300W Railway Single Output DC-DC Converter

RSD-300 series

■ Features :

- Compliance to EN50155 and EN45545-2 railway standard
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage / Over temperature / Input reverse polarity
- 4000VDC I/O isolation
- Cooling by free air convection
- Half encapsulated
- Built-in constant current limiting circuit
- 1U low profile 40mm
- All using 105℃ long life electrolytic capacitors
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

CE

SPECIFICATION

MODEL			RSD-300B-5	RSD-300B-12	RSD-300B-24	RSD-300B-48	RSD-300C-5	RSD-300C-12	RSD-300C-24	RSD-300C-48
OUTPUT	DC VOLTAGE		5V	12V	24V	48V	5V	12V	24V	48V
	RATED CURRENT		42A	22.5A	11.3A	5.7A	42A	25A	12.5A	6.3A
	CURRENT RANGE		0 ~ 42A	0 ~ 22.5A	0 ~ 11.3A	0 ~ 5.7A	0 ~ 42A	0 ~ 25A	0 ~ 12.5A	0 ~ 6.3A
	RATED POWER		210W	270W	271.2W	273.6W	210W	300W	300W	302.4W
	RIPPLE & NOISE (max.) Note.2		100mVp-p	120mVp-p	150mVp-p	180mVp-p	100mVp-p	120mVp-p	150mVp-p	180mVp-p
	VOLTAGE TOLERANCE Note.3		±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
	LINE REGULATION		±0.5%	±0.3%	±0.2%	±0.5%	±0.5%	±0.3%	±0.2%	±0.5%
	LOAD REGULATION		±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME		800ms, 50ms at full load							
	HOLD UP TIME (Typ.)		B/C- type comply with S1 level @ full load, comply with S2 level @ 70% load							
INPUT	VOLTAGE RANGE	CONTINUOUS	16.8 ~ 31.2VDC				33.6 ~ 62.4VDC			
		1 SEC.	14.4 ~ 33.6VDC				28.8 ~ 67.2VDC			
	EFFICIENCY (Typ.)		89%	89.5%	90%	91.5%	90.5%	91%	91.5%	92%
	DC CURRENT (Typ.)		9.7A/24V	14.6A/24V	14.6A/24V	14.6A/24V	4.8A/48V	7.2A/48V	7.2A/48V	7.2A/48V
	INRUSH CURRENT (Typ.)		45A/24VDC				45A/48VDC			
PROTECTION	OVERLOAD		105 ~ 135% rated output power							
			Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE		5.75 ~ 7V	13.8 ~ 16.2V	27.6 ~ 32.4V	55.2 ~ 64.8V	5.75 ~ 7V	13.8 ~ 16.2V	27.6 ~ 32.4V	55.2 ~ 64.8V
			Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE		Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.		-40 ~ +55℃ (no derating) ; +70℃ @ 60% load by free air convection ; +70℃ no derating with external base plate, TX class compliance							
	WORKING HUMIDITY		5 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY		-40 ~ +85℃ , 5 ~ 95% RH							
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 55℃)							
	VIBRATION		10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes ; Mounting : compliance to IEC61373							
SAFETY & EMC (Note 4)	SAFETY STANDARDS		Meet IEC60950-1(LVD)							
	WITHSTAND VOLTAGE		I/P-O/P:4KVDC I/P-FG:2.5KVDC O/P-FG:2.5KVDC							
	ISOLATION RESISTANCE		I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH							
	EMC EMISSION		Compliance to EN55022 (CISPR22) Conduction Emission: Class A, Radiation Emission: Class B							
	EMC IMMUNITY		Compliance to EN61000-4-2,3,4,5,6,8, light industry level, criteria A							
	RAILWAY STANDARD		Meet EN50155 / IEC60571 including IEC61373 for shock & vibration, EN50121-3-2 for EMC ; EN45545-2 for fire protection							
OTHERS	MTBF		130.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION		216*97*40mm (L*W*H)							
	PACKING		1.19Kg ; 12pcs/15.3Kg/1.12CUFT							

NOTE

1. All parameters NOT specially mentioned are measured at 24,48VDC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.” (as available on http://www.meanwell.com)
5. Strongly recommended that external output capacitance should not exceed 5000uF.

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SPECIFICATION

MODEL			RSD-300D-5	RSD-300D-12	RSD-300D-24	RSD-300D-48	RSD-300E-5	RSD-300E-12	RSD-300E-24	RSD-300E-48
OUTPUT	DC VOLTAGE		5V	12V	24V	48V	5V	12V	24V	48V
	RATED CURRENT		42A	25A	12.5A	6.3A	42A	25A	12.5A	6.3A
	CURRENT RANGE		0 ~ 42A	0 ~ 25A	0 ~ 12.5A	0 ~ 6.3A	0 ~ 42A	0 ~ 25A	0 ~ 12.5A	0 ~ 6.3A
	RATED POWER		210W	300W	300W	302.4W	210W	300W	300W	302.4W
	RIPPLE & NOISE (max.) Note.2		100mVp-p	120mVp-p	150mVp-p	180mVp-p	100mVp-p	120mVp-p	150mVp-p	180mVp-p
	VOLTAGE TOLERANCE Note.3		±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
	LINE REGULATION		±0.5%	±0.2%	±0.2%	±0.5%	±0.5%	±0.3%	±0.2%	±0.5%
	LOAD REGULATION		±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME		800ms, 50ms at full load							
	HOLD UP TIME (Typ.)		D-type and E-5 comply with S2 level @ full load; other E- type comply with S1 level @ full load, comply with S2 level @ 70% load							
INPUT	VOLTAGE RANGE	CONTINUOUS	67.2 ~ 143VDC				25.2 ~ 46.8VDC			
		1 SEC.	57.6 ~ 154VDC				21.6 ~ 50.4VDC			
	EFFICIENCY (Typ.)		90%	91.5%	91.5%	91.5%	88%	90%	91%	91%
	DC CURRENT (Typ.)		2.1A/110V	3.1A/110V	3.1A/110V	3.1A/110V	6.5A/36V	9.2A/36V	9.2A/36V	9.2A/36V
	INRUSH CURRENT (Typ.)		45A/110VDC				45A/36VDC			
PROTECTION	OVERLOAD		105 ~ 135% rated output power							
			Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE		5.75 ~ 7V	13.8 ~ 16.2V	27.6 ~ 32.4V	55.2 ~ 64.8V	5.75 ~ 7V	13.8 ~ 16.2V	27.6 ~ 32.4V	55.2 ~ 64.8V
			Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE		Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.		-40 ~ +55℃ (no derating) ; +70℃ @ 60% load by free air convection ; +70℃ no derating with external base plate, TX class compliance							
	WORKING HUMIDITY		5 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY		-40 ~ +85℃ , 5 ~ 95% RH							
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 55℃)							
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OTHERS	MTBF		130.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION		216*97*40mm (L*W*H)							
	PACKING		1.19Kg ; 12pcs/15.3Kg/1.12CUFT							

NOTE

1. All parameters NOT specially mentioned are measured at 36,110VDC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.” (as available on http://www.meanwell.com)
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