# EMI INPUT FILTER
# 28 VOLT INPUT

## STF28-461
## EMI FILTER
## 0.8 AMP

### FEATURES

- **Fully qualified to Class H or K**
- **Passive components for maximum tolerance in space environments**
- **–55° to +125°C operation**
- 28 volt input
- Up to 0.8 amps throughput current
- 50 dB minimum attenuation at 500 kHz
- Compliant to MIL-STD-461C, CE03
- Compatible with MIL-STD-704E DC power bus


| MODEL | |
|---|---|
| STF28-461 | 0.8 amp |

Size (max.): 0.975 x 0.800 x 0.270 (24.77 x 20.32 x 6.86 mm)
See Section B8, cases A1, for dimensions.
Weight: 10.3 grams typical, 11.5 grams maximum
Screening: Standard, Class H, or Class K (MIL-PRF-38534)
See Section C2 for screening options, see Section A5 for ordering information.

### DESCRIPTION

The STF28-461™ EMI filter module has been designed as a companion for Interpoint SMSA flyback power converters. Multiple SMSA power converters can be operated from a single filter provided the total power line current does not exceed the filter maximum rating. The STF filter will reduce the SMSA's power line reflected ripple current to within the limit of MIL-STD-461C, Method CE03, as shown in the example of Figures 4 and 5.

The STF filter is fabricated using thick film hybrid technology and is sealed in a metal package for space, military, aerospace and other applications requiring EMI suppression.

### SCREENING AND REPORTS

The STF28-461 filter offers three screening options – Standard, Class H, or Class K. See Section C2, Quality Assurance, pages C2-7 through C2-9, for descriptions. Detailed reports on product performance are also available and are listed on page C2-9.

### OPERATION

The SMSA power converter has an internal capacitor across its input power terminals. When the SMSA and STF filters are used together, this capacitor becomes part of the filter and forms its final LC output section.

The STF filter provides both differential and common mode rejection bringing DC/DC converters into compliance with MIL-STD-461C CE03. It is designed to be used with the SMSA, SMHF, and MCH Series of converters. The STF filter can be used with multiple converters up to the rated current of the filter.

**For more information, contact your Interpoint representative listed in Section A5.**

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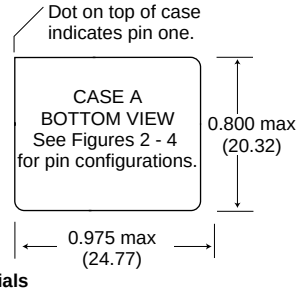
# CASES




**Materials**

| | |
|---|---|
| Header | Kovar/Nickel/Gold (Case A3, Kovar/Nickel) |
| Cover | Kovar/Nickel |
| Pins | Kovar/Nickel/Gold, matched glass seal |

**Case dimensions in inches (mm)**

Tolerance ±0.005 (0.13) for three decimal places
±0.01 (0.3) for two decimal places
unless otherwise specified

**CAUTION**

Heat from reflow or wave soldering may damage the device. Solder pins individually with heat application not exceeding 300°C for 10 seconds per pin.

**FIGURE 1: CASE A MAXIMUM DIMENSIONS**

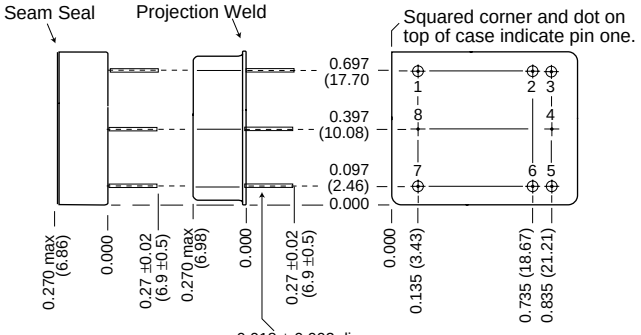



**FIGURE 2: CASE A1**

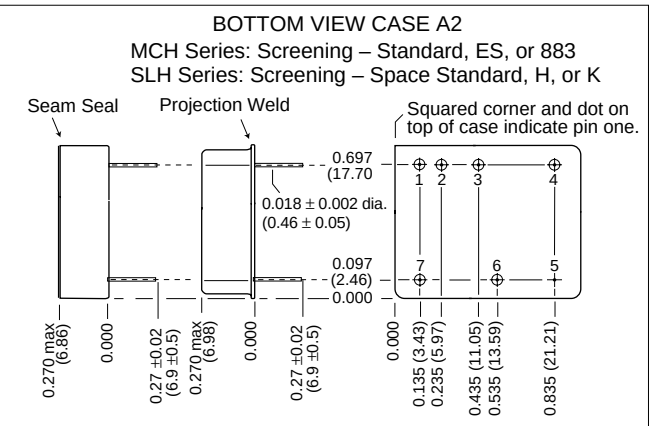



**FIGURE 3: CASE A2**

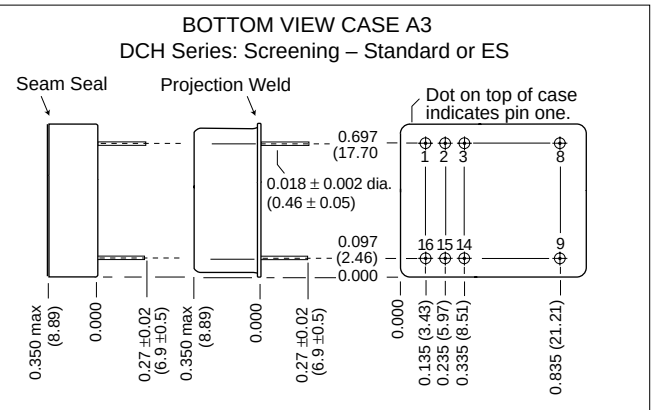



**FIGURE 4: CASE A3**

Note: Although every effort has been made to render the case drawings at actual size, variations in the printing process may cause some distortion. Please refer to the numerical dimensions for accuracy.



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# SPACE PRODUCTS

| ELEMENT EVALUATION TEST PERFORMED (COMPONENT LEVEL) | STANDARD (O) | | CLASS H | | CLASS K | |
|---|---|---|---|---|---|---|
| | M/S | P | M/S | P | M/S | P |
| Element Electrical | yes | no | yes | yes | yes | yes |
| Element Visual | no | no | yes | yes | yes | yes |
| Internal Visual | no | no | yes | no | yes | no |
| Temperature Cycling | no | no | no | no | yes | yes |
| Constant Acceleration | no | no | no | no | yes | yes |
| Interim Electrical | no | no | no | no | yes | no |
| Burn-in | no | no | no | no | yes | no |
| Post Burn-in Electrical | no | no | no | no | yes | no |
| Steady State Life | no | no | no | no | yes | no |
| Voltage Conditioning /Aging | no | no | no | no | no | yes |
| Visual Inspection | no | no | no | no | no | yes |
| Final Electrical | no | no | yes | yes | yes | yes |
| Wire Bond Evaluation* | no | no | yes | yes | yes | yes |
| SEM | no | no | no | no | yes | no |
| SLAM™/C-SAM: Input capacitors only (Add'l test, not req. by H or K) | no | no | no | yes | no | yes |

Notes
- M/S Active components (Microcircuit and Semiconductor Die)
- P Passive components
- * Not applicable to EMI filters that have no wirebonds

Definitions
Element Evaluation: Component testing/screening per MIL-STD-883 as determined by MIL-PRF-38534
SEM: Scanning Electron Microscopy
SLAM™: Scanning Laser Acoustic Microscopy
C-SAM: C - Mode Scanning Acoustic Microscopy

Applies to the following products:

SMFLHP Series
SMFL Series
SMHP Series (O&H only)
SMTR Series
SSP Series
SMHF Series
SMSA Series
SLH Series
SLIM Module
SFME120 EMI Filter
SFME28 EMI Filter
SFCS EMI Filter
SFMC EMI Filter
STF EMI Filter

# QA SCREENING
# SPACE PRODUCTS

| ENVIRONMENTAL SCREENING<br>TEST PERFORMED<br>(END ITEM LEVEL) | STANDARD<br>(O) | CLASS<br>H | CLASS<br>K |
|---|---|---|---|
| Non-destruct bond pull*<br>Method 2023 | no | no | yes |
| Pre-cap inspection<br>Method 2017, 2032 | yes | yes | yes |
| Temperature cycle<br>Method 1010, Cond. C | yes | yes | yes |
| Constant acceleration<br>Method 2001, 3000 g | yes | yes | yes |
| PIND Test<br>Method 2020, Cond. B | no | no | yes |
| Radiography<br>Method 2012 | no | no | yes |
| Pre burn-in test | yes | yes | yes |
| Burn-in, Method 1015, 125°C<br>96 hours<br>160 hours<br>2 x 160 hour (includes mid BI test) | <br>yes<br>no<br>no | <br>no<br>yes<br>no | <br>no<br>no<br>yes |
| Final electrical test<br>MIL-PRF-38534, Group A | yes | yes | yes |
| Hermeticity test<br>Fine Leak,<br>Method 1014, Cond. A<br>Gross Leak,<br>Method 1014, Cond. C | <br><br>yes<br><br>yes | <br><br>yes<br><br>yes | <br><br>yes<br><br>yes |
| Final visual inspection<br>Method 2009 | yes | yes | yes |

Test methods are referenced to MIL-STD-883 as determined by MIL-PRF-38534.

Note
* Not applicable to EMI filters that have no wirebonds.

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