MFC15 Series

15 W Medical Switching Power Module for PCB Mounting

CoolPower Solutions

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- Low Standby <0.1W
- Small Size
- Screw Terminal and Din Rail Kit For Optional
- CE, CB, UL, cUL Approvals
- 3-Year Product Warranty



E308218
(Pending)

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)				
	Leakage Current	< 0.1mA / 264 VAC (Touch Current)				
	Inrush Current (<2ms,Cold Start)	20 A max. (115 VAC) / 40 A max. (230 VAC)				
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
	Minimum Load	0%				
	Line Regulation (LL-HL) (typ.)	±0.5%				
	Load Regulation (5-100%) (typ.)	±1%.				
	Ripple (Full load)	75mV max (Vp-p)		1% of Vout		
	Noise (Full load)	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				
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)				
Isolation	Input-Output (V.AC)	4000V				
Environment	Operating Temperature	-40°C…+80°C (Case Temperature max. +95°C)				
	Storage Temperature	-40°C…+90°C				
	Temperature Coefficient	±0.05%/°C				
	Altitude During Operation	4000m				
	Humidity	up to 95% RH				
	MTBF	>350,000 h @ 25°C (MIL-HDBK-217F)				
	Atmospheric Pressure	70 kPa to 106 kPa				
Physical	Dimension (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 with Fiberglass (flammability to UL 94V-0)				
	Weight	59 g				
	Cooling Method	Free air convection				

Cool Power Solutions Oy
Vanha Rajamäentie 173
FI-05200 Rajamäki
FINLAND

Tel: +358-9-2906 1990
Fax: +358-9-2906 1991

Email: info@cps.fi
Web: www.cps.fi

ELECTRICAL SPECIFICATIONS

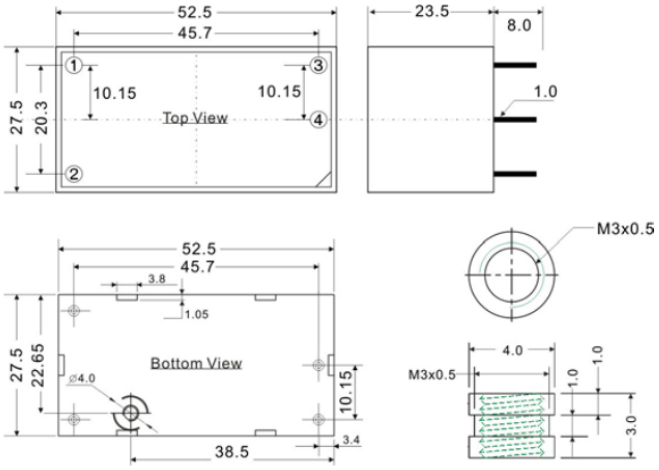
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		MFC15-5S	MFC15-9S	MFC15-12S	MFC15-15S	MFC15-24S
Safety	Approval	cUL/UL 60950-1, ANSI/AAMI ES 60601-1: 2005, 1st Edition and CAN/CSA-C22.2 No. 60601-1:08, 2nd Edition, 2XMOPP (Pending)				
EMC	Conducted and radiated EMI	EN55011 (Pending)				
	ESD	EN61000-4-2 air ± 8kV , Contact ± 4Kv (Pending)				
	Radiated Immunity	EN61000-4-3 10V/m (Pending)				
	Fast Transient	EN61000-4-4 ± 2kV (Pending)				
	Surge	EN61000-4-5 ±1kV (Pending)				
	Conducted Immunity	EN61000-4-6 10Vrms (Pending)				
	PFMF	EN61000-4-8 30A/m (Pending)				
	Dips	EN61000-4-11 30% 10ms (Pending)				
	Interruption	EN61000-4-11 >95% 5000ms (Pending)				

NOTE

1. **This product is not designed for use in critical life support systems, equipment used in hazardous environment, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet.**
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
3. Safety approvals cover frequency 47-63 Hz.
4. That “natural convection” is about 20LFM but is not equal to still air (0 LFM).
5. It's recommended to add Varistor 14S471K at L / N input side in parallel.
6. Please refer to our PDF file "AC-DC Application" on our website: www.archcorp.com.tw

MECHANICAL DIMENSION



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

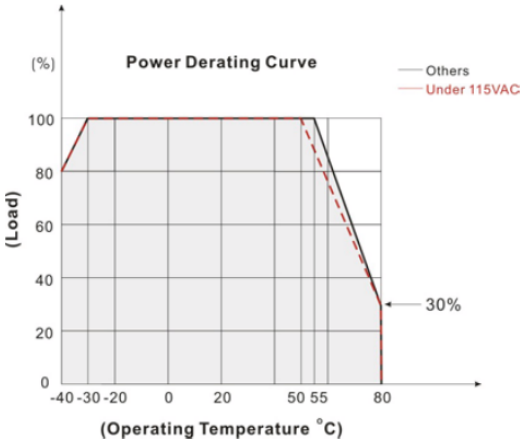
Maximum Torque 12{1.21}(kgf.cm{N.m})

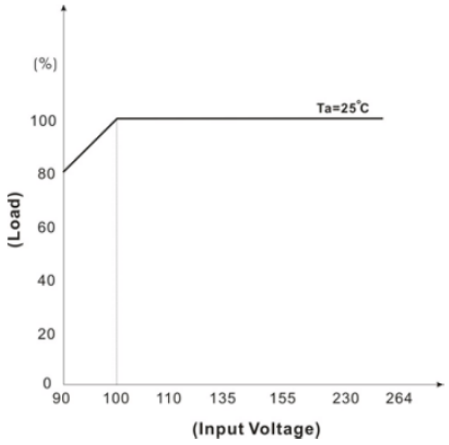
Cool Power Solutions Oy
Vanha Rajamäentie 173
FI-05200 Rajamäki
FINLAND

Tel: +358-9-2906 1990
Fax: +358-9-2906 1991

Email: info@cps.fi
Web: www.cps.fi

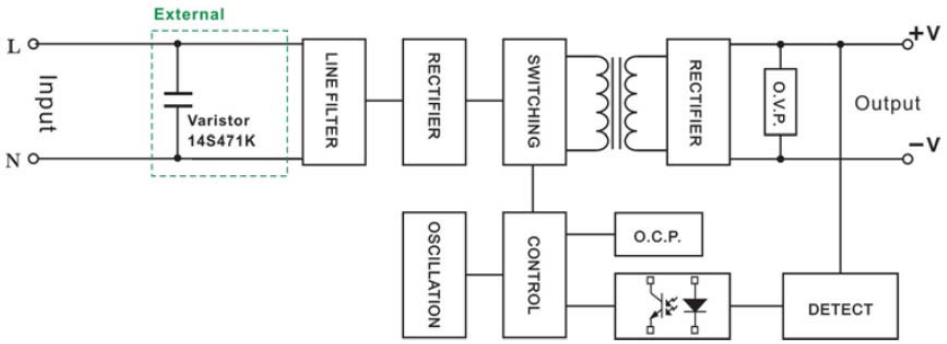
DERATING





BLOCK DIAGRAM

Single Output



Cool Power Solutions Oy
Vanha Rajamäentie 173
FI-05200 Rajamäki
FINLAND

Tel: +358-9-2906 1990
Fax: +358-9-2906 1991

Email: info@cps.fi
Web: www.cps.fi

MFC15 Series

15 W Medical Switching Power Module for PCB Mounting

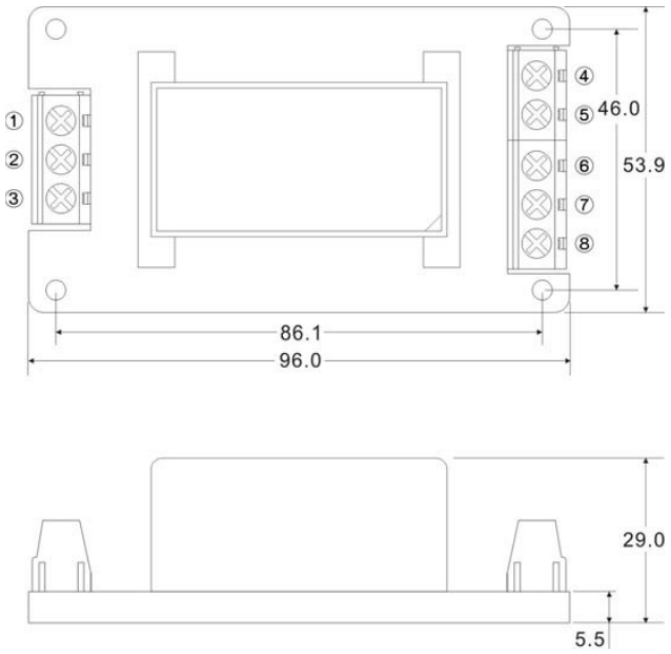
CoolPower Solutions

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

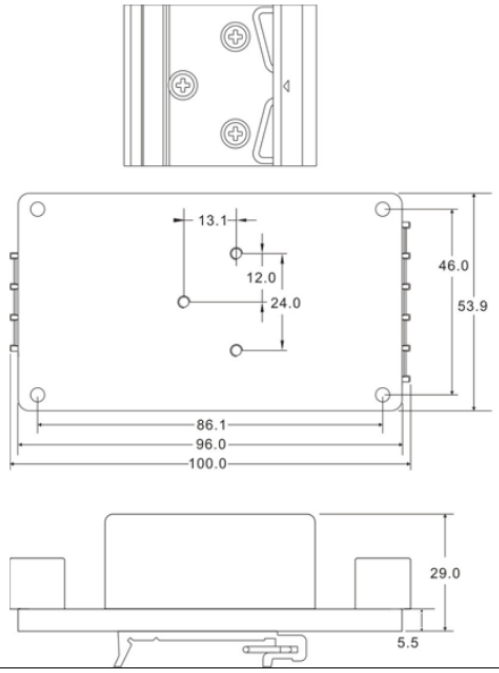


Din Rail Kit

MFC15-A2-DN







Cool Power Solutions Oy
Vanha Rajamäentie 173
FI-05200 Rajamäki
FINLAND

Tel: +358-9-2906 1990
Fax: +358-9-2906 1991

Email: info@cps.fi
Web: www.cps.fi