

Gain Equalizers



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Series Description

DLI's Gain Equalizers are designed as a small, low cost solution to your gain slope challenges. These equalizer designs employ a monolithic construction with precision thin-film conductor and resistor films with proprietary high dielectric constant ceramics for superior RF performance and repeatability. Components are well suited for use with pick and place equipment.

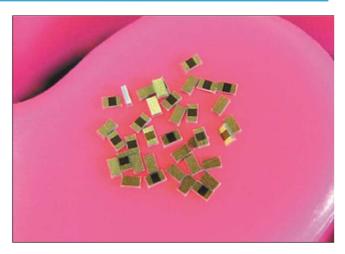
Available in tape and reel packaging for high volume applications.

Applications

- Broadband Microwave Modules; EW, ECM, ECCM
- Equalizer is utilized as a compensation circuit to correct for a loss slope created by other elements within a circuit such as in amplifier stages

Benefits

- Low Excess Insertion Loss
- Footprint interchangeable; gain slopes from 1 to 3.5 dB
- Conductive Epoxy and solder SMT mountable
- Characteristic Impedance: 50Ω



- Operating & Storage Temp: -55°C to +125°C
- Moisture Sensitivity Level: MSL1
- No Ground Connection Required
- Superior, repeatable microwave performance

Part Number		L	W	т	1	Wp	G	Nominal
Ероху	Solderable	_	VV		Lp	wp	G	Slope
AEQ2050 ^[1]	AEQ05510 ^[2]	30 ± 2	18 ± 2	5 ± 1	9 ± 1	14 ± 1	8 ± 1	2.25 dB
AEQ2199 ^[1]	AEQ05246 ^[2]	28 ± 2	16 ± 2	7 ± 1	7 ± 1	14 ± 1	12 ± 1	3.5 dB
AEQ2234 ^[1]	AEQ06042 ^[2]	32 ± 2	16 ± 2	5 ± 1	8 ± 1	12 ± 1	12 ± 1	3.25 dB
AEQ3042 ^[3]	AEQ3042 ^[3]	40 ± 2	20 ± 2	6 ± 1	17.5 ± 1	17.5 ± 1	3 ± 1	0.6 dB
AEQ3055 ^[3]	AEQ3055 ^[3]	40 ± 2	20 ± 2	6 ± 1	15.4 ± 1	18.4 ± 1	7.2 ± 1	1.5 dB
AEQ05467 ^[4]	AEQ05467 ^[4]	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	1.0 dB
AEQ05468 ^[4]	AEQ05468 ^[4]	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	1.5 dB
AEQ05469 ^[4]	AEQ05469 ^[4]	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	2.0 dB
AEQ05470 ^[4]	AEQ05470 ^[4]	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	2.5 dB
AEQ05471 ^[4]	AEQ05471 ^[4]	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	3.0 dB
AEQ05472 ^[4]	AEQ05472 ^[4]	28 ± 1	16 ± 1	7 ± 1	7 min.	14 ± 1	10	3.5 dB

All dimensions in mils. Mechanical outline drawings for equalizers listed above are available. Please contact DLI Applications Engineering for details. Operational Temperature Range: - 55 C to + 125 C

Metallizations as noted in [] above

- TOP:
 100 MICROINCHES MIN. Au OVER
 400 ± 100 ANGSTROMS TW
- TOP: 100 MICROINCHES MIN. Au OVER 50 MICROINCHES MIN. NIX OVER 300 ANGSTROMS MIN. TW.
- TOP: 50 MICROINCHES MIN. Au OVER 400 +/- 100 ANGSTROMS TW
- TOP:
 S MICROINCHES MIN. Au OVER
 MICROINCHES MIN. NIX OVER
 SO MICROINCHES MIN. NIX OVER
 300 ANGSTROMS MIN. TW

- MOUNTING SURFACE:
 100 MICROINCHES MIN. Au OVER
 400 ± 100 ANGSTROMS TW OVER TAN Resistor Layer
- 25 MICROINCHES MIN. Au OVER 50 MICROINCHES MIN. ŊŊ, OVER 5 MICROINCHES MIN. Au OVER 300 ANGSTROMS MIN. ŢſŊ, OVER ŢġŊ, Resistor Layer

30 MICROINCHES MIN. NI OVER

MOUNTING SURFACE:

- MOUNTING SURFACE:
 20 MICROINCHES MAX. Au OVER
- 50 MICROINCHES MIN. Au OVER 400 +/- 100 ANGSTROMS TIW OVER TAN Resistor Layer
- MOUNTING SURFACE:

 15 MIN. AU OVER

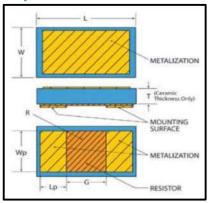
 15 MICROINCHES MIN. AU OVER

 50 MICROINCHES MIN. DIX/OVER

 16 MIN. JIX/

 300 ANGSTROMS MIN. JIX/OVER Jan Resistor Layer

Physical Dimensions

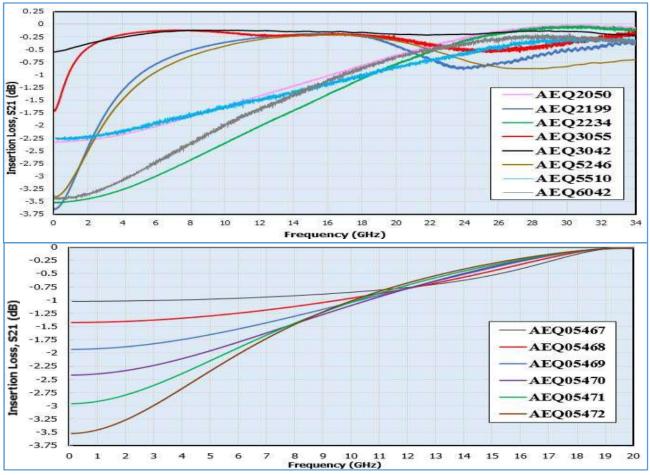




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Die Attach Recommendations

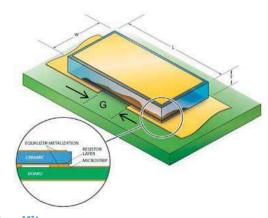
- 1) Equalizer width should be approximately as wide as 50 $\boldsymbol{\Omega}$ line trace on PCB.
- 2) The gap in the microstrip line should be nominally equal to dimension G.
- 3) Vacuum pick-up tool recommended for component handling. If pressure is to be applied during component placement, it should be done uniformly across the part.
- 4) Thin, unmounted circuit boards are prone to warpage during reflow. This can cause solder attach defects and cracking of components during handling or subsequent housing installation.

Custom Solutions

We realize that our standard offerings won't meet all customer requirements. DLI offers custom solutions with quick turn time.

Custom designs will be tailored to meet your system requirements by utilizing a design with one of our high K materials.

Temperature performance requirement? We can design on one of DLI's temperature stable materials. Please contact Applications Engineering for more information.



Design Kits

Two design kits are available for quick fix or circuit tuning needs. Each kit has 5 pieces of variant equalizer. Standard Series includes: AEQ2050, AEQ2199, AEQ2234, AEQ3042 and AEQ3055.

EW Series includes: AEQ05467, AEQ05468, AEQ05469, AEQ05470, AEQ05471 and AEQ05472.





