

## ALR-20 Series, 20Watt

### FEATURES:

- ✓ Universal AC input range
- ✓ Short circuit, and over current protections
- ✓ Board in-line type installation
- ✓ High voltage isolation
- ✓ Metal case



Model	Input voltage (Vac)	Output voltage (Vdc)	Output current (mA)	Output power (W)
ALR20-5	85-265	5	4000	20
ALR20-9		9	2222	20
ALR20-12		12	1666	20
ALR20-24		24	833	20
ALR20-D5		±5	±2000	20
ALR20-D9		±9	±1111	20
ALR20-D12		±12	±833	20
ALR20-D18		±18	±555	20
ALR20-D24		±24	±416	20

Notes: Above models are default to metal case.

### ELECTRICAL

#### Input

Parameters	Symbols	Test Conditions / Comment	Min.	Typ.	Max.	Units
Input voltage	$V_{in}$	--	85	--	265	Vac
Input frequency	$F_{line}$	--	47	--	63	Hz
Efficiency	$\eta$	Full voltage, full load	--	80	--	%

#### Output

Output voltage accuracy	--	$V_{in}=100-240Vac$	--	1	--	%
Line regulation	$V_{out-line}$	$V_{in}$ from 100Vac to 240Vac	--	0.2	--	%
Load regulation	$V_{out-load}$	20%-100% load	--	0.5	--	%

**ALR-20 Series, 20Watt**
**ELECTRICAL**
**Output**

Parameters	Symbols	Test Conditions / Comment	Min.	Typ.	Max.	Units
Ripple	$V_{ripple}$	--	--	--	120	mV
Turn-on delay time	--	--	--	1	--	S

**Protection**

Over current	Continuous Automatic Recovery					
Short circuit	Continuous Automatic Recovery					

**Environment**

Storage	$T_{storage}$	Humidity: 5% RH to 95% RH	-40	--	+105	°C
Ambient operating temperature	$T_a$	--	-25	--	+65	°C
Case temperature	$T_c$	--	--	--	+90	°C
Operating relative humidity	$H_a$	Non condensing	10	--	90	%
MTBF	$T_{MTBF}$	--	--	--	200	kHrs
Dimension(LxWxH)	70x48x23.5mm					
Weight	100g					

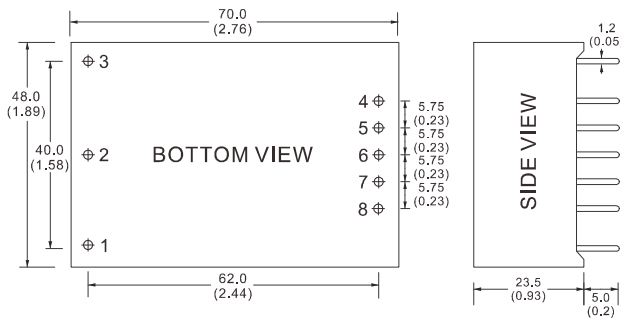
**Safety**

Isolation Voltage	Input-Output: 2500Vac $\leq$ 1.5mA//1min					
	Input-Case: 1500Vac $\leq$ 1.5mA//1min					
	output-Case: 1500Vac $\leq$ 1.5mA//1min					

**Notes: Unless otherwise specified, all the above parameters are measured at ambient temperature of 25°C and  $V_{in}$  = 100Vac to 240Vac.**

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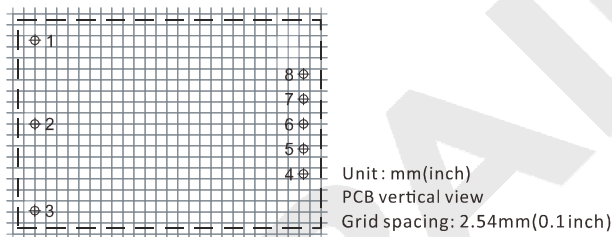
### MECHANICAL



### CONNECTION

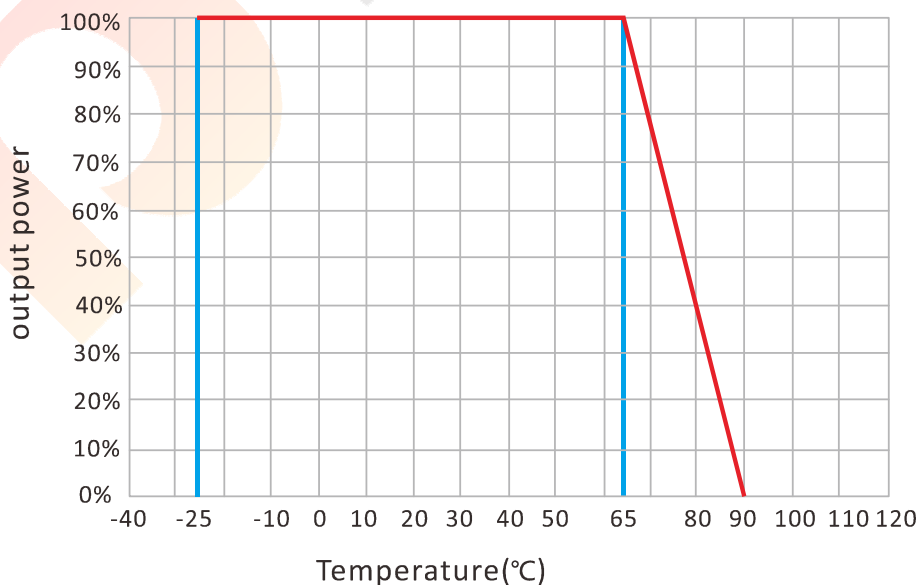
PIN #	SINGLE	DUAL
1	FG	FG
2	AC(N)	AC(N)
3	AC(L)	AC(L)
4	+Vo	+Vo1
5	No Pin	No Pin
6	No Pin	COM
7	No Pin	No Pin
8	GND	-Vo2

### LAYOUT



Note: Unit is mm(inch).

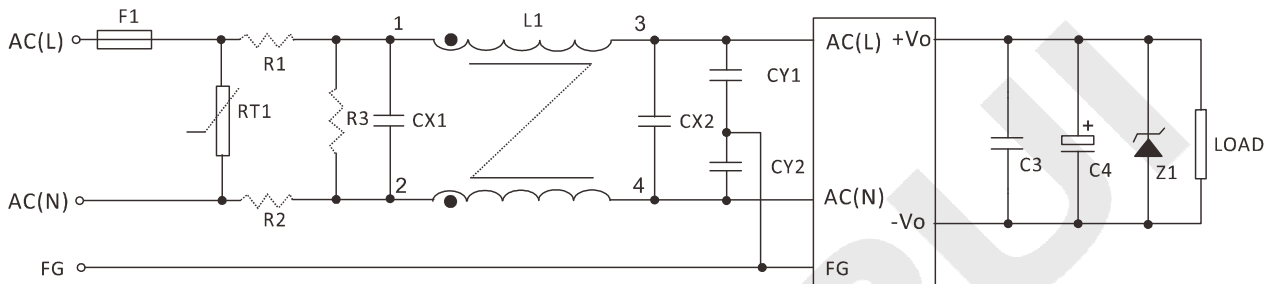
### ELECTRICAL CURVE



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NOTE

RECOMMENDED TEST AND APPLICATION CIRCUIT



EMC RECOMMENDED APPLICATION CIRCUIT

	5VDC	9VDC	12VDC	24VDC
F1			T2A/250V	
R1, R2			2Ω/2W(or NTC 10D-9)	
R3			1MΩ/2W	
L1			L=3-10mH,I=0.2-0.5A	
CX1, CX2			0.15-1μF/300Vac	
CY1, CY2			102K/400Vac	
C3			1μF/50V	
C4	470uF/16V	120uF/25V	120uF/25V	100uF/35V
Z1	P6KE6.8A	P6KE16A	P6KE20A	P6KE33A