

## DSF/FSO Series



- Up to 28 A Output Current
- Up to 500 W Output Power
- Active Surge Protection
- MIL-STD 461 and DEF-STAN 59-411
- MIL-STD 1275 and DEF-STAN 61-5
- MIL-STD 810
- 3 Year Warranty

## Specification

## Input

|                                  |                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------|
| Input Voltage Range              | • See Models & Ratings table                                                                   |
| Input Transient                  | • $\pm 250$ V for 50 $\mu$ s 15 mJ,<br>100 V for 50 ms 0.5 $\Omega$<br>per MIL-STD-1275A/B/C/D |
| Input Reverse Voltage Protection | • Continuous                                                                                   |
| Fuse Protection                  | • None                                                                                         |

## Output

|                             |                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Voltage              | • Tracks input voltage & clamps <36 VDC                                                                                                                                                                                                                                                                                                                                                  |
| Output Power                | • See Models & Ratings table                                                                                                                                                                                                                                                                                                                                                             |
| Output Module Inhibit (INH) | • Open collector transistor rated 70 VDC with 5 mA sink current referenced to -Vin/-Vout.<br>When the output current is:<br>>4 A: DSF100, >7.77 A : DSF200LV<br>>28 A: DSF500 then the INH pin is pulled logic low.<br>This can be used to inhibit downstream DC-DC converters and reduce the load on the filter. When the output current is lower than above the INH pin is logic high. |
| Overtemperature Protection  | • Shuts down output by pulling disable pin low when baseplate >100 °C. Typical hysteresis 5 °C auto recovery (not fitted to 'H' models)                                                                                                                                                                                                                                                  |

## General

|                        |                                                                                                                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Efficiency             | • See Table                                                                                                              |
| Isolation Voltage      | • 500 VDC Input & Output to Case                                                                                         |
| Series Resistance      | • 0.07 $\Omega$ DSF100, 0.26 $\Omega$ DSF200LV,<br>0.018 $\Omega$ DSF500, 0.013 $\Omega$ FSO461                          |
| Disabled Input Current | • 25 mA                                                                                                                  |
| Disable (DIS)          | • On = Logic high or open circuit<br>Off = Logic low or short circuit                                                    |
| No Load Current        | • 75 mA                                                                                                                  |
| Package Style          | • Photo-etched nickel-silver case & aluminium cooling baseplate                                                          |
| MTBF                   | • DSF100: 2496 kHrs,<br>DSF200LV: 2218 kHrs,<br>DSF500: 573 kHrs,<br>FSO461: 8737 kHrs,<br>to MIL-HDBK-217F at 40 °C, GB |

## Environmental

|                       |                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | • -40 °C to +100 °C baseplate                                                                                                                 |
| Storage Temperature   | • -55 °C to +100 °C                                                                                                                           |
| Salt Atmosphere       | • MIL-STD-810G method 509.4                                                                                                                   |
| Humidity              | • MIL-STD-810G 507.4                                                                                                                          |
| Altitude              | • MIL-STD-810G 500.4                                                                                                                          |
| Shock                 | • MIL-STD-810G 516.5 function test for ground equipment 40 g in 3 axes                                                                        |
| Vibration             | • MIL-STD-810G method 514.5C-17. Minimum integrity test for military equipment (1 Hr/axis, 3 axes).<br>Vibration 5-33 Hz, 0.5 mm displacement |

## EMC &amp; Safety

|                  |                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety Approvals | • CE marked LVD                                                                                                                                                                                                                                                                            |
| Immunity         | • MIL-STD-1275A-D, MIL-STD-461E/F/G (CS101, CS114, CS115 & CS116)<br>MIL-STD-704A, DEF-STAN 61-5 part 6 issue 5<br>Contact Sales when DEF-STAN-51-5 part 6 issue 6 is required                                                                                                             |
| EMC Performance  | • DSF100 & DSF200LV: MIL-STD 461E/F CE102 & DEF STAN 59-411 DCE01/DCE02 is achieved with external components.<br>DSF500: Compliance to MIL-STD 461E/F/G CE102 & DEF STAN 59-411 DCE01/DCE02 is achieved when used in conjunction with FSO461. See longform datasheet for more information. |

## Models & Ratings

DSF/FSO **XP**

| Output Power | Input Voltage | Output                         |                       | Typical Efficiency | Model Number <sup>(4)</sup> |
|--------------|---------------|--------------------------------|-----------------------|--------------------|-----------------------------|
|              |               | Voltage                        | Max Current           |                    |                             |
| 100 W        | 10-33 VDC     | <36 VDC                        | 3.7 A                 | 98%                | DSF100                      |
| 30 - 54 W    | 10-18 VDC     | <36 VDC                        | 3.0 A                 | 92%                | DSF200 LV                   |
| 126 - 230 W  | 18-33 VDC     | <36 VDC                        | 7.0 A                 | 93%                |                             |
| 280 - 500 W  | 10-33 VDC     | <36 VDC                        | 28.0 A <sup>(1)</sup> | 98%                | DSF500 <sup>(3)</sup>       |
| 500 W        | 0-100 VDC     | $V_{in} - I_{in} \times 0.013$ | 28.0 A                | 99%                | FSO461 <sup>(2)</sup>       |

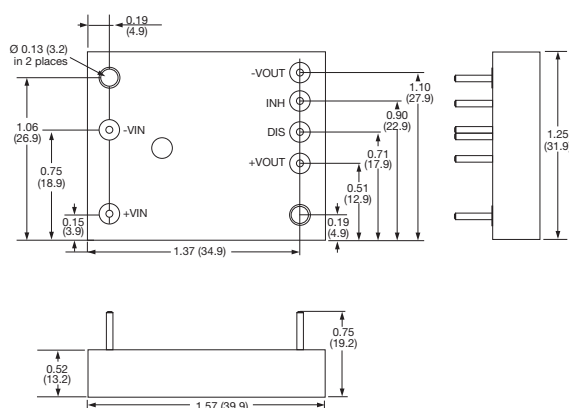
### Notes

- For input voltages above 18 V, maximum load is 500 W.
- FSO461 has filter circuitry only. To be used with DSF500 for conducted immunity compliance.
- DSF500 has surge protection only. To meet stated EMC performance it must be used with FSO461.

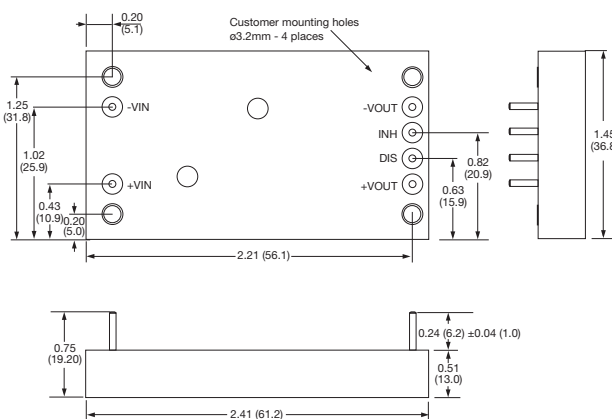
- For models without overtemperature protection, add suffix '-H' e.g. DSF500-H. Contact sales for further information.

## Mechanical Details

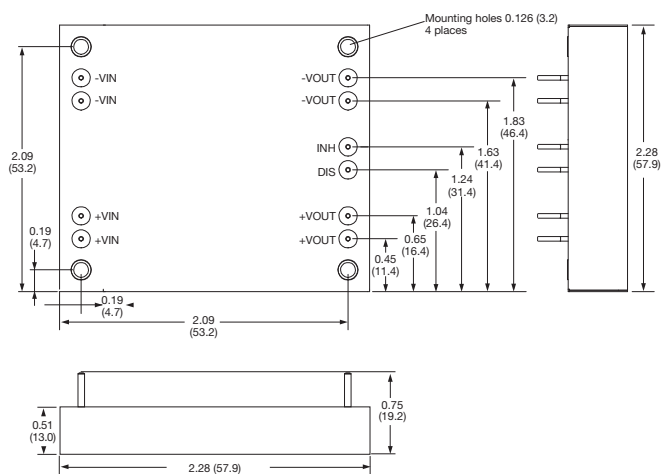
### DSF100 - Surge protection and filter



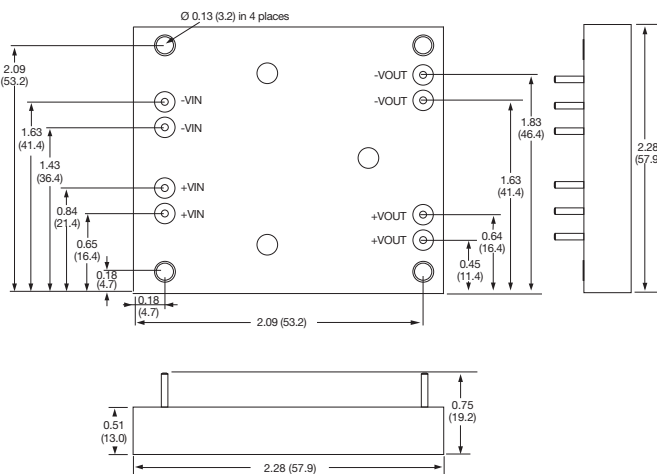
### DSF200LV - Surge protection and filter



### DSF500 - Surge protection



### FSO461 - Filter



### Notes

- All dimensions in inches (mm).
- Weights: DSF100: 0.11 lbs (50 g)  
DSF200LV: 0.18 lbs (80 g)  
DSF500: 0.36 lbs (160 g)  
FSO461: 0.36 lbs (160 g)
- Tolerance  $\pm 0.011$  ( $\pm 0.3$ )
- Pin diameter 0.04 (1.0)
- Pin Material: Copper - tin alloy  
Finish: 2.5  $\mu$  copper and 2.5  $\mu$  Sn (tin)