AM35 – EMI Filter Bank

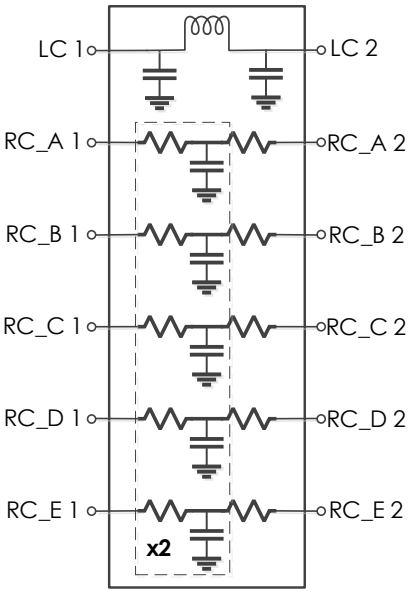
Power and Control Line

AM35 provides six filters in a tiny 1.5 mm x 3 mm package for filtering power and control lines that is necessary for spurious signal suppression for amplifiers, step attenuators, tunable filters, and switches. The device offers simplicity and space savings compared to the traditional discrete design approaches. The AM35 provides one power line filter and 5 control line filters spaced at 0.5 mm pitch to mate perfectly with your standard QFN devices.

FEATURES

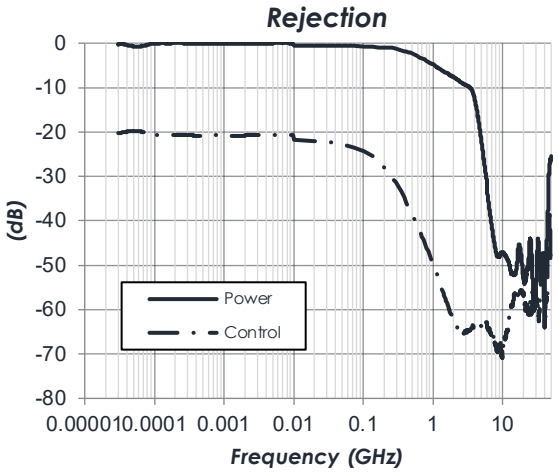
- One Power Line Filter
- Five Control Line Filters
- 100 MHz Corner Frequency – Control
- 300 MHz Corner Frequency – Power
- 50 dB Rejection
- 16 V Voltage Handling Capability
- 4mA/150mA Control/Power Capability
- 7.2ns Control Line RC Constant
- 1.5mm x 3mm DFN
- 0.5 mm Lead Pitch
- -40C to +85C Operation
- Symmetric Filtering

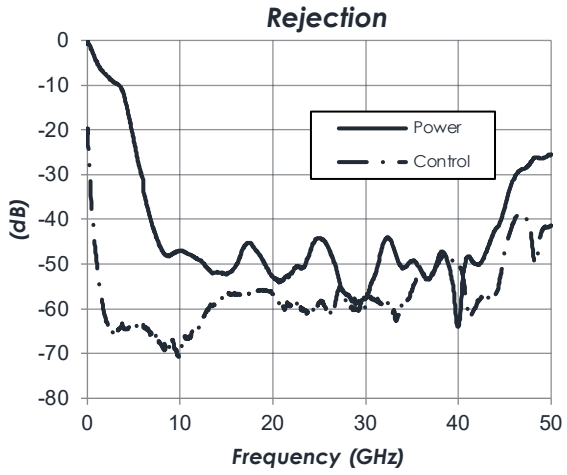
FUNCTIONAL DIAGRAM



CHARACTERISTIC PERFORMANCE

(T = 25° C. Rejection based on 50 Ω source, 50 Ω load)



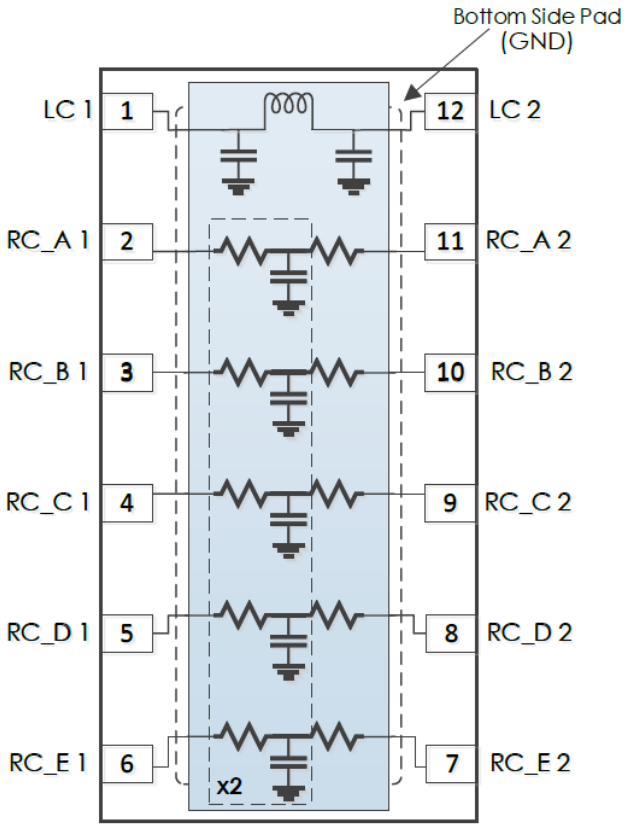


CONTENTS

REVISION HISTORY

Date	Revision	Notes
December 20, 2018	0	Preliminary Release
April 30, 2019	1	Initial Release
June 6, 2019	1A	Component Compliance Information Updated
May 15, 2020	2	Package information moved to main product page
March 5, 2021	3	Added RLC values and updated Functional Diagrams
June 5, 2024	4	Changed to Mercury branding. No content changes.

PIN LAYOUT AND DEFINITIONS



Pin	Name	Function
1	LC1	Power Line Filter Port 1
2	RC_A1	Control Line Filter A Port 1
3	RC_A1	Control Line Filter B Port 1
4	RC_A1	Control Line Filter C Port 1
5	RC_A1	Control Line Filter D Port 1
6	RC_A1	Control Line Filter E Port 1
7	RC_A1	Control Line Filter E Port 2
8	RC_A1	Control Line Filter D Port 2
9	RC_A1	Control Line Filter C Port 2
10	RC_A1	Control Line Filter B Port 2
11	RC_A1	Control Line Filter A Port 2
12	LC2	Power Line Filter Port 2
Bottom Pad	GND	Ground - Common

SPECIFICATIONS

Absolute Maximum Ratings

	Minimum	Maximum
DC Voltage		20 V
DC Input Current – Power Line		160 mA
DC Input Current – Control Lines		5 mA
Storage Temperature Range	-50 C	+150 C

Note: Any device operation beyond the Absolute Maximum Ratings may result in permanent damage to the device. The values listed in this table are extremes and do not imply functional operation of the device at these or any other conditions beyond what is listed under Recommended Operating Conditions. Any part subjected to conditions outside of what is recommended for an extended amount of time may suffer from reliability concerns.

Handling Information

	Minimum	Maximum
Storage Temperature Range (Recommended)	-50 C	+125 C
Moisture Sensitivity Level	MSL 3	

Mercury products are electrostatic sensitive.
Follow safe handling practices to avoid damage.

Recommended Operating Conditions

	Minimum	Typical	Maximum
Input Voltage			16 V
Input Current – Power Line			150 mA
Input Current – Control Lines			4 mA
Operating Case Temperature	-40 C		+85 C

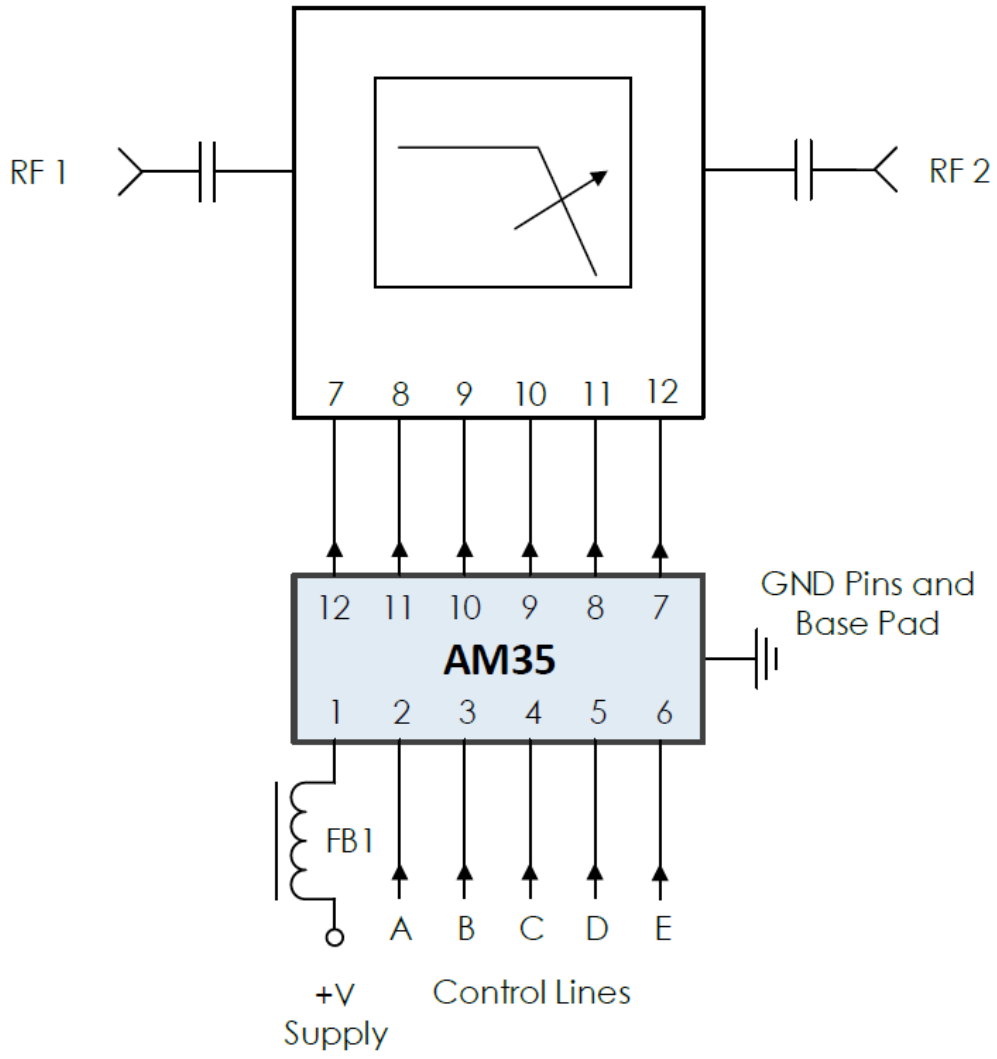
RLC VALUES

	Component	Value
Power Line Filter	Capacitor	2.0 pF
Power Line Filter	Inductor	1.1 nH
Power Line Filter	Capacitor	13.6 pF
Control Line Filter	Resistor	329 Ohms
Control Line Filter	Capacitor	6.2 pF

RECOMMENDED FOR USE WITH

Part Number	Description			
AM3029	1.5 GHz	to	3.0 GHz	Digitally Tunable Lowpass
AM3030	3.5 GHz	to	6.5 GHz	Digitally Tunable Lowpass
AM3039	9 GHz	to	18 GHz	Digitally Tunable Lowpass
AM3107	6 GHz	to	12 GHz	Digitally Tunable Lowpass
AM3110	18 GHz	to	26.5 GHz	Digitally Tunable Lowpass
AM3032	2.5 GHz	to	4.5 GHz	Digitally Tunable Highpass
AM3041	6 GHz	to	10 GHz	Digitally Tunable Highpass
AM3108	12 GHz	to	18 GHz	Digitally Tunable Highpass
AM3109	18 GHz	to	26.5 GHz	Digitally Tunable Highpass

TYPICAL APPLICATION



RECOMMENDED COMPONENT LIST (OR EQUIVALENT)

Part	Value	Part Number	Manufacturer
FB1	-	MMZ1005A222E	TDK

Notes:

1. Use ferrite bead in series with power filtering line for better low frequency performance.
2. It is recommended to ground any unused pins.

COMPONENT COMPLIANCE INFORMATION

RoHS: Mercury Systems, Inc. hereby certifies that all products comply with the EC Directive 2011/65/EC on the Restriction of Hazardous Substances, commonly known as EU-RoHS 6 and 10. All products supplied by Mercury shall be compliant with the European Directive 2011/65/EC based on the following substance list.

Substance List	Allowable Maximum Concentration
Lead (Pb)	<1000 PPM (0.1% by weight)
Mercury (Hg)	<1000 PPM (0.1% by weight)
Cadmium (Cd)	<75 PPM (0.0075% by weight)
Hexavalent Chromium (CrVI)	<1000 PPM (0.1% by weight)
Polybrominated Biphenyls (PBB)	<1000 PPM (0.1% by weight)
Polybrominated Diphenyl ethers (PBDE)	<1000 PPM (0.1% by weight)
Decabromodiphenyl Deca BDE	<1000 PPM (0.1% by weight)
Bis (2-ethylheyl) Phthalate (DEHP)	<1000 PPM (0.1% by weight)
Butyl Benzyl Phthalate (BBP)	<1000 PPM (0.1% by weight)
Dibutyl Phthalate (DBP)	<1000 PPM (0.1% by weight)
Diisobutyl Phthalate (DIBP)	<1000 PPM (0.1% by weight)

REACH: Mercury Systems, Inc. neither uses nor intentionally adds any of the substances considered to be a Substance of Very High Concern (SVHC) as defined by the EU Regulation (EC) No. 1907-2006 on Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH).

Conflict Materials: Mercury does not knowingly use materials that are sourced from the Democratic Republic of Congo (DRC) or any other known conflict regions. Mercury's supply chain is comprised of sources that are both environmentally and socially responsible. We periodically review this requirement with our vendors to ensure continued compliance.

Mercury takes its responsibility as a global partner seriously and will use due diligence within our supply chain to ensure all standards are met to the best of our knowledge.

Corporate Headquarters

50 Minuteman Road
Andover, MA 01810 USA
+1 978.967.1401 tel
+1 866.627.6951 tel
+1 978.256.3599 fax

International Headquarters
Mercury International
Avenue Eugène-Lance, 38
PO Box 584
CH-1212 Grand-Lancy 1
Geneva, Switzerland
+41 22 884 5100 tel

Learn more
Visit: mrcy.com
For pricing details, contact: MMICsales@mrcy.com
For technical details, contact: MMICsupport@mrcy.com