2,4

Model Identification

RAM-1(+) 1 or 01

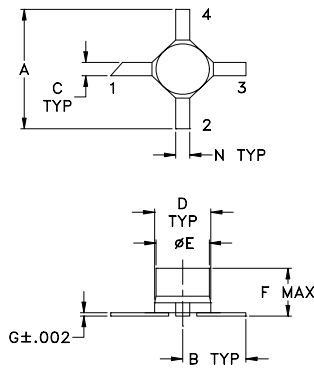
Prefix letter (optional) designates assembly location

MTTF vs. Junction Temp.

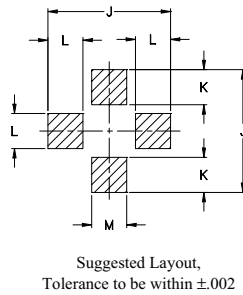


RAM-1+ RAM-1

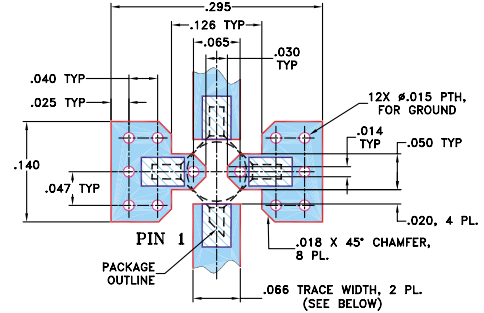
Outline Drawing



PCB Land Pattern



Demo Board MCL P/N: TB-414-1+ Suggested PCB Layout (PL-254)



NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $.030 \pm .002$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 - IF PCB DESIGN RULES ALLOW, PLACE GROUND VIAS UNDER THE LAND PATTERN FOR BETTER RF PERFORMANCE. OTHERWISE PLACE GROUND VIAS AS CLOSE TO LAND PATTERN AS POSSIBLE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.180	.090	.020	.100	.083	.072	.005
4.57	2.29	0.51	2.54	2.11	1.83	0.13
H	J	K	L	M	N	wt
--	.210	.060	.060	.06	0.20	grams
--	5.33	1.52	1.52	1.52	5.08	0.04

Typical Biasing Configuration

