RFB300/350 Series ART



24 Vin and 48 Vin single output

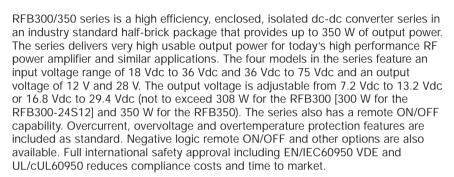
DC-DC CONVERTERS

300-350 W Half-Brick

NEW Product



- Wide temperature range, -40 °C to +100 °C @ full power
- High power density (160 W/in³ in 0.4" tall version)
- Input voltage range: 18-36 Vdc or 36-75 Vdc
- Output voltage range: 7.2-13.2 Vdc or 16.8-29.4 Vdc
- Remote ON/OFF
- · Operational insulation system
- Available RoHS compliant











2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25 °C unless otherwise stated. External output capacitance required (See Note 4)

SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS

Input voltage - peak (100 ms max., 1.0 % duty cycle max.)	24 Vin 48 Vin	-0.5-50 Vdc -0.5-100 Vdc
Input voltage continuous	24 Vin 48 Vin	-0.5-40 Vdc -0.5-80 Vdc
Adjust pin voltage (with respect to -sense pin)		-0.5-12 Vdc

OUTPUT SPECIFICATIONS

Voltage adjustability	12 Vout 28 Vout	7.2-13.2 Vdc 16.8-29.4 Vdc
Min./max. load	12 Vout 28 Vout	0/25 A, 0/29.2 A 0/11 A, 0/12.5 A
Output load capacitance (See Note 10)	12 Vout 28 Vout	470 μF to 4,700 μF 330 μF to 3,300 μF
Rise time	(See Note 12)	5 ms typ.

INPUT SPECIFICATIONS

Input current (See Note 3)		23.8 A max. @ lo max. 11.2 A max. @ lo max. 13 A max. @ lo max.
Input reflected ripple (See Note 4)	24 Vin 48 Vin 12 V model 48 Vin 28 V model	12 mA (pk-pk) 42 mA (pk-pk) 28 mA (pk-pk)
Input capacitance - Internal filter	24 Vin 48 Vin	39 μF 13 μF
Inrush current	(See Note 11)	2 A ² s

EMC CHARACTERISTICS

Conducted emissions	EN55022	See Application Note 167
Radiated emissions	EN55022	See Application Note 167
Radiated ettiissions	ENGOUZZ	See Application Note 107

GENERAL SPECIFICATIONS

Efficiency	24 Vin 12 V model 24 Vin 28 V model	86% 90%
Vin = Vin (nom), lout (max.)	48 Vin 12 V model 48 Vin 28 V model 48 Vin 28 V model	90% 88% 91%
Approvals and standards	IECE	VDE IEC60950 EE CB, UL/cUL60950
Material Flammability		UL94V-0
Weight	0.5 inch tall version	110 g (3.88 oz.)
MTBF @ 55 °C Telcordia SR-332 Issue 1	12 V model 28 V model	1,900,000 hours min. 2,400,000 hours min.

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating baseplate, temperature	-40 °C to +100 °C
	Non-operating	-40 °C to +100 °C

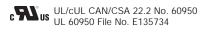
RC PIN ELECTRICAL INTERFACE

Open collector compatible	e (See AN 167 fo	or remote ON/OFF)
RC: ON voltage Open circuit voltage	(See Note 13)	5 V min. 5 V min, 11 V typ 13 V max.
High level leakage current		-25 μA max.
OFF voltage Low level input current	(See Note 15) (See Note 16)	1.2 V max. -250 µA max.

International Safety Standard Approvals



VDE0805/EN60950/IEC950 File No. 10401-3336-0198 Licence No. 40005395



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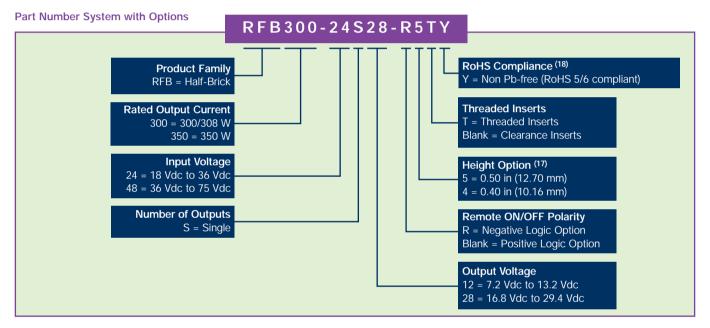
24 Vin and 48 Vin single output

DC-DC CONVERTERS 300-350 W Half-Brick 2

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NEW Product

	PUT WER	INPUT	OUTPUT	OUTPUT CURRENT	OUTPUT CURRENT	EFFICIENCY	REGU	LATION	MODEL
	AX.)	VOLTAGE	VOLTAGE	(MIN.)	(MAX.)	(TYP.)	LINE	LOAD	NUMBER (18,19)
300	O W	18-36 Vdc	7.2-13.2 Vdc	0 A	25 A	86%	±0.15%	±0.2%	RFB300-24S12Y
308	3 W	18-36 Vdc	16.8-29.4 Vdc	0 A	11 A	90%	±0.15%	±0.2%	RFB300-24S28Y
308	3 W	36-75 Vdc	16.8-29.4 Vdc	0 A	11 A	91%	±0.15%	±0.2%	RFB300-48S28Y
350	O W	36-75 Vdc	7.2-13.2 Vdc	0 A	29.2 A	88%	±0.15%	±0.2%	RFB350-48S12Y ⁽¹⁷⁾
350	O W	36-75 Vdc	16.8-29.4 Vdc	0 A	12.5 A	91%	±0.15%	±0.2%	RFB350-48S28Y



Notes

- 1 Measurement Bandwidth: 20 MHz; Measured with 1 μF ceramic and a 330 μF (470 μF for 12 V output model) aluminum or solid tantalum capacitor across the output terminals.
- 2 Di/dt = 1 A/μs; I_{out} = ±25% lout (max); Vin = Vnom; lout = Inom. Tested with a 1 μF ceramic and a 330 μF (470 μF for 12 V output model) aluminum electrolytic capacitor across the output.
- 3 External input fusing required. Use a fast acting fuse: 40 A (24 V model), 15 A (48 V, 350 W model).
- 4 lout = lout (max) Measured with the input capacitor, Cbypass = 330 μF, and 6 μH inductor in series with the power source. Frequencies
- 5 Signal line assumed <3 m in length.
- 6 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand-alone product.
- Negative remote ON/OFF option also available. Add suffix '-R' to part number, for example see part numbering system.
- 8 With the enable signal asserted, this is the time from when the input current reaches 10 % of the final steady state value until the output voltage reaches 10 % of the nominal output value. Start-up into resistive load.
- 9 With Vin > Vin (min.) applied for a minimum of 1 second, this is the time from when the primary ON/OFF signal is activated until the output voltage reaches 10 % of the nominal output voltage.
- 10 Minimum effective ESR is 1 m . Minimum phase margin is 35°.
- 11 Measured per ETSI 300 132-2 Section 4.7.2.
- 12 From 10% to 90% of Vout (nom). Full resistive load. 1 μ F ceramic and 330 μ F (470 μ F for 12 V model) electrolytic capacitors across the output.

Notes Contd.

- 10 Minimum effective ESR is 1 m . Minimum phase margin is 35°.
- 11 Measured per ETSI 300 132-2 Section 4.7.2.
- 12 From 10% to 90% of Vout (nom). Full resistive load. 1 μ F ceramic and 330 μ F (470 μ F for 12 V model) electrolytic capacitors across the output.
- 13 Converter guaranteed ON for positive option.
- 14 Maximum driver leakage to insure converter is ON.
- 15 Converter guaranteed OFF for positive option.
- 16 Driver sink current @ Vrc 1.2 V.
- 17 0.40 in height option is not available on the 12 V output model.
- 18 The'Y' suffix indicates that these parts are TSE ToHS 5/6 (non-Pb-free) compliant
- 19 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at http://www.artesyn.com/powergroup/products.htm to find a suitable alternative

PROTECTION		
Short-circuit (Brickwall current limiting)	12 V model RFB300 12 V model RFB350 28 V model RFB300 28 V model RFB350	29.4 A 34.4 A 12.9 A 14.7 A
Overvoltage protection (Output shutdown)	12 V model 28 V model	15 V 33.2 V
Overtemperature shutdown	(midpoint of baseplate)	110 °C

RFB300/350 Series ARD



24Vin and 48Vin single output

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NEW Product

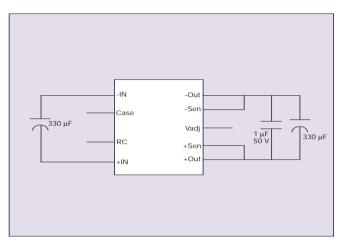


Figure 1 - Standard Application - 28 V Models

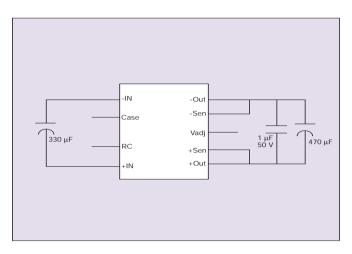


Figure 2 - Standard Application - 12 V Models

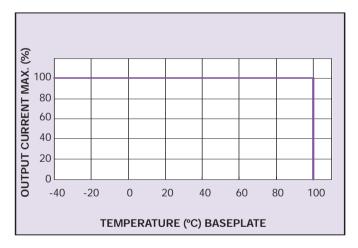


Figure 3 - Derating Curve - All Models

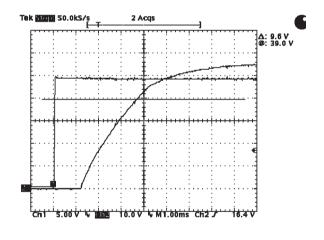


Figure 4 - Typical Turn-on Delay and Risetime RFB350-48S28Y Channel 1: Output Voltage, Channel 2: Input Voltage

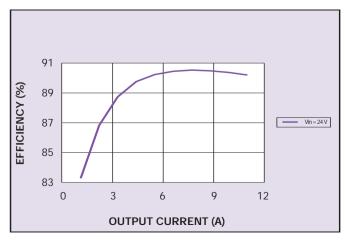


Figure 5 - Typical Efficiency vs. Output Current - RFB300-24S28Y

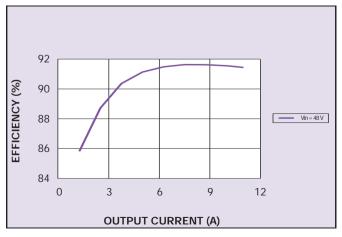


Figure 6 - Typical Efficiency vs. Output Current - RFB300-48S28Y

RFB300/350 Series ARD

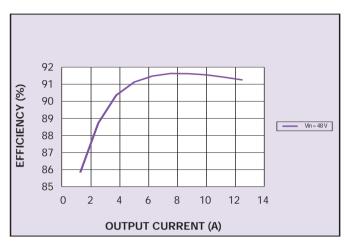


24Vin and 48Vin single output

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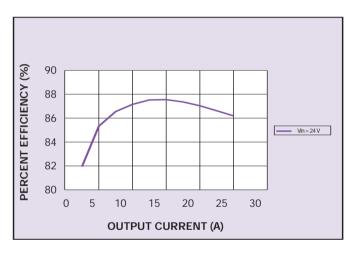
NEW Product



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Figure 7 - Typical Efficiency vs. Output Current - RFB350-48S28Y

Figure 8 - Typical Efficiency vs. Output Current - RFB350-48S12Y



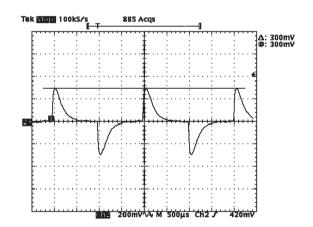


Figure 9 - Typical Efficiency vs. Output Current - RFB300-24S12Y

Figure 10 - RFB350-48S28Y Transient Response Load 6.25-9.38 A

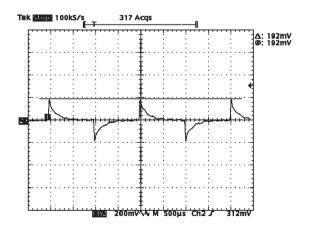


Figure 11 - RFB350-48S12Y Transient Response Load 14.5-21.75 A

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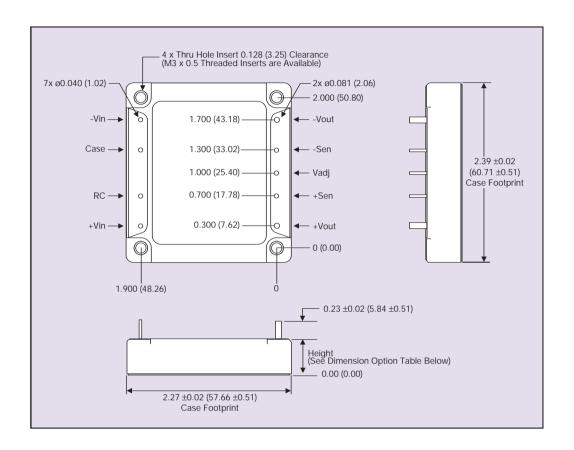
24Vin and 48Vin single output

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DIMENSION OPTIONS		
OPTION	HEIGHT	
5	0.50 ±0.02 (12.70 ±0.51)	
4	0.40 ±0.02 (10.16 ±0.51)	

PIN CONNECTIONS		
PIN NUMBER FUNCTION		
-Vin	Negative Input Terminal	
Case		
RC	ON/OFF Control Terminal	
+Vin	Positive Input Terminal	
+Vout	Positive Output Terminal	
+Sen	Positive Remote Sense	
Vadj	Output Adjustment Trim Pin	
-Sen	Negative Remote Sense	
-Vout	Negative Output Terminal	

Figure 12 - Mechanical Drawing, Dimension Options and Pin-Out Table

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