

**MFC15 SERIES**
**15 Watts**
**KEY FEATURES**

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC
- Regulated Output
- Low Ripple and Noise
- <0.1W No Load Input Power
- Isolation Class II
- Small Size
- CE, CB, UL, cUL Approvals
- 3-Year Product Warranty


**ELECTRICAL SPECIFICATIONS**

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

Model No.	MFC15-5S	MFC15-9S	MFC15-12S	MFC15-15S	MFC15-24S	
Max Output Wattage (W)	15W					
Input	Voltage					
	90-264 VAC or 120-370 VDC, " N " to DC " + " ; " L " to DC " - "					
	Frequency (Hz)					
	47-440 Hz					
	Current (Full load)					
	385 mA max. (115 VAC) / 250 mA max. (230 VAC)					
Input	Inrush current (<2ms,Cold Start)					
	20 A max. (115 VAC) / 40 A max. (230 VAC)					
	Leakage Current					
	< 0.1mA / 264 VAC (Touch Current)					
	External fuse (recommend)					
	3.15 A slow blow type					
Output	Voltage (V.DC.)					
	5V	9V	12V	15V	24V	
	Voltage Accuracy					
	±2%					
	Current (mA) max					
	3000	1666	1250	1000	625	
	Maximum Capacitive Load (at 230 VAC)					
	7000uF	5000uF	1500uF	1000uF	470uF	
	Line Regulation (LL-HL) (typ.)					
	±0.5%					
Output	Load Regulation (5-100%) (typ.)					
	±1%.					
	Ripple (Full load) (Note 1)		75mV max (Vp-p)			1% of Vout
	Noise (Full load) (Note 1)		120mV max (Vp-p)			1% of Vout
	Efficiency (at 230 VAC)					
	79%	80%	84%	84%	85%	
	Hold-up Time(typ)					
	15 ms (115VAC) / 56ms (230VAC)					
	Protection	Over Power Protection				
		Hiccup technique, auto-recovery				
Over Voltage Protection						
Zener diode clamp						
Protection	Short Circuit Protection					
	Hiccup mode, indefinite (automatic recovery)					
	Isolation					
Input-Output (V.AC)						
4000V						
Environment	Operating Temperature					
	-40°C...+80°C (with derating)					
	Storage Temperature					
	-40°C...+90°C					
	Max Case Operating Temperature					
	Under 115 VAC 83°C , others 90°C					
	Temperature Coefficient					
	±0.05%/°C					
Environment	Altitude During Operation					
	5000m					
	Humidity					
	up to 95% RH					
	MTBF					
	>350,000 h @ 25°C (MIL-HDBK-217F)					
	Atmospheric Pressure					
	540 hPa to 1060 hPa					
Physical	Dimensions (L x W x H)					
	2.07 x 1.08 x 0.93 Inches ( 52.5 x 27.5 x 23.5 mm ) Tolerance ±0.5 mm					
	Case Material					
	Plastic resin (flammability to UL 94V-0)					
Physical	Weight					
	60 g					
Physical	Cooling Method					
	Free air convection					

## ELECTRICAL SPECIFICATIONS

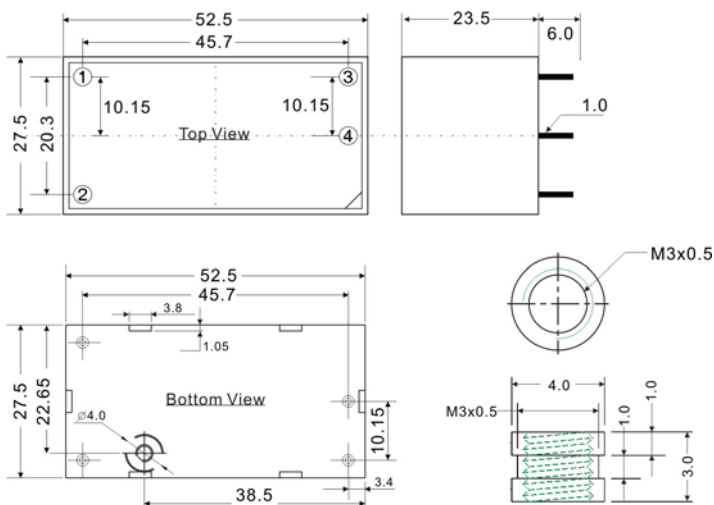
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.	MFC15-5S	MFC15-9S	MFC15-12S	MFC15-15S	MFC15-24S
Safety	Approval cUL / UL Standard: UL 60950-1, CAN/CSA C22.2 No. 60950-1-07 ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10), CAN/CSA-C22.2 No. 60601-1 (2008), 2 x MOPP CB Standard: IEC 60950-1:2005 (2nd Edition) + Am 1:2009 + Am 2:2013 IEC 60601-1:2005 (3rd Edition) + CORR. 1 (2006) + CORR. 2 (2007) + AM1 (2012) or IEC 60601-1 (2012 reprint), 2 x MOPP				
EMC	Conducted and radiated EMI	EN55011 class B (Radiation Class A for MFC15 A2 Series)			
	EMS	EN60601-1-2 4th edition			

## NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Safety approvals cover frequency 47-63 Hz.
3. That "natural convection" is about 20LFM but is not equal to still air (0 LFM).
4. It's recommended to add Varistor 14S471K at L / N input side in parallel.

## MECHANICAL DIMENSIONS

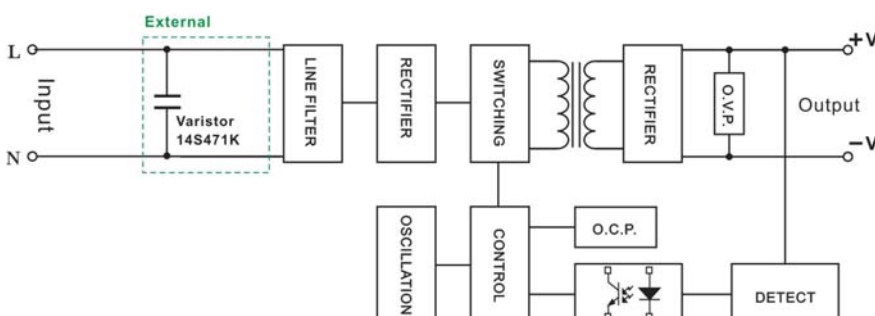


PIN#	Single
1	AC IN (L)
2	AC IN (N)
3	+DC OUT
4	-DC OUT

Maximum Torque 1 2 { 1.2 1 } ( k g f . c m { N.m } )

## BLOCK DIAGRAM

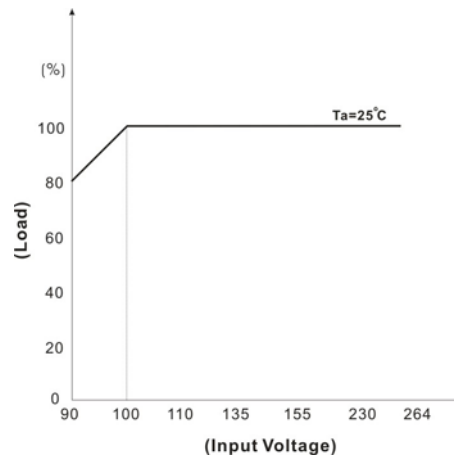
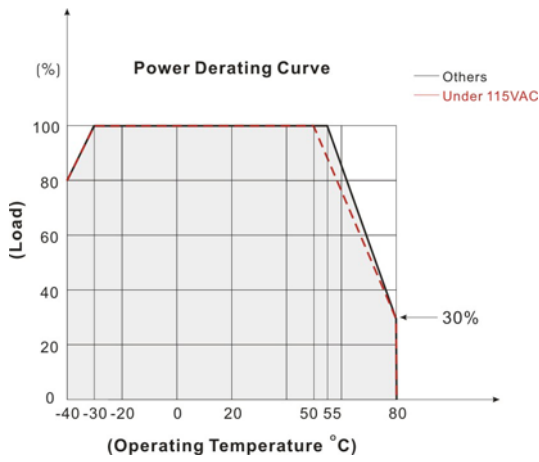
Single Output



**MFC15 SERIES**

**15 Watts**

**DERATING**



**SCREW TERMINAL**

**MFC15-A2**



PIN#	Single
1	NO CONNECT
2	AC IN (L)
3	AC IN (N)
4	NO CONNECT
5	+DC OUT
6	-DC OUT
7	NO CONNECT
8	NO CONNECT

