MICROWAVE PRECISION

Fixed Attenuator

KAT-9+

50Ω 1.1W 9dB DC to 43.5 GHz

THE BIG DEAL

- Super wide bandwidth, DC-43.5 GHz
- High Power Handling, 1.1W
- Small package, 2x2 MCLP™
- Excellent VSWR, 1.11:1 typ.

Generic photo used for illustration purposes only

CASE STYLE: MC1630-1

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- 5G
- Test and Measurement
- Radar
- Communication
- Defense

PRODUCT OVERVIEW

KAT-9+ is an absorptive fixed attenuator fabricated using highly reliable and repeatable GaAs MMIC IPD process. The model operates from DC to 43.5GHz. It achieves outstanding attenuation accuracy and flatness while maintains excellent VSWR throughout the entire band. The model can also handle input power up to 1.1W, which makes this model an ideal choice for a wide range of applications.

KEY FEATURES

Feature	Advantages
Wideband operation, From DC to 43.5 GHz	Supports a wide array of applications including 5G, wireless infrastructure, microwave communications, satellite, defense and aerospace, medical broadband and optic applications.
Small Size and simple to use (2 mm x 2 mm)	As a single chip solution, the KAT series occupies less board space than a lumped element approach, minimizes component count and ensures repeatable performance over wide frequency range.
Wide range of nominal attenuation values (0,1,2,3,4,5,6,7,8,9,10,12,15,20 & 30)	Small increment offering enables circuit designer to change attenuation values without motherboard redesign making the KAT series ideal for select at test application.
MCLP™ Package	Low Inductance, repeatable transitions, excellent thermal path make the KAT series an ideal solution as an alternative to “do it yourself” lumped element-based approach.

* IPD - Integraded Passive Device.

REV. B
ECO-014625
KAT-9+
MCL NY
220818

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ELECTRICAL SPECIFICATIONS[1] AT 25°C, 50Ω , UNLESS NOTED OTHERWISE

Parameter	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC	—	43.5	GHz
Attenuation	0.01 - 5	8.6	8.9	9.4	dB
	5 - 10	8.6	8.9	9.4	
	10 - 20	8.6	8.9	9.5	
	20 - 30	8.6	9.1	9.9	
	30 - 40	—	9.3	—	
	40 - 43.5	—	8.8	—	
VSWR	0.01 - 5	—	1.06	1.3	:1
	5 - 10	—	1.09	1.4	
	10 - 20	—	1.11	1.9	
	20 - 30	—	1.26	—	
	30 - 40	—	1.58	—	
	40 - 43.5	—	1.60	—	

1. Tested on Mini-Circuits test board TB-934-9C+. See Characterization/Application Circuit in Fig. 1

MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Case Temperature[3]	-40°C to 85°C
Storage Temperature	-65°C to 150°C
RF Input Power	1.1W[3]

2. Permanent damage may occur if any of these limits are exceeded.
3. Power rating derated to 0.8W at 85°C

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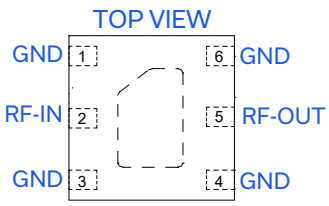
PAD DESCRIPTION



Function	Pad Number	Description
RF-IN	2	RF input pad
RF-OUT	5	RF output pad
GND	1,3,4,6 & Paddle	Ground

CHARACTERIZATION TEST CIRCUIT

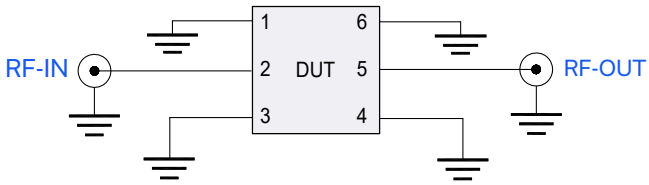
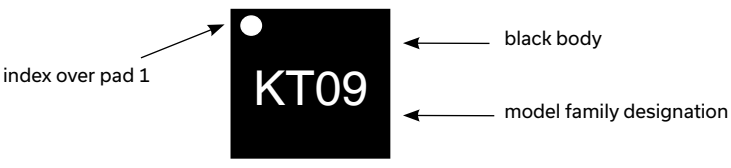


Fig 1. Block diagram of Test Circuit used for characterization, Test board TB-934-9C+
Conditions: Attenuation, VSWR: Pin=0 dBm

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

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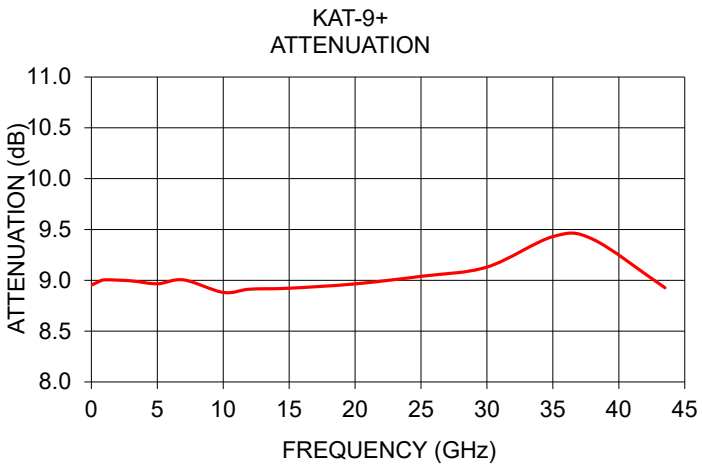
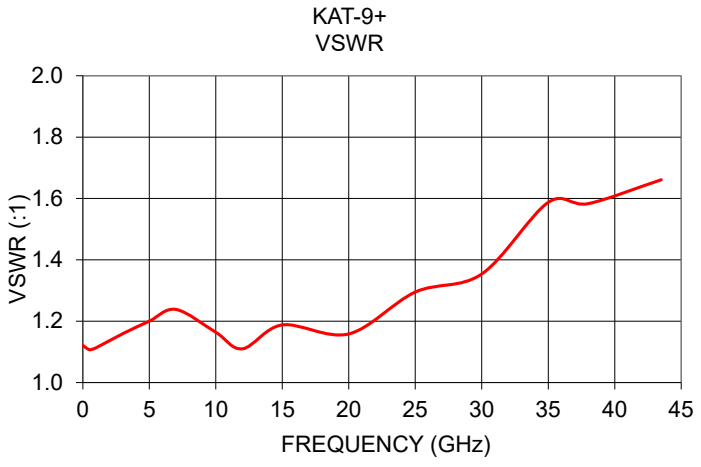
TYPICAL PERFORMANCE DATA AT 25°C

Frequency (GHz)	Attenuation (dB)	VSWR (:1)
0.01	8.95	1.12
0.5	8.98	1.11
1.0	9.00	1.11
3.0	8.99	1.16
5.0	8.97	1.20
7.0	9.00	1.24
10.0	8.88	1.16
12.0	8.91	1.11
15.0	8.92	1.19
20.0	8.96	1.16
25.0	9.04	1.30
30.0	9.13	1.35
35.0	9.43	1.59
38.0	9.41	1.58
43.5	8.93	1.66





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ADDITIONAL DETAILED TECHNICAL INFORMATION IS AVAILABLE ON OUR DASH BOARD. TO ACCESS CLICK HERE

Performance Data	Data Table Swept Graphs
Case Style	MC1630-1 Plastic package, Terminal finish: Matte Tin
Tape & Reel **Standard quantities available on reel**	F66 7" reels with 20, 50, 100, 200, 500, 1K, 2K devices.
Suggested Layout for PCB Design	PL-586
Evaluation Board	TB-934-9C+
Environmental Ratings	ENV08T1

ESD RATING

Human Body Model (HBM): Class 2 (Pass 2000V) per ANSI/ESD STM 5.1 - 2001

NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html