

## Ratings, Characteristics, and Functions

Item	Power rating Output voltage	15 W				
		5 V	12 V	15 V	24 V	
Efficiency *	115 VAC input	80% typ.	84% typ.	84% typ.	85% typ.	
	230 VAC input	82% typ.	85% typ.	86% typ.	87% typ.	
Input	Voltage range *					
	Frequency *					
	Current *	115 VAC input	0.3 A typ.			
		230 VAC input	0.19 A typ.			
	Power factor					
	Leakage current	115 VAC input	0.05 mA	0.05 mA	0.05 mA	0.05 mA
		230 VAC input	0.10 mA	0.10 mA	0.10 mA	0.10 mA
Inrush current * (for a cold start at 25°)	115 VAC input	16 A typ.				
	230 VAC input	32 A typ.				
Output	Rated Output Current		3 A	1.3 A	1 A	0.7 A
	Voltage adjustment range *		-10% to 10% (with V. ADJ)			
	Ripple & Noise voltage *	100 to 240 VAC input	30 mVp-p max.	30 mVp-p max.	40 mVp-p max.	30 mVp-p max.
	Input variation influence *		0.5% max.			
	Load variation influence *		1.0% max.			
	Temperature variation influence	100 to 240 VAC input	0.03%/°C max.			
	Startup time *	115 VAC input	490 ms typ.	500 ms typ.	470 ms typ.	480 ms typ.
		230 VAC input	470 ms typ.	480 ms typ.	450 ms typ.	460 ms typ.
	Hold time *	115 VAC input	14 ms typ.	16 ms typ.	18 ms typ.	15 ms typ.
		230 VAC input	83 ms typ.	87 ms typ.	92 ms typ.	79 ms typ.
Additional functions	Overload protection		Yes, automatic reset			
	Overvoltage protection *		Yes, 115% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again)			
	Overheat protection		No			
	Series operation		Yes (For up to 2 Power Supplies, external diodes are required.)			
	Parallel operation		No (However, backup operation is possible, external diodes are required.)			
	Remote sensing		No			
	Remote control		No			
Output indicator		Yes (LED: Green)				
Insulation	Withstand voltage		3 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA 2 kVAC for 1 min. (between all input terminals and PE terminals) current cutoff 20 mA 1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA			
	Insulation resistance		100 MΩ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC			
Environment	Ambient operating temperature		-20 to 60°C (Derating is required according to the temperature. Refer to <i>Derating Curves</i> on page 17.) (with no condensation or icing)			
	Storage temperature		-40 to 85°C (with no condensation or icing)			
	Ambient operating humidity		20% to 90% (Storage humidity: 10% to 95%)			
	Vibration resistance		10 to 55 Hz, 0.375-mm half amplitude for 2 h each in X, Y, and Z directions 10 to 500 Hz, 0.26-mm half amplitude for 1 h each in X, Y, and Z directions			
	Shock resistance		150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, ±Z directions			
Reliability	MTBF		135,000 hrs min.			
	Life expectancy *		10 years min.			
Construction	Dimensions (W×H×D)		Refer to <i>Dimensions</i> on page 23.			
	Weight		150 g max.			
	Cooling fan		No			
	Degree of protection		---			
Standards	Harmonic current emissions		Conforms to EN 61000-3-2, GB17625.1			
	EMI	Conducted Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B, GB9254			
		Radiated Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B, GB9254			
	EMS		Conforms to EN 61204-3 high severity levels			
	Safety Standards		Approved Standards UL : cURus UL 60950-1 (Recognition) OVC II Pol2 CSA: cURus C22.2 No60950-1 CCC: GB4943 Conformed Standards EN: EN 60950-1 OVC II Pol2			
	Marine Standards		No			
	SEMI		No			

\* Refer to *Conditions* on page 12.

Item	Power rating Output voltage	25 W				
		5 V	12 V	15 V	24 V	
Efficiency *	115 VAC input	80% typ.	84% typ.	85% typ.	86% typ.	
	230 VAC input	82% typ.	86% typ.	88% typ.	88% typ.	
Input	Voltage range *	Single phase 85 to 264 VAC, 120 to 370 VDC (The L terminal for the DC input is the positive side and safety standards do not apply.) (Derating is required according to the input voltage. Refer to <i>Derating Curves</i> on page 18.)				
	Frequency *	50 /60 Hz (47 to 450 Hz)				
	Current *	115 VAC input	0.49 A typ.			
		230 VAC input	0.3 A typ.			
	Power factor	---				
	Leakage current	115 VAC input	0.10 mA	0.10 mA	0.10 mA	0.10 mA
		230 VAC input	0.20 mA	0.20 mA	0.20 mA	0.20 mA
Inrush current * (for a cold start at 25°)	115 VAC input	16 A typ.				
	230 VAC input	32 A typ.				
Output	Rated Output Current	5 A	2.1 A	1.7 A	1.1 A	
	Voltage adjustment range *	-10% to 10% (with V. ADJ)				
	Ripple & Noise voltage *	100 to 240 VAC input	20 mVp-p max.	20 mVp-p max.	30 mVp-p max.	40 mVp-p max.
	Input variation influence *	0.5% max.				
	Load variation influence *	1.0% max.				
	Temperature variation influence	100 to 240 VAC input	0.03%/°C max.			
	Startup time *	115 VAC input	390 ms typ.	340 ms typ.	400 ms typ.	360 ms typ.
		230 VAC input	360 ms typ.	350 ms typ.	400 ms typ.	360 ms typ.
	Hold time *	115 VAC input	17 ms typ.	22 ms typ.	23 ms typ.	21 ms typ.
230 VAC input		103 ms typ.	113 ms typ.	117 ms typ.	112 ms typ.	
Additional functions	Overload protection	Yes, automatic reset				
	Overvoltage protection *	Yes, 115% or higher of rated output voltage, power shut off (shut off the input voltage and turn on the input again)				
	Overheat protection	No				
	Series operation	Yes (For up to 2 Power Supplies, external diodes are required.)				
	Parallel operation	No (However, backup operation is possible, external diodes are required.)				
	Remote sensing	No				
	Remote control	No				
Output indicator	Yes (LED: Green)					
Insulation	Withstand voltage	3 kVAC for 1 min. (between all input terminals and output terminals) current cutoff 20 mA 2 kVAC for 1 min. (between all input terminals and PE terminals) current cutoff 20 mA 1 kVAC for 1 min. (between all output terminals and PE terminals) current cutoff 20 mA				
	Insulation resistance	100 MΩ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC				
Environment	Ambient operating temperature	-20 to 60°C (Derating is required according to the temperature. Refer to <i>Derating Curves</i> on page 17.) (with no condensation or icing)				
	Storage temperature	-40 to 85°C (with no condensation or icing)				
	Ambient operating humidity	20% to 90% (Storage humidity: 10% to 95%)				
	Vibration resistance	10 to 55 Hz, 0.375-mm half amplitude for 2 h each in X, Y, and Z directions 10 to 500 Hz, 0.26-mm half amplitude for 1 h each in X, Y, and Z directions				
	Shock resistance	150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, ±Z directions				
Reliability	MTBF	135,000 hrs min.				
	Life expectancy *	10 years min.				
Construction	Dimensions (W×H×D)	Refer to <i>Dimensions</i> on pages 20 and 23.				
	Weight	250 g max.				
	Cooling fan	No				
	Degree of protection	---				
Standards	Harmonic current emissions	Conforms to EN 61000-3-2, GB17625.1				
	EMI	Conducted Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B, GB9254			
		Radiated Emissions	Conforms to EN 61204-3 Class B, EN 55011 Class B, GB9254			
	EMS	Conforms to EN 61204-3 high severity levels				
	Safety Standards	Approved Standards UL : cURus UL 60950-1 (Recognition) OVC II Pol2 CSA: cURus C22.2 No60950-1 CCC: GB4943 Conformed Standards EN: EN 60950-1 OVC II Pol2				
	Marine Standards	No				
SEMI	No					

\* Refer to *Conditions* on page 12.