

Microwave Gain Equalizers

EQY-XX-24+ Series

50Ω DC to 20 GHz



CASE STYLE: MC1631-1

The Big Deal

- Excellent Return Loss, 20dB typ.
- Wide bandwidth, DC - 20 GHz
- Small Size, 2 mm x 2 mm

Product Overview

EQY-XX-24+ Series of absorptive Gain Equalizers are fabricated using highly repetitive GaAs IPD* MMIC process incorporating resistors, capacitors and inductors having negative insertion loss slope. EQYs are available with nominal attenuation slope of 0,2,3,5,6,8,10,12 dB. They are packaged in tiny 2 x 2 mm 8-Lead MCLP™ package.

Key Features

Feature	Advantages
Negative Insertion Loss Slope vs. Frequency	Useful for compensating negative gain slope of amplifiers, receivers, transmitters to achieve flat gain versus frequency.
Wide range of values 0,2,3,5,6,8,10,12 dB	Enables circuit designer to change nominal insertion loss values without mother-board redesign making the EQY-XX-24+ Series ideal for select at test application.
Wideband operation, DC to 20 GHz	Supports a wide array of applications including wireless cellular, microwave communications, satellite, defense and aerospace, medical broadband and optic applications.
Excellent Power Handling Capability	Enables its use at the output of a variety of amplifiers
Small Size and simple to use (2 mm x 2 mm)	As a single chip solution, the EQY-XX-24+ Series occupies less board space than a lumped element approach, minimizes component count and ensures repeatable performance over wide frequency range.

*GaAs IPD (Gallium Arsenide Integrated Passive Device)

Microwave Gain Equalizer

EQY-12-24+

50Ω 12dB DC to 20 GHz

Product Features

- 12 dB Slope
- Small Package 2 x 2 mm MCLP
- Wide Bandwidth, DC-20 GHz
- Excellent Return Loss, 20 dB typ.

Typical Applications

- Fixed Satellite
- Mobile
- Radio location
- Space research

General Description

EQY-12-24+ is an absorptive Gain Equalizer fabricated using highly repetitive GaAs IPD MMIC process incorporating resistors, capacitors and inductors having negative insertion loss slope. EQY-12-24+ has a nominal attenuation slope of 12 dB and is packaged in tiny 2 x 2 mm, 8-Lead MCLP™ package.



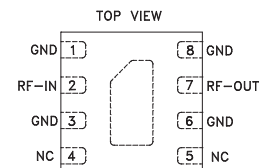
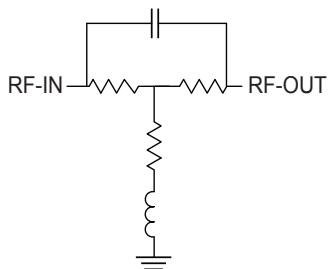
Generic photo used for illustration purposes only

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+RoHS Compliant

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

simplified schematic & pad description



Function	Pad Number	Description
RF-IN	2	RF-Input pad
RF-OUT	7	RF-Output pad
GND	1,3,6,8 & Paddle	Ground
NC	4,5	No connection, connected to ground externally

Electrical Specifications¹ at 25°C, 50Ω, unless otherwise noted.

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		20	GHz
Insertion Loss	0.01	13.1	13.4	13.7	dB
	5	—	10.5	—	
	10	—	6.4	—	
	18	1.6	1.9	2.2	
	20	—	1.4	—	
VSWR	0.01 - 5	—	1.08	—	:1
	5 - 10	—	1.09	—	
	10 - 18	—	1.22	—	
	18 - 20	—	1.24	—	

1. Measured on Mini-Circuits Characterization Test Board TB-EQY-12-24+. See Characterization Test Circuit (Fig. 1)

Absolute Maximum Ratings²

Operating Case Temperature	-55°C to 105°C
Storage Temperature	-65°C to 150°C
RF Input Power ³	30 dBm

2. Permanent damage may occur if any of these limits are exceeded.

3. Derates linearly to 28 dBm at 105°C

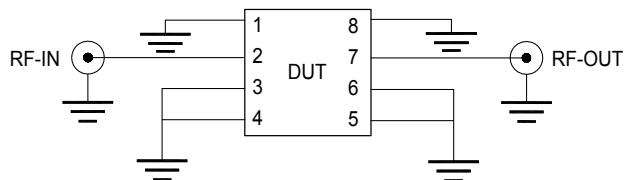
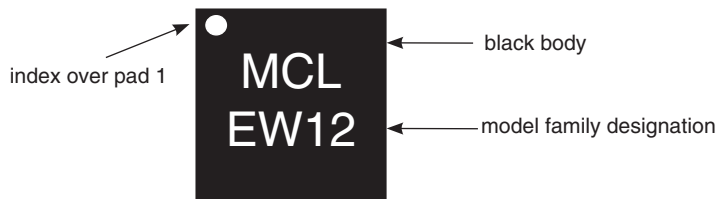
Characterization Test Circuit

Fig 1. Block Diagram of Test Circuit used for characterization. Test Board TB-EQY-12-24+
Conditions: Attenuation & Return Loss Pin=0 dBm

Product Marking

Marking may contain other features or characters for internal lot control

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Input VSWR (:1)	Output VSWR (:1)
10	13.39	1.09	1.10
1000	13.28	1.05	1.05
2000	12.95	1.07	1.07
4000	11.88	1.20	1.22
5000	11.12	1.21	1.24
6000	10.24	1.18	1.21
8000	8.32	1.22	1.13
10000	6.44	1.15	1.15
12000	4.77	1.20	1.25
14000	3.45	1.27	1.36
15000	2.90	1.29	1.37
16000	2.39	1.19	1.27
17000	1.93	1.13	1.14
18000	1.58	1.09	1.08
19000	1.37	1.01	1.09
20000	1.06	1.08	1.13

