



MTM POWER

PMA/PCMA30

Primary Switcher 30 Watts



- **Wide Input Range for Worldwide Application**
- **VDE, UL and cUL Approved**
- **Prepared for Class 1/2**
- **CE Conformity**



Description

The primary switched MTM Power Modules PMA/PCMA30 have been designed as a universal compact power supply with AC and DC wide input ranges for worldwide application and allow an efficient, cost-saving solution for different tasks where low and medium-ranged power is needed. Dimensions of the case are 90,5 x 65,5 x 33,5 mm (PMA30) and 120,0 x 65,0 x 33,0 mm (PCMA30). The power supplies are vacuum encapsulated, prepared for applications in Class 1 and/or 2 and comply to the Low Voltage Directives as well as to the up-to-date EN standards as regards CE conformity. Further features are rugged design, SMD-technology, automatic 100 % final test and 100-%-burn-in-test. MTM Power Modules are VDE, UL and cUL approved. The series PMA/PCMA30 offers 30 W constant output wattage, is short circuit protected, needs no ground load and is designed for PCB mounting (PMA) or chassis mounting (PCMA).

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30 Watt

PMA/PCMA30

Technical Data Input

Parameter	Conditions	Data
U_{in}	Nominal Input Voltage	EN 60 950 / UL 1950
U_{in}	Input Voltage Range	100...240 V _{AC} 100...353 V _{DC}
f_{in}	Input Frequency	85...264 V _{AC} 100...375 V _{DC} (UL: 353 V _{DC})
	EMI/RFI	50...400 Hz
f_{sw}	Switching Frequency	EN 55 011/B, EN 55 022/B
		90 kHz typ

Technical Data Output

Parameter	Conditions	Data
ΔU_{out}	Output Voltage Accuracy	$U_{in} = 230 V_{AC}$
		$U_1 \leq \pm 1 \%$; $U_{2/3} \leq \pm 3 \%$
ΔU_{LF}	Ripple	$U_{in} = \text{min}$, BW: 1 MHz
ΔU_{HF}	Noise	$U_{in} = \text{min}$, BW: 20 MHz
	Line Regulation	$U_{in} = \text{min/max}$
	Load Regulation	$I_{out} = 10...90...10 \%$ $U_{in} = 230 V_{AC}$
I_{max}	Current Limiting	$\leq \pm 0,5 \%$
t_R	Transient Response Time	$105...130 \%$ I_{nenn}
ε	Temperature Coefficient	10...90...10 %
P_{over}	Overload Protection / Short Circuit	$T_A = -25...+65 \text{ }^\circ\text{C}$
	Derating single / dual / triple	0,01 % / K
		continuous
		2 / 3 / 5 % / K max

Technical Data General

Parameter	Conditions	Data
$U_{isol\ p/s}$	Isolation (prim./sec.)	3,3 kV _{AC}
$U_{isol\ s/s}$	Isolation	Dual asym. + Triple-Ausgang / output
R_{isol}	Isolation Resistance	500 V _{AC}
I_{leak}	Leakage Current (prim./sec.)	>1 G Ω
SELV	Protection Class	$U_{in} = 230 V_{AC}$ $f = 50 \text{ Hz}$
t_h	Hold-up Time	prepared for the use in devices with Class 2
T_A	Ambient Temperature	>50 ms
	Surface Temperature	$U_{in} = 230 V_{AC}$
T_s	Storage Temperature	-25...+65 °C
	Self-Heating at Full Load	96 °C max
		surface center of module
		-45...+85 °C
		45 K max

Alle Werte gemessen bei Vollast und einer Umgebungstemperatur von 25 °C (wenn nicht anders spezifiziert).
All data measured at full load and ambient temperature of 25 °C (unless otherwise specified).

PMA/PCMA30

30 Watt

Technical Data General

Parameter		Conditions	Data
	Immunity		EN 61 000-4-2, -4-3, -4-4, -4-5, -4-6, -4-11
	Cooling		convection
	Weight	PMA / PCMA	340 g / 380 g
	Case / Potting Material		UL94-V0
	Diameter of Flying Leads	PCMA	2,5 mm ² max
	Power Supply Class	nach / acc. to CSA	Level 3

Output Configurations

Type PCB Mounting	Type Chassis Mounting	Outputs						Ground Load at U1 (A)	Efficiency %
		U1		U2		U3			
		V _{DC}	A	V _{DC}	A	V _{DC}	A		
PMA30 S3,3	PCMA30 S3,3	3,3	6,0					0	≥62
PMA30 S05	PCMA30 S05	5	6,0					0	≥70
PMA30 S12	PCMA30 S12	12	2,5					0	≥75
PMA30 S15	PCMA30 S15	15	2,0					0	≥75
PMA30 S24	PCMA30 S24	24	1,3					0	≥77
PMA30 S48	PCMA30 S48	48	0,6					0	≥77
PMA30 D12	PCMA30 D12	12	1,2	-12	1,2			0	≥68
PMA30 D15	PCMA30 D15	15	1,0	-15	1,0			0	≥68
PMA30 D512	PCMA30 D512	5	3,0			12	1,2	0,3	≥68
PMA30 D515	PCMA30 D515	5	3,0			15	1,0	0,3	≥68
PMA30 D524	PCMA30 D524	5	3,0			24	0,6	0,3	≥68
PMA30 T512	PCMA30 T512	5	3,0	-12	0,6	12	0,6	0,3	≥78
PMA30 T515	PCMA30 T515	5	3,0	-15	0,5	15	0,5	0,3	≥78

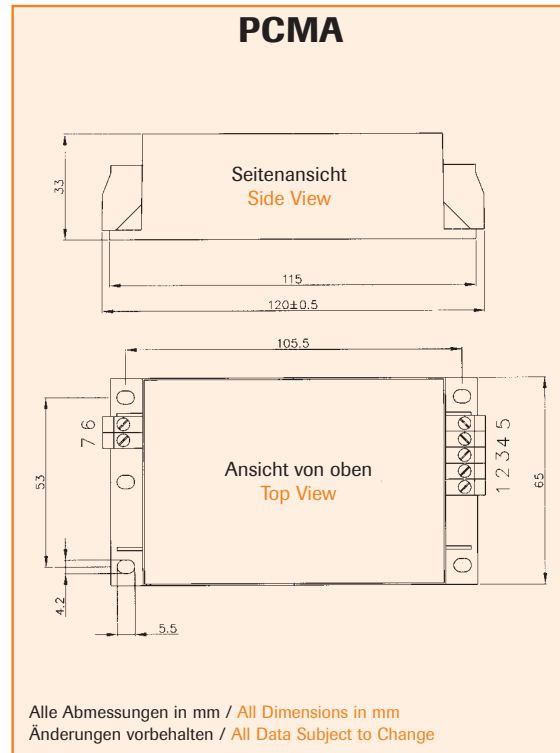
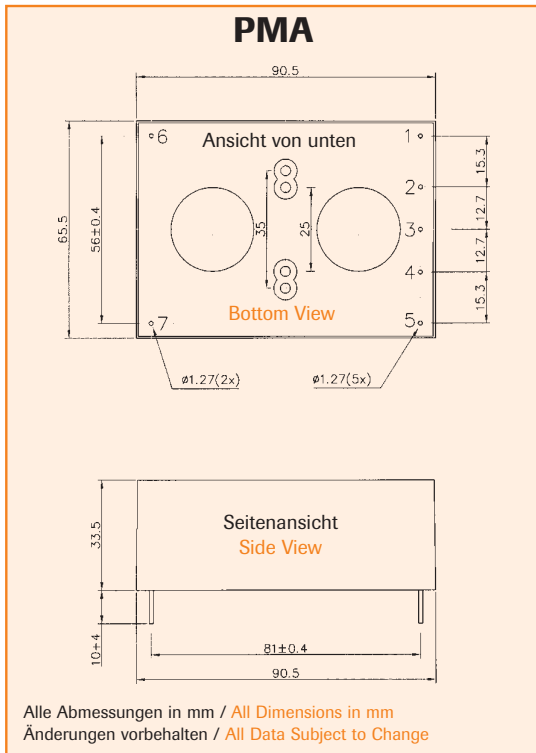
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30 Watt

PMA/PCMA30

Dimensions



Pinning

PMA30	1	2	3	4	5	6	7
Single			GND		+U ₁	IN	IN
m. Sense		Sense GND	GND	Sense +U ₁	+U ₁	IN	IN
Dual sym	-U ₂		GND		+U ₁	IN	IN
Dual asym	GND U ₁	+U ₁		GND U ₃	+U ₃	IN	IN
Triple	-U ₂	GND U ₁	GND U _{2/3}	+U ₁	+U ₃	IN	IN

PCMA30	1	2	3	4	5	6	7
Single				GND	+U ₁	IN	IN
m. Sense		Sense +U ₁	Sense GND	GND	+U ₁	IN	IN
Dual sym			-U ₂	GND	+U ₁	IN	IN
Dual asym		GND U ₁	+U ₁	GND U ₃	+U ₃	IN	IN
Triple	-U ₂	GND U ₁	GND U _{2/3}	+U ₁	+U ₃	IN	IN

Possible Modifications

- Output Voltages
- Sense Line (Single Modules)
- Current Sharing
- Isolation up to 4 kV_{AC}
- Leakage Current <80 μ A
- Heat Sinks
- DIN-Rail Mounting Clips

Standards

- EN 60 950 / VDE 0805 (SELV)
- EN 55 011 / B, EN 55 022 / B, Gruppe 1
- EN 61 000-4-2 (ESD)
- EN 61 000-4-3 (HF-Felder / HF Fields)
- EN 61 000-4-4 (Burst)
- EN 61 000-4-5 (Surge)
- EN 61 000-4-6 (HF-Einkopplung/HF-Fields, conducted disturbances: 10 V)
- EN 61 000-4-11 (Netzeinbrüche/Line Shutdown)
- UL 1950
- CAN/CSA 22.2 950, 3. Edition
- CE-konform / CE Conformity

Application Hint

According to EN 60 950 (VDE 0805) a line fuse max. 2,0 AT should be placed in the AC line to fully interrupt AC power in case of fault.
The PMA modules should be screwed on the PCB with 2 lens screws (3,5x8). Max. depth: $\leq 7,5$ mm!
Recommended screw: Lens screw KT-S 3,5x8, cross-recessed (Part No. 2791137).