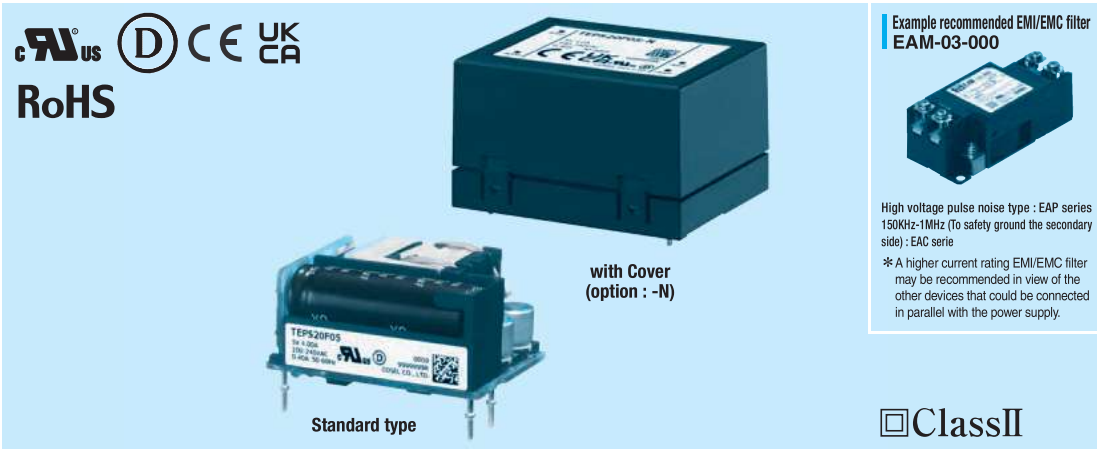
ALL PSU electronic power solutions

AC-DC Power Supplies PCB Mount Type

TEPS20F

Ordering information

TEP	S	20	F	□□	-□
①	②	③	④	⑤	⑥



Example recommended EMI/EMC filter
EAM-03-000

High voltage pulse noise type : EAP series 150KHz-1MHz (To safety ground the secondary side) : EAC serie

＊A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

①Series name
②Single output
③Output wattage
④Universal input
⑤Output voltage
⑥Optional ＊1
E2: Low leakage current
H : with output peak current (12V,24V)
N : with cover
For option details, refer to Instruction Manual 8.

This power supply is manufactured by SMD technology. The stress to PCB like twisting or bending causes the defect of the unit, so handle the unit with care.
＊Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

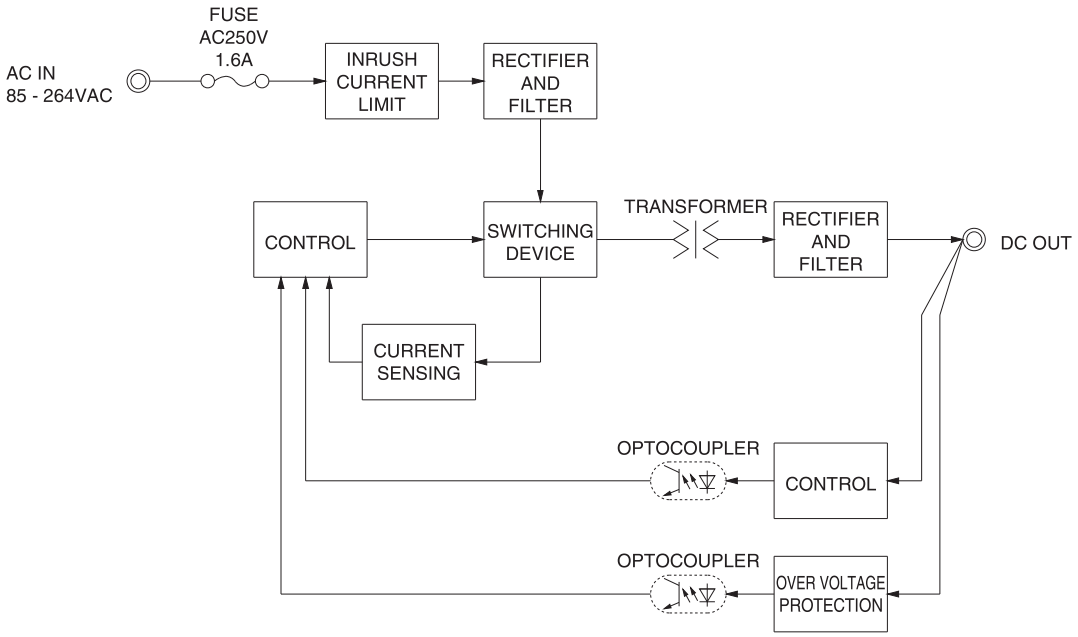
MODEL	TEPS20F05	TEPS20F12	TEPS20F12-H	TEPS20F15	TEPS20F24	TEPS20F24-H
MAX OUTPUT WATTAGE[W] ＊2	20.0	20.4	20.4 (30.0)	20.25	20.4	20.4 (30.0)
DC OUTPUT ＊2	5V 4.0A	12V 1.7A	12V 1.7 (2.5)A	15V 1.35A	24V 0.85A	24V 0.85 (1.25)A

SPECIFICATIONS

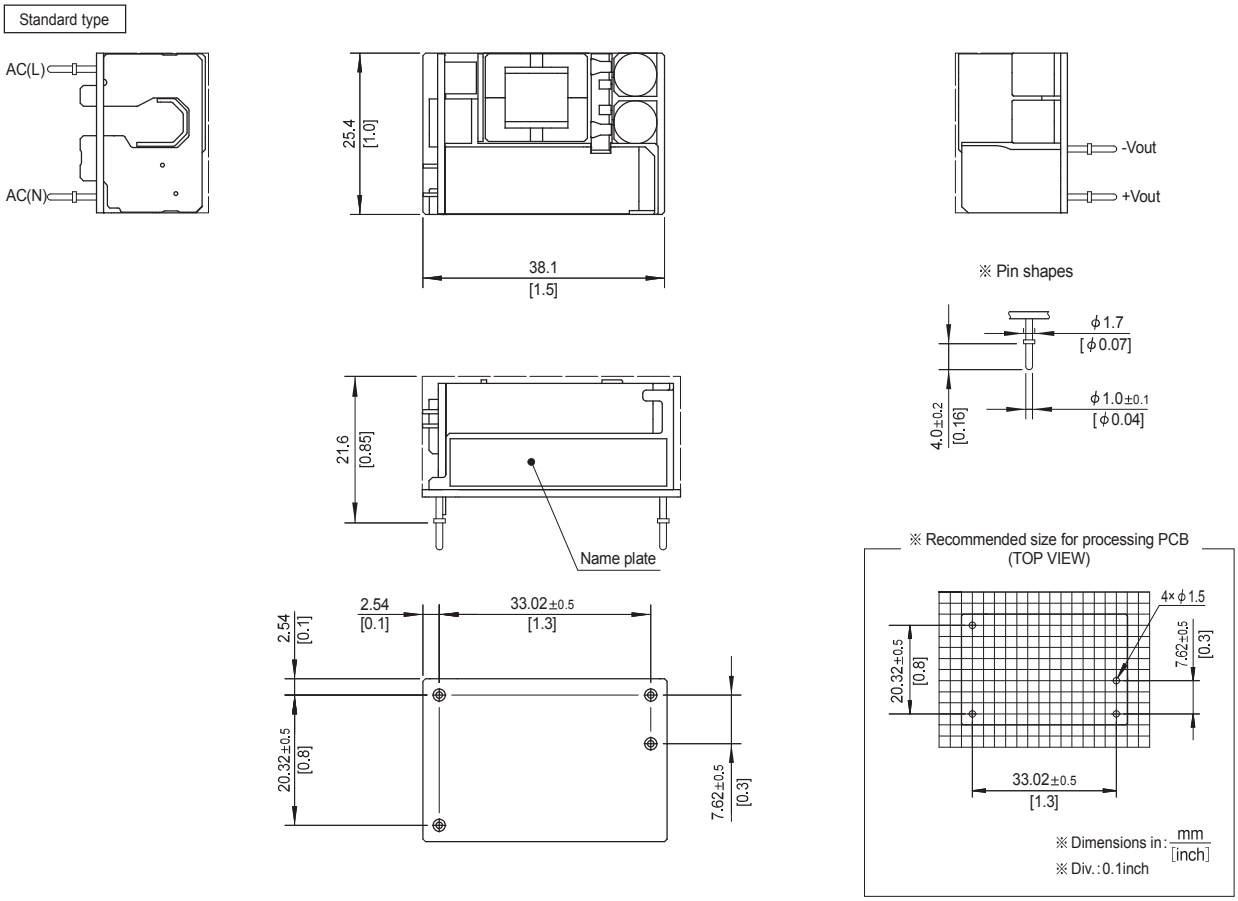
	MODEL		TEPS20F05	TEPS20F12	TEPS20F12-H	TEPS20F15	TEPS20F24	TEPS20F24-H
INPUT	VOLTAGE[VAC] ＊2		85 - 264 1 ϕ (Refer to “Derating” and Instruction Manual 3.1)					
	CURRENT[A]	ACIN 100V	0.40typ					
		ACIN 230V	0.23typ					
	FREQUENCY[Hz]		50 / 60 (45 - 440)					
	EFFICIENCY[%]	ACIN 100V	88.0typ	91.0typ	91.0typ	91.0typ	91.0typ	91.0typ
		ACIN 230V	90.0typ	92.0typ	92.0typ	92.0typ	92.0typ	92.0typ
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) Ta=25℃ at cold start					
		ACIN 230V	35typ (Io=100%) Ta=25℃ at cold start					
	LEAKAGE CURRENT[mA]		0.1max (ACIN 264V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)					
OUTPUT	VOLTAGE[V]		5	12	12	15	24	24
	CURRENT[A] ＊2		4.0	1.7	1.7 (Peak 2.5)	1.35	0.85	0.85 (Peak 1.25)
	LINE REGULATION[mV] ＊3		20max	48max	48max	60max	96max	96max
	LOAD REGULATION[mV] ＊3		40max	100max	100max	120max	150max	150max
	RIPPLE[mVp-p] ＊4	-20 to +55℃ ＊5	200max	200max	200max	200max	200max	200max
	RIPPLE NOISE[mVp-p] ＊4	-20 to +55℃ ＊5	240max	240max	240max	240max	240max	240max
	TEMPERATURE REGULATION[mV]	0 to +55℃ ＊5	50max	120max	120max	150max	240max	240max
		-20 to +55℃ ＊5	60max	160max	160max	200max	320max	320max
	DRIFT[mV] ＊6		20max	48max	48max	60max	96max	96max
	START-UP TIME[ms]		80typ (ACIN 100/230V, Io=100%)					
	HOLD-UP TIME[ms]		10typ (ACIN 100V, Io=100%) / 70typ (ACIN 230V, Io=100%)					
	OUTPUT VOLTAGE SETTING[V]		4.90 to 5.30	11.50 to 12.50	11.50 to 12.50	14.50 to 15.50	23.00 to 25.00	23.00 to 25.00
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically					
	OVERVOLTAGE PROTECTION[V]		5.75 to 7.00	13.80 to 16.80	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60
	OPERATING INDICATION		Not provided					
	REMOTE SENSING		Not provided					
ISOLATION	INPUT-OUTPUT		3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊2		-20 to +85℃, 20 - 90%RH (Non condensing), (Refer to “Derating”), 5,000m (16,500feet) max					
	STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +85℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN					
	CONDUCTED NOISE ＊7		Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part 15-B, FCC Part 18-B, VCCI-B					
	HARMONIC ATTENUATOR ＊8		Complies with IEC61000-3-2 (Class A) (No built-in power factor correction)					
OTHERS	CASE SIZE/WEIGHT		25.4×21.6×38.1mm [1.00×0.85×1.50 inches] (W×H×D) / 30g max (with cover : 45g max)					
	COOLING METHOD ＊2		Convection/Forced air (Requires external fan) (Refer to “Derating”)					

＊1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.
＊2 Derating is required. ( ) means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail.
＊3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.
＊4 This is the value that measured on measuring board with capacitor of 22 μF and 0.1 μF at 50mm from output terminal. (Refer to Instruction Manual)
＊5 5V output product, the maximum temperature of 50℃.
＊6 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
＊7 When secondary circuit will be connected to earth, the spec will be changed. (Refer to Instruction Manual 2)
＊8 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.
＊ To meet the specification, do not operate overload condition.
＊ Parallel operation is not possible.
＊ Sound noise may be emitted from the power supply depending on operating conditions.

Block diagram

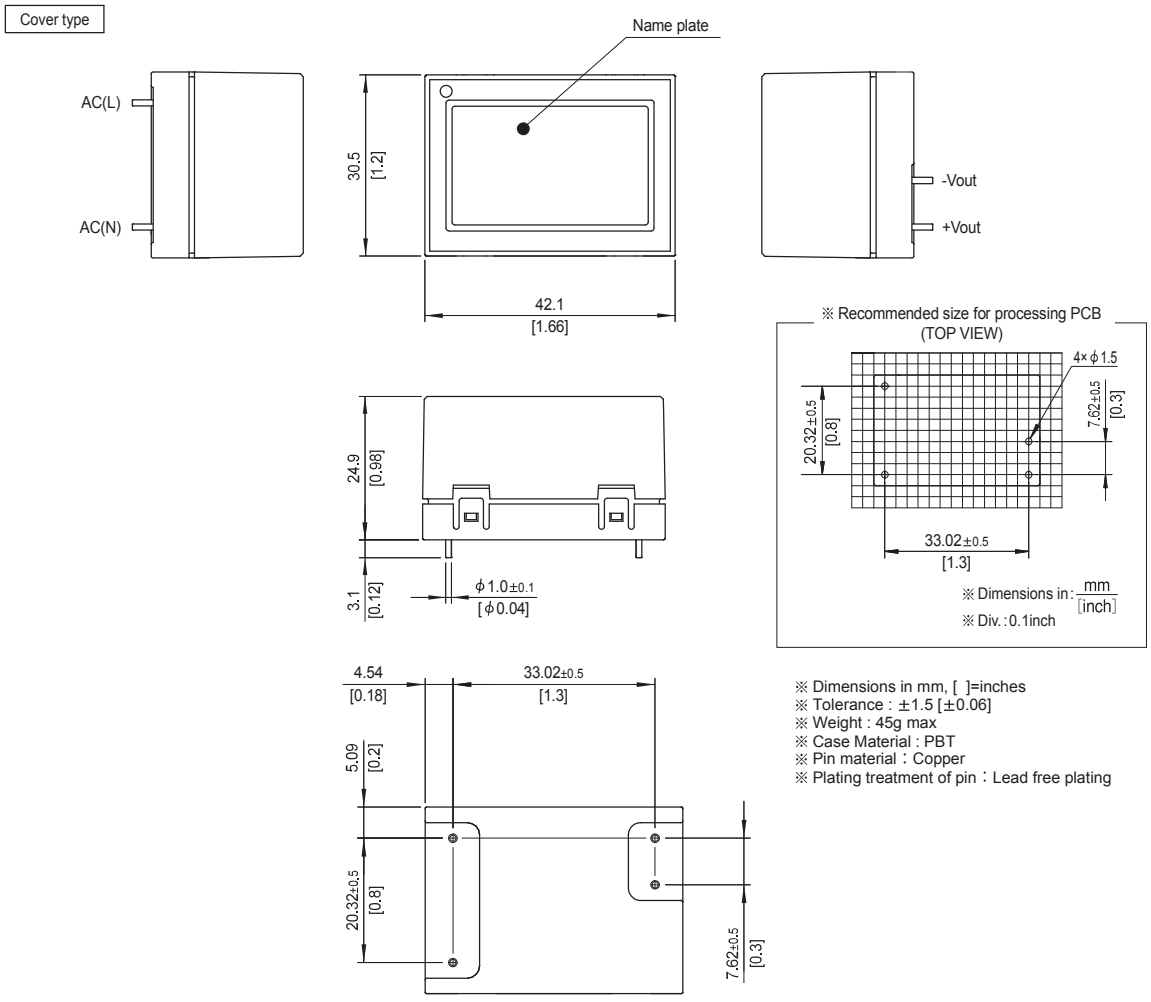


External view



※ Dimensions in mm, [ ]=inches
※ Tolerance : ±1.5 [±0.06]
※ Weight : 30g max
※ PCB Material / thickness : FR-4 / 1.1 [0.04]
※ Pin material : Copper
※ Plating treatment of pin : Lead free plating

External view



※ Dimensions in mm, [ ]=inches
※ Tolerance : ±1.5 [±0.06]
※ Weight : 45g max
※ Case Material : PBT
※ Pin material：Copper
※ Plating treatment of pin：Lead free plating

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