

Filter & Surge Protection

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	• ± 250 V for 50 μ s 15 mJ, 100 V for 50 ms 0.5 Ω 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. When the output current is: >4 A: DSF100, >7.77 A : DSF200LV >28 A: DSF500 then the INH pin is pulled logic low. 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 Ω DSF100, 0.26 Ω DSF200LV, 0.018 Ω DSF500, 0.013 Ω FSO461
Disabled Input Current	• 25 mA
Disable (DIS)	• On = Logic high or open circuit 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, DSF200LV: 2218 kHrs, DSF500: 573 kHrs, FSO461: 8737 kHrs, 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). Vibration 5-33 Hz, 0.5 mm displacement

EMC & Safety

Safety Approvals	• CE marked LVD
Immunity	• MIL-STD-1275A-E, MIL-STD-461E/F/G (CS101, CS114, CS115 & CS116) MIL-STD-704A, DEF-STAN 61-5 part 6 issue 5 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. 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 ⁽⁴⁾
		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 ⁽¹⁾	98%	DSF500 ⁽³⁾
500 W	0-100 VDC	$V_{in} - I_{in} \times 0.013$	28.0 A	99%	FSO461 ⁽²⁾

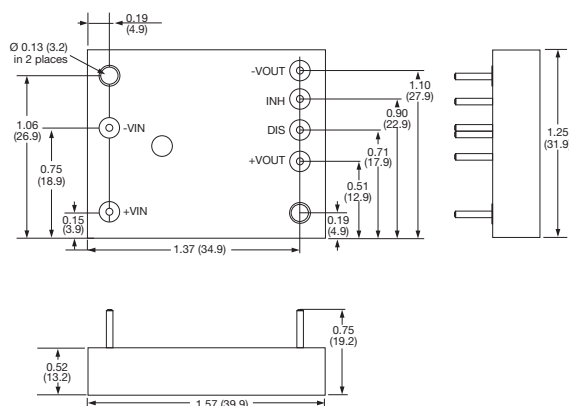
Notes

- 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.

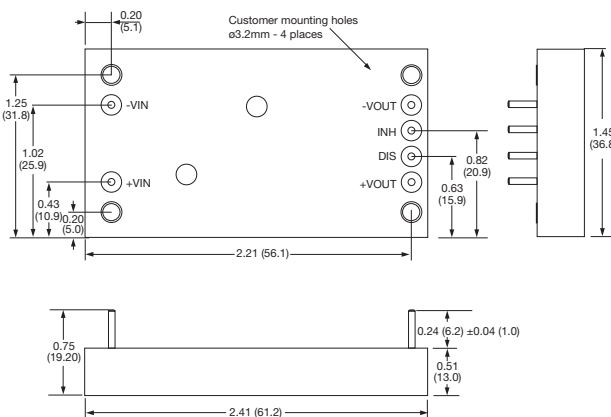
- For models without overtemperature protection, add suffix '-H' e.g. DSF500-H. Contact sales for further information.

Mechanical Details

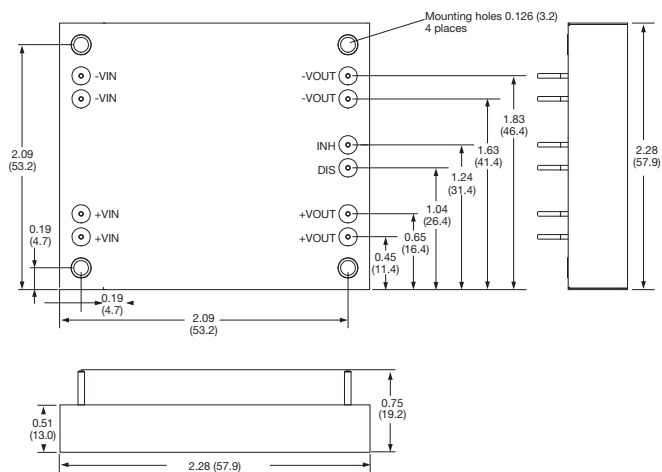
DSF100 - Surge protection and filter



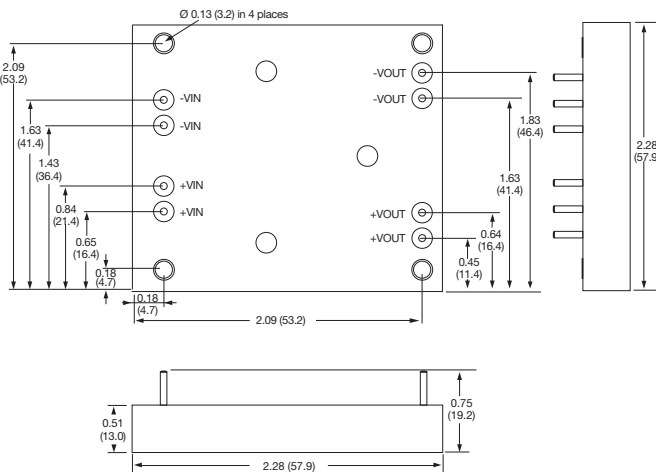
DSF200LV - Surge protection and filter



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 ± 0.011 (± 0.3)
- Pin diameter 0.04 (1.0)
- Pin Material: Copper - tin alloy
Finish: 2.5 μ copper and 2.5 μ Sn (tin)