

EMI FILTER

AFV461 SERIES

Description

The AFV461 EMI filter will reduce the input line reflected ripple current of all DC/DC converter families to levels below the CEO3 limits of MIL-STD-461. This filter is intended for applications requiring compatibility to MIL-STD-704A.

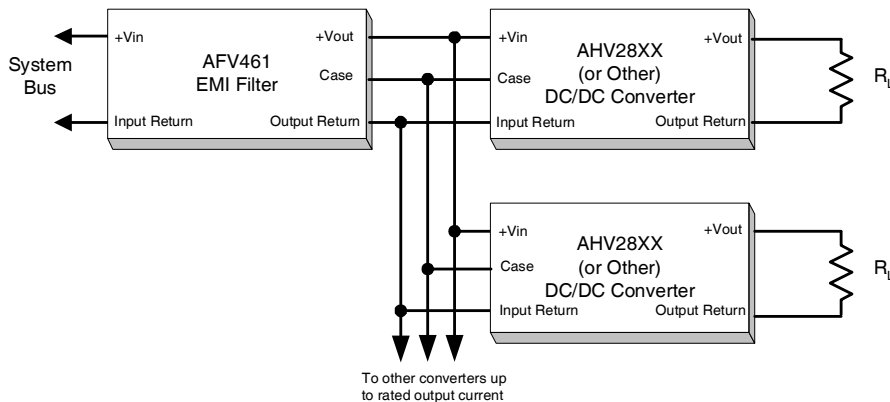
These EMI filters are manufactured in a facility certified to MIL-PRF-38534 and are available with military screening. Four grades are offered with different screening options. Refer to Part Number section.



Features

- 4.0 amp Input Current - max.
- 40 dB Noise Reduction min. @100 KHz
- -55°C to +125°C Operation
- Military Screening
- Compatible with all standard 28 Volts Input DC/DC Converters
- No Derating for -55°C to +125°C Operation
- No Tantalum Capacitors for High Reliability

Typical Application



AFV461 Series

International
IRF Rectifier

Absolute Maximum Ratings

| | | | |
|-------------------|--------|-----------------------------------|-----------------|
| Input Voltage | 50V DC | Lead Temperature (Soldering, 10s) | +300°C |
| Input Current | 4.0A | Operating Case Temperature | -55°C to +125°C |
| Input Ripple | 1.0A | Storage Temperature | -65°C to +150°C |
| Power Dissipation | 4.0W | | |

Specifications

| Parameter | Condition | Min | Typ | Max | Unit |
|----------------------------------|-------------------------------------|--------------------------------------|------|------------|------------|
| Input Voltage | Steady State Transient, 1 second | 0 | 28 | 40 80 | VDC |
| Input Current | DC Ripple | | | 4.0 1.0 | A A RMS |
| Output Voltage ¹ | Steady State | $V_{OUT} = V_{IN} - I_{IN} (R_{DC})$ | | | VDC |
| Output Current | Steady State | | | 4.0 | A |
| DC Resistance (R _{DC}) | Steady State | 0.07 | 0.10 | 0.15 | Ω |
| Noise Reduction | 100 KHz to 50 MHz | 40 | | | dB |
| Capacitance | Any pin to case | | | 4200 | pF |
| Isolation | Any pin to case 500VDC | 100 | | | MΩ |
| Weight | | | | 39 | g |

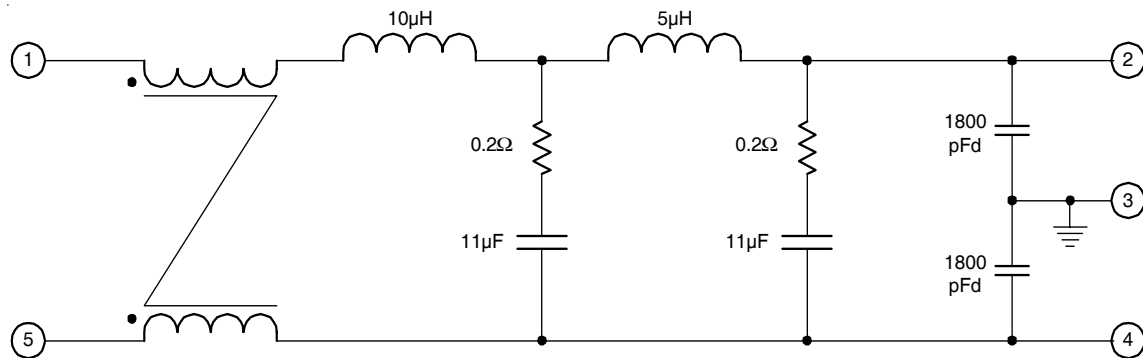
1. Typical Applications result in Vout within 2 % of Vin

Available Screening Levels and Process Variations for AFV461 Series

| Requirement | MIL-STD-883 Method | No Suffix | ES Suffix | HB Suffix | CH Suffix |
|----------------------------|--------------------|--------------|-----------------|------------------|------------------|
| Temperature Range | | -20 to +85°C | -55°C to +125°C | -55°C to +125°C | -55°C to +125°C |
| Element Evaluation | | | | | MIL-PRF-38534 |
| Internal Visual | 2017 | * | Yes | Yes | Yes |
| Temperature Cycle | 1010 | | Cond B | Cond C | Cond C |
| Constant Acceleration | 2001 | | 500g | Cond A | Cond A |
| Burn-in | 1015 | 48hrs @ 85°C | 48hrs @ 125°C | 160hrs @ 125°C | 160hrs @ 125°C |
| Final Electrical (Group A) | MIL-PRF-38534 | 25°C | 25°C | -55, +25, +125°C | -55, +25, +125°C |
| Seal, Fine & Gross | 1014 | * | Cond A, C | Cond A, C | Cond A, C |
| External Visual | 2009 | * | Yes | Yes | Yes |

* Per Commercial Standards

AFV461 Block Diagram



Refer to last page for Pin Designation

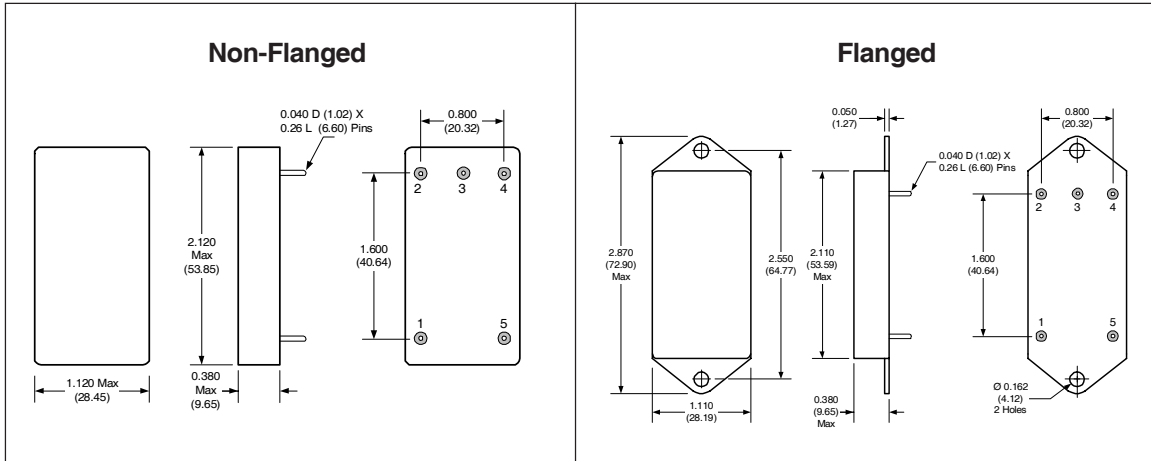
Device Synchronization

Whenever multiple DC/DC converters are utilized in a single system, significant low frequency noise may be generated due to slight difference in the switching frequencies of the converters (beat frequency noise). Because of the low frequency nature of this noise (typically less than 10KHz), it is difficult to filter out and may interfere with proper operation of sensitive systems (communications, radar or telemetry). International Rectifier offers an option, which provides synchronization of multiple AHE/ATW type converters, thus eliminating this type of noise. To take advantage of this capability, the system designer must assign one of the converters as the master. Then, by definition, the remaining converters become slaves and will operate at the masters' switching frequency. The user should be aware that the

synchronization system is fail-safe; that is, the slaves will continue operating should the master frequency be interrupted for any reason. The layout must be such that the synchronization output of the master device is connected to the synchronization input of each slave device. It is advisable to keep this run short to minimize the possibility of radiating the 250KHz switching frequency. A typical connection is illustrated on the cover sheet of this document.

The appropriate converters must be ordered to take advantage of this feature. After selecting the converters required for the system, a 'MSTR' suffix is added for the master converter part number and an 'SLV' suffix is added for slave part number. See Part Number section of the applicable converter data sheets.

AFV461 Case Outlines

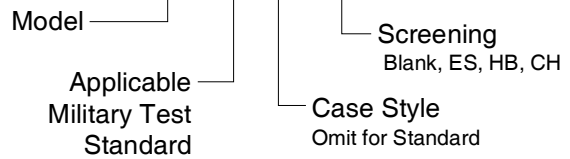


Pin Designation

| Pin No. | Designation |
|---------|---------------|
| 1 | + Vin |
| 2 | + Vout |
| 3 | Case |
| 4 | Output Return |
| 5 | Input Return |

Part Numbering

AFV 461 F / CH



Available Standard Military Drawing (SMD) Cross Reference

| Standard Military Drawing PIN | Vendor CAGE number | Vendor similar PIN |
|-------------------------------|--------------------|--------------------|
| 91020-02HXA | 52467 | AFV461/CH |
| 91020-02HZA | 52467 | AFV461F/CH |

单击下面可查看定价，库存，交付和生命周期等信息

[>>Infineon Technologies\(英飞凌\)](#)