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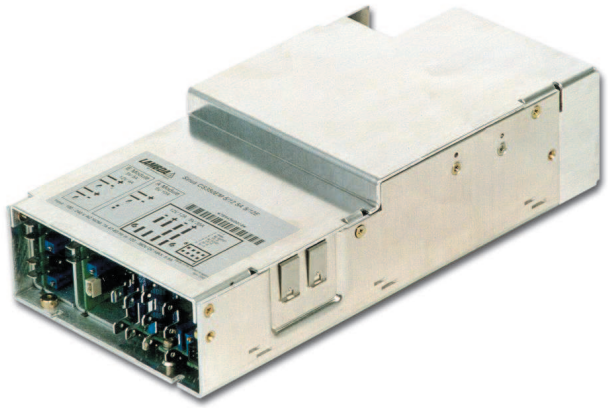
Find the *TDK-Lambda Sirius CSF250EI* at our website: *Click HERE*

TDK·Lambda Sirius 250/350 Series

250-350W Multiple Output Modular Power Supply

Features

- Universal AC Input, PFC
- AC Fail Signal / Global Inhibit
- Up to 6 fully regulated & independent outputs
- 150% Peak Current Capability
- Low Leakage Medical Options
- Input Transient Protection
- Multiple Cooling Options
- International Safety Agency Approvals
- No Minimum Load on Flexi (CSF) Models



Key Market Segments & Applications

Industrial Test

RoHS

Specifications

Model		CS250	CSF250	CSF350*
AC Input Voltage & Frequency	-	85-264VAC, 47-440Hz (Approvals apply up to 63 Hz)		
DC Input Voltage Range	V	120 - 340VDC		120 - 360VDC
Input Current	A	5A maximum		7A maximum
Inrush Current	A	< 40A		< 30A
Leakage Current	NA	<800uA @ 264VAC, 50Hz (see input leakage filter options for lower ratings)		
Low Leakage Filters	-	Optional. Refer to options table for codes & ratings.		
Efficiency	%	>70% @ 230VAC & full load		
Power Factor Correction	-	Compliant to EN61000-3-2 (>0.93 typical, reduced PFC > 254VAC or > 65Hz)		
Conducted EMI	-	EN55022 level B, FCC Class B		
Radiated EMI	-	EN55022 level A, FCC Class A		
Output Voltage Adjustment	-	Via trim pot. Refer to the output module code selector table for ranges.		
Overcurrent Protection	-	All outputs short circuit protected (with auto-recovery)		
Overvoltage Protection	-	All outputs protected, shuts down converter, auto restart		
Line & Load Regulation	-	50mV for 3.3V & 5V outputs, 3% for outputs >5V		
Ripple & Noise	-	1% pk - pk for outputs >5V. 50mV on outputs £5V.		
Noise (20 MHz Bandwidth)	%	2% pk-pk on CS250	1% pk-pk on CSF250 & CSF350	
No Load Operation	-	10% on O/P 1 for full rated load	No preload is required on Flexi Sirius (CSF) models.	
Hold Up Time	ms	15mS minimum at full rated output		
Remote Sense	-	Available on all main board outputs 1 & 2, and output modules L & A		
Options	-	Refer to options tables for case, fan, and low leakage option codes.		
Operating Temperature	°C	0°C to +50°C full load, derate each output at 2.5% / °C from 50°C to 70°C.		
Thermal Protection	-	Thermal protection on converter and output regulators (with auto recovery)		
Storage Temperature	°C	-40°C to +85°C (max 12 months)		
Temperature Coefficient	%/ °C	0.02% per °C		
Humidity	%RH	5% - 95% Non-condensing		
Altitude	ft	0 - 6,560 ft. Operating (2,000 m)		0 - 9,800 ft. (3,000 m)
Cooling	-	End/Top mounted fan - forced-air cooling. Customer air version avail. on 250W models.		
Isolation	-	I/P - O/P 4.3kVDC (4kVAC on CSF without Y-caps), I/P - Ground 2.3kVDC, O/P - Ground 500VDC		
Switching Frequency	kHz	110kHz on PFC converter, 190kHz on output converter.		
Vibration	g	1.5G, 10 - 200Hz		
Shock	g	3,000 bumps, 10G, 16ms half-sine pulses.		
Safety Agency Approvals	-	UL60950-1, IEC60950-1, CSA22.2 No.60950-1, EN60950-1, IEC601-1 & EN60601-1(CSF models), CE Mark (LVD)		
Module Slots	-	2		
Weight	g	1270		
Size (WxHxD)	in.	5.0" x 2.0" x 10.2"		5.0" x 2.5" x 10.2"
Warranty	yrs	Three Years		

* CSF350 - Obsolete Dec 2010

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Part Number Breakdown:

CSF250	EM	LL	5.5/12	3.3L 12/12.2G
Case Code	Fan & Connection Code	Low Leakage Filter Option	Main Output Code	Auxiliary Output Codes

1 Case Code

Code	Power	Minimum Load Required
CS250	250	Yes
CSF250	250	No
CSF350*	350	No

2 Fan & Connection Codes

Choose the desired fan & AC input connector options from the following table.

Code	Fan Option	AC Connector	Dimensions (H x W x L)
For CS250 & CSF250			
NM*	No Fan (Covered)	Molex	2" x 5" x 9"
LM*	No Fan (No Cover)	Molex	2" x 5" x 9"
TM	Top Fan	Molex	3.2" x 5" x 9"
EI	Dual End Fan	IEC with AC On/Off Switch	2" x 5" x 10.2"
EM	Dual End Fan	Molex	2" x 5" x 10.2"
SM	Single End Fan	Molex	2" x 5" x 10.2"
For CSF350			
TQ	Top Fan	Fast-On	3.5" x 5" x 9"
EQ	End Fan	Fast-On	2.5" x 5" x 10.2"
EI	End Fan	IEC with AC On/Off Switch	2.5" x 5" x 10.2"

*A minimum of 3m/s (38 CFM) airflow required directly through PSU at 0 load (Not a convection cooled PSU).

3 Main Output Codes

From the table below, select outputs 1&2.

Main Output Code	Output 1 V nom	Output 1 Amps	Output 1 V adjust[10]	Output 2 V nom	Output 2 Amps	Output 2 V adjust[10]
For CS250						
5/3.3[1]	5	35	5 - 5.5[2]	3.3	16[5]	2.7 - 3.5[3]
5/12[1]	5	35	5 - 5.5[2]	12	8	9 - 15
24	24	10	24 - 28	-	-	-
For CSF250						
3.3/5[1]	3.3	30	1.8 - 3.8[4]	5	20	4.5 - 5.5[2]
5/12[6]	5	25	4.5 - 8.0[4]	12	10	9 - 13
5/24[6]	5	25	4.5 - 8.0[4]	24	6	18 - 25
For CSF350						
5/3.3[1]	5	50[7]	3.9 - 5.7	3.3	20	1.8 - 3.9
3.3/5[1]	3.3	50[8]	1.8 - 3.9	5	20	3.9 - 5.7
24	24	15	18 - 28	-	-	-
5/12[6]	5	50[9]	3.9 - 5.7	12	12	10 - 16
3.3/12[6]	3.3	50[9]	1.8 - 3.9	12	12	10 - 16

Notes:
1) Outputs 1 & 2 have common 0V.
2) Maximum voltage at terminals = 5.7V
3) Maximum voltage at terminals = 3.8V
4) Includes sense voltage (total line drop).
5) Max. current from output #2 must not exceed 2x the actual current on output #1.
6) Outputs 1 & 2 are galvanically isolated.
7) 40A above 45°C, 45A above 35°C ambient.
8) 45A above 45°C.
9) 45A above 40°C.
10) Users may specify required output voltage within adjustment range. (i.e. if 5.2V and 12.7V are needed, description = CSF250 EM 5.2/12.7)

For Additional Information, please visit
us.tdk-lambda.com/lp/products/sirius-series.htm

4 Auxiliary Output Codes

From the table below, select up to (2) modules for up to an additional (4) outputs. Format = Desired Voltage + Module Code Letter (26V @ 4A = "26C") or (5.1V @5A & 24V @ 2A = "5.1/24F")

Auxiliary Outputs Modules[1]	Code	V1 nom	Amps[5]	V2 nom	Amps[5]	V1 adjust[6]	V2 adjust[6]
Single Output	L	3.3	107 (16)	-	-	1.8 - 3.9[2] (1.8 - 3.8)[2]	-
	A	5	10 (12)	-	-	4.5 - 5.5[2] (4.5 - 6.0)[2]	-
	B	12	8 (9.5)	-	-	11 - 158 (9 - 16)	-
	C	24	4 (4.5)	-	-	16 - 28 (17 - 30)	-
Dual Outputs	D[9]	5	5 (6)	3.3	5 (6) (4.5 - 6.0)	4.5 - 5.5 (2.7 - 4)	2.7 - 3.9
	M	5	5 (6)	5	5 (6) (4.5 - 6.0)	4.5 - 5.5 (4.5 - 6.0)	4.5 - 5.5
	E	5	5 (6)	12	4 (4.5) (4.5 - 6.0)	4.5 - 5.5 (9 - 16)	9 - 15
	F	5	5 (6)	24	2 (2.5) (4.5 - 6.0)	4.5 - 5.5 (17 - 30)	16 - 28
	G	12	4 (4.5)	12	4 (4.5) (9 - 16)	9 - 15 (9 - 16)	9 - 15
	H	12	4 (4.5)	24	2 (2.5) (9 - 16)	9 - 15 (17 - 30)	16 - 28
	J	24	2 (2.5)	24	2 (2.5) (17 - 30)	16 - 28 (17 - 30)	16 - 28

Notes:
1) All module outputs are isolated.
2) Will allow 0.5V remote sense (total line drop), but will not adjust above specified range.
3) Modules are capable of 150% current value for 1 minute.
4) Format for module code = desired voltage + module code letter. Refer to the following examples: (26V @ 4A = "26C") or (5.1V @ 5A & 24V @ 2A = "5.1/24F").
5) Currents within ( ) represents values when used with the Flexi Sirius 350 (CSF350).
6) Voltages within ( ) represents values when used with the Flexi Sirius 250 (CSF250).
7) Rated 14A for CSF250 models.
8) Rated 9 - 15V for CSF350 models.
9) D module outputs have common 0V.

Leakage Options

Option	Description	Max. Leakage	EMC
Standard	Curve B Filter	0.8 mA	Curve B
ML	Medium Leakage	0.5 mA	Curve A
LL	Low Leakage	0.3 mA	Curve A
RL	Reduced Leakage	150 µA	Above Curve A
TL	Tiny Leakage	90 µA	Above Curve A

Sample Configurations

	Output 1		Output 2		Output 3		Output 4		Output 5	
	V	A	V	A	V	A	V	A	V	A
CS250EI-24	24	10	-	-	-	-	-	-	-	-
CS250TM-5/15	5	35	15	8 (12)	-	-	-	-	-	-
CS250EI-24-5/12E	24	10	5	5 (7.5)	12	4 (6)	-	-	-	-
CSF350EQ-LL-5/12-12.7B	5	45	12	12(18)	12.7	9.5(14.3)	-	-	-	-
CSF250EI-3/5-12B	3.3	30	5	20	12	8 (12)	-	-	-	-
CS250TM-5/12-12B-24C	5	35	12	8 (12)	12	4 (6)	24	2 (6)	-	-
CS250EI-5/12-3.3L-12/12G	5	35	12	8 (12)	3.3	10(15)	12	4 (6)	12	4 (6)

Note: 1) Output currents in brackets ( ) are peak currents for 1 minute

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