Microwave
Gain Equalizers

EQY-SERIES

50Ω   DC to 6 GHz

CASE STYLE: MC1631-1

The Big Deal

- Excellent Return Loss, 20dB typ.
- Wide bandwidth, DC - 6 GHz
- Small Size, 2 mm x 2 mm

Product Overview

EQY 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 1,2,3,4,5,6,8 & 10 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 compesating negative gain slope of amplifiers, receivers, transmitters to achieve flat gain versus frequency.
Wide range of values 1,2,3,4,5,6,8 & 10 dB	Enables circuit designer to change nominal insertion loss values without mother-board redesign making the EQY series ideal for select at test application.
Wideband operation, DC to 6 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 31/32 dBm	Enables its use at the output of a variety of amplfiers
Small Size and simple to use (2 mm x 2 mm)	As a single chip solution, the EQY 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-10-63+

50Ω   10dB   DC to 6 GHz

Generic photo used for illustration purposes only

CASE STYLE: MC1631-1

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

Product Features
• 10.2 dB Slope
• Small Package 2 x 2 mm MCLP
• Wide Bandwidth, DC-6 GHz
• Excellent Return Loss, 20 dB typ.

Typical Applications
• Cellular
• PCS
• Communications
• Radar
• Defense

General Description
EQY-10-63+ is an absorptive Gain Equalizer fabricated using highly repetitive GaAs IPD MMIC process incorporating resistors, capacitors and inductors having negative insertion loss slope. EQY-10-63+ has a nominal attenuation slope of 10.2 dB and is packaged in tiny 2 x 2 mm, 8-Lead MCLP™ package.
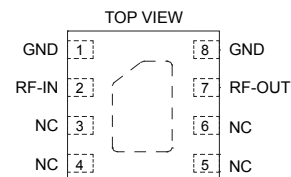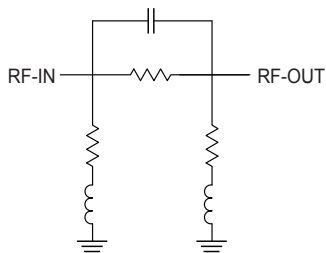
simplified schematic & pad description

TOP VIEW

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

Mini-Circuits®

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REV. OR
M165784
EQY-10-63+
GY/RS/CP
180424
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EQY-10-63+

Electrical Specifications[1] at 25°C, 50Ω, unless otherwise noted.

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		6	GHz
Insertion Loss	0.01	10.8	11.2	11.5	dB
	1	—	10.0	—	
	2	—	7.5	—	
	3	4.4	4.9	5.2	
	4	—	2.9	—	
	5	—	1.7	—	
	6	0.4	1.0	1.3	
VSWR	0.01 -1	—	1.06	—	:1
	1 - 2	—	1.03	—	
	2 - 3	—	1.05	—	
	3 - 4	—	1.05	—	
	4 - 5	—	1.04	—	
	5 - 6	—	1.12	—	

1. Measured on Mini-Circuits Characterization Test Board TB-1041-10-63+. See Characterization Test Circuit (Fig. 1)

Absolute Maximum Ratings[2]

|	
Operating Case Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
RF Input Power	31 dBm

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

Characterization Test Circuit

Fig 1. Block Diagram of Test Circuit used for characterization. Test Board TB-1041-10-63+
Conditions: Attenuation & Return Loss Pin=0 dBm

Product Marking

index over pad 1

black body

model family designation
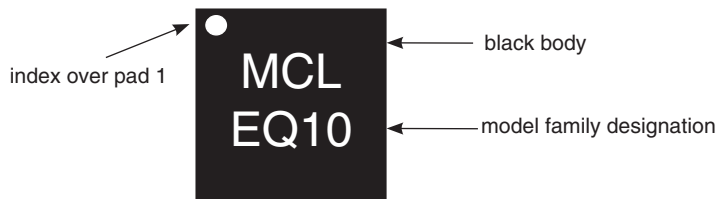
Marking may contain other features or characters for internal lot control

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Input VSWR (:1)	Output VSWR (:1)
10	11.16	1.06	1.06
50	11.17	1.07	1.07
100	11.15	1.07	1.07
500	10.86	1.05	1.06
1000	10.01	1.04	1.03
1200	9.57	1.02	1.03
1700	8.30	1.03	1.02
2200	6.94	1.05	1.04
2700	5.62	1.06	1.06
3000	4.90	1.06	1.06
3200	4.45	1.06	1.06
4000	2.94	1.01	1.02
4500	2.24	1.05	1.04
5000	1.69	1.11	1.11
5500	1.28	1.17	1.17
6000	0.98	1.21	1.22

EQY-10-63+
INSERTION LOSS

EQY-10-63+
VSWR

Mini-Circuits®