

## KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-305VAC, 47-440 Hz
- Single and Dual Output
- Low Ripple and Noise
- Isolation Class II
- Maximum No-Load Watts < 0.3W
- CE , UL Approval
- 3-Years Product Warranty



## ELECTRICAL SPECIFICATIONS

Model No. ( Single Output )	ALC-3.3S	ALC-5S	ALC-8S	ALC-9S	ALC-12S	ALC-14S	ALC-15S	ALC-24S
Max Output Wattage (W)	6.6W	8W	8W	8W	8W	8W	8W	8W
Input	Voltage							
	90-305 VAC or 120-430 VDC							
	Frequency (Hz)							
	47-440 Hz							
	Current (Full load)							
	190 mA max. (115 VAC) / 120 mA max. (230 VAC)							
Input	Inrush Current (<500us)							
	25 A max. (115 VAC) / 45 A max. (230 VAC)							
	Leakage Current							
	0.25 mA max.							
	External Fuse (recommend)							
	2 A slow blow type							
Output	Voltage (V.DC.)							
	3.3V	5V	8V	9V	12V	14V	15V	24V
	Voltage Accuracy							
	±2%							
	Current (mA) max							
	2000	1600	1000	888	666	571	533	335
	Line Regulation (LL-HL) (typ.)							
	±0.2%							
	Load Regulation (0-100%) (typ.)							
	±3%.	±2%.	±0.5%.					
	Minimum Load							
	0%							
Maximum Capacitive Load								
17000uF	22000uF	6000uF	6000uF	3200uF	1880uF	1880uF	1760uF	
Ripple								
3.3S~15S : <100mV max (Vp-p)				24S : <150mV max (Vp-p)				
Noise								
3.3S~15S : <150mV max (Vp-p)				24S : <200mV max (Vp-p)				
Efficiency								
69%	75%	78%	79%	79%	80%	80%	81%	
Hold-up Time								
10 ms min.								
Switching Frequency								
132±8 KHz								
Protection	Over Power Protection							
	Hiccup technique, auto-recovery							
	Over Voltage Protection							
Zener diode clamp								
Short Circuit Protection								
Hiccup mode, indefinite (automatic recovery)								
Isolation	Input-Output (V.AC)							
3000V								
Environment	Operating Temperature							
	-40°C...+70°C ( with derating )							
	Storage Temperature							
	-40°C...+85°C							
	Temperature Coefficient							
±0.02%/°C								
Humidity								
95% RH								
MTBF								
>350,000 h @ 25°C (MIL-HDBK-217F)								
Physical	Dimension (L x W x H)							
	1.48 x 1.1 x 1.08 Inches (37.5 x 28.0 x 27.4 mm ) Tolerance ±0.5 mm							
	Case Material							
	Plastic resin with Fiberglass (flammability to UL 94V-0)							
Weight								
45 g								
Cooling Method								
Free air convection								
Safety	Agency Approvals							
CE, UL, cUL								
EMC	EMI (Conducted & Radiated Emission)							
	EN 55022 class B							
EMS (Noise Immunity)								
EN 55024								

1. All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

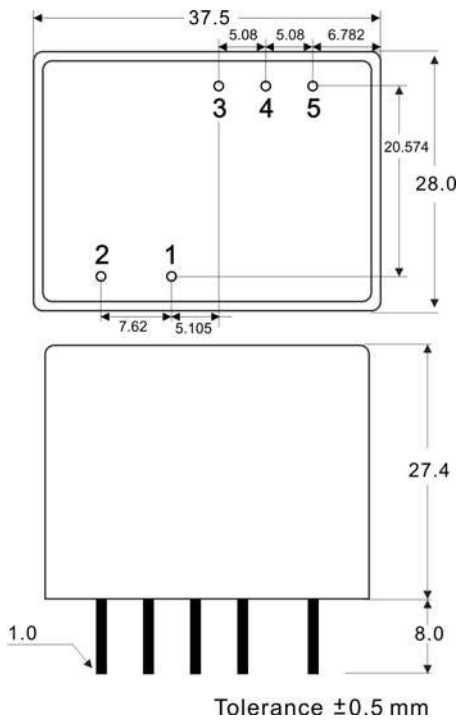
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.

**ELECTRICAL SPECIFICATIONS**

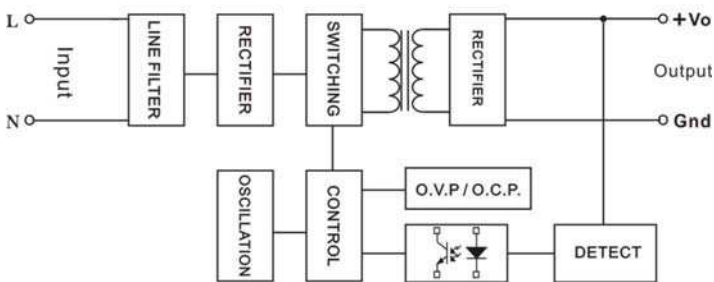
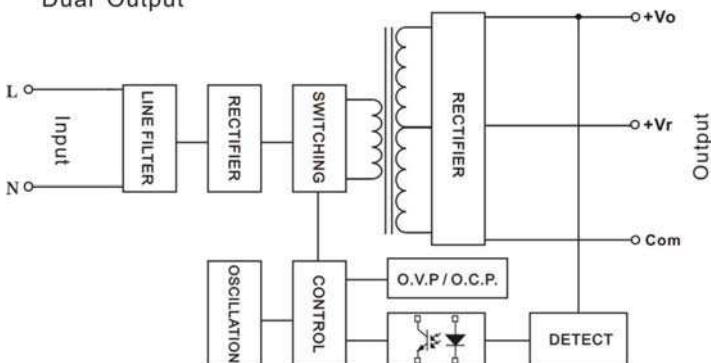
Model No. ( Dual Output )	ALC-5S3.3S	ALC-8S5S	ALC-12S5S
Max Output Wattage (W)	9W	8.5W	8.5W
Input	Voltage		
	90-305 VAC or 120-430 VDC		
	Frequency (Hz)		
	47-440 Hz		
	Current (Full load)		
	200 mA max. (115 VAC) / 125 mA max. (230 VAC)		
Inrush Current (<500us)			
25 A max. (115 VAC) / 45 A max. (230 VAC)			
Leakage Current			
0.25 mA max.			
External Fuse (recommend)			
2 A slow blow type			
Output	Voltage (V.DC.)		Vo : 5V Vr : 3.3V
	Voltage Accuracy		Vo : ±2% Vr : ±15%
	Current (mA) max		1600 / 310
	Line Regulation (LL-HL) (typ.)		Vo : ±0.2% Vr : ±3%
	Load Regulation (10-100%) (typ.)		Vo : ±0.5% Vr : ±5%
	Minimum Load		25%
	Maximum Capacitive Load		Vo : 4500uF Vr : 3800uF
	Ripple		<100mV max (Vp-p)
	Noise		<150mV max (Vp-p)
	Efficiency		73%
	Hold-up Time		10 ms min.
	Switching Frequency		132±8 KHz
	Protection	Over Power Protection	
Hiccup technique, auto-recovery			
Over Voltage Protection			
Zener diode clamp			
Short Circuit Protection			
Hiccup mode, indefinite (automatic recovery)			
Isolation	Input-Output (V.AC)		
3000V			
Environment	Operating Temperature		
	-40°C...+70°C ( with derating )		
	Storage Temperature		
	-40°C...+85°C		
	Temperature Coefficient		
±0.02%/°C			
Humidity			
95% RH			
MTBF			
>350,000 h @ 25°C (MIL-HDBK-217F)			
Physical	Dimension (L x W x H)		
	1.48 x 1.1 x 1.08 Inches (37.5 x 28.0 x 27.4 mm) Tolerance ±0.5 mm		
	Case Material		
	Plastic resin with Fiberglass (flammability to UL 94V-0)		
Weight			
45 g			
Cooling Method			
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**MECHANICAL DIMENSION ( Top View )**


PIN#	Single	Dual
1	N	N
2	L	L
3	NC	+Vr
4	+VO	+VO
5	GND	GND

**BLOCK DIAGRAM**
**Single Output**

**Dual Output**

**DERATING**
