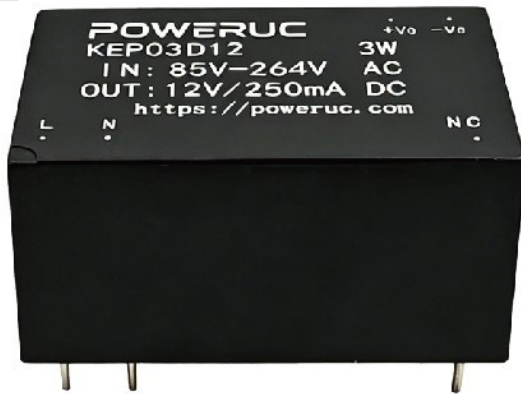




Product Features

- Input range: 85-265 VAC / 100-370 VDC / 47-400 Hz
- High reliability, low ripple noise (≤ 40 mV)
- Rated output power 3 W, output accuracy $\pm 2\%$
- Low no-load power; full-load efficiency 60%-74%
- Single isolated output; isolation withstand voltage ≥ 2500 VAC
- High quality and high reliability
- Output over-current and short-circuit protection with auto-recovery
- Operating temperature: -40°C to $+85^{\circ}\text{C}$
- Pin-compatible with the KEP05 5 W series

- The KEP03 series power supply is a compact AC/DC power module. This series is pin-compatible with the KEP05 series, facilitating power expansion. It features an input range of 85–265 VAC and 100–370 VDC, with a rated output power of 3 W, output accuracy of $\pm 2\%$, typical output ripple of 30 mV, light-load power consumption as low as 0.2 W, efficiency ranging from 60% to 74%, single-channel isolated output, isolation withstand voltage of ≥ 2500 VAC, operating temperature range of -40°C to $+85^{\circ}\text{C}$, input undervoltage protection, overcurrent protection, and self-recovering output short-circuit protection.
- This series is widely used in industries such as the Internet of Things, smart cities, instrumentation, power, industrial control, office equipment, and consumer electronics.
- When applications have stringent electromagnetic compatibility (EMC) requirements, please refer to the EMC peripheral application circuits for this series of products.

Selection Table

Model	Power	Input Voltage	Output Voltage	Output Current	Ripple (220V)	Efficiency (220V)	Max. Capacitive Load(μF)	No-load Loss (220V)
KEP03D3V3	3W	85V~265V	3.3V DC	910mA	14mV	60%	2000	0.2W
EP03D05			5V DC	600mA	18mV	65%	2000	0.2W
KEP03D09			9V DC	330mA	40mV	7%	1500	0.2W
KEP03D12			12V DC	250mA	34mV	72%	1500	0.2W
KEP03D15			15V DC	200mA	39mV	72%	1000	0.2W
KEP03D24			24V DC	125mA	19mV	74%	470	0.3W

Input Characteristics

Input voltage range	85V~265V AC
Frequency range	47Hz~400Hz
Recommended fuse	1 A slow-blow fuse
Standby power	≤ 0.3 W

Output Characteristics

Output voltage accuracy	$\leq \pm 2\%$
Line regulation	$\leq 0.5\%$
Load regulation	$\leq 1\%$
Temperature coefficient	$\leq 0.02\%/^{\circ}\text{C}$
Short-circuit protection	Long-term protection, auto-recovery
Over-current protection	$\geq 120\%$

General Characteristics

Isolation voltage	Input/output $\geq$ 2500V AC
Insulation resistance	500V DC, $\geq$ 100M Ω
Switching frequency	65 kHz (typ.)
Operating temperature	-40°C~+85°C
Storage temperature	-40°C~+105°C
Storage humidity	$\leq$ 95RH
Soldering temperature	Hand soldering: 350 C-400 C, $\leq$ 5 s
	Wave soldering: 260 C +/-5 C, 5-10 s
Cooling method	Natural convection
MTBF	200000h
Isolation capacitance	1000pF
Weight	24g

EMC Characteristics

EMI	Conducted emissions	EN55011(CISPR11) / EN55032(CISPR32 , CLASS B (external circuit required)
	Radiated emissions	EN55011(CISPR11) / EN55032(CISPR32 , CLASS B
EMS	Electrostatic discharge	IEC/EN61000-4-2
	Radiated immunity	IEC/EN61000-4-3
	Electrical fast transient/burst	IEC/EN61000-4-4 (external circuit required)
	Surge immunity	IEC/EN61000-4-5 (external circuit required)
	Conducted RF immunity	IEC/EN61000-4-6 (external circuit required)
	Voltage dips, short interruptions	IEC/EN61000-4-11

Typical Application Circuits

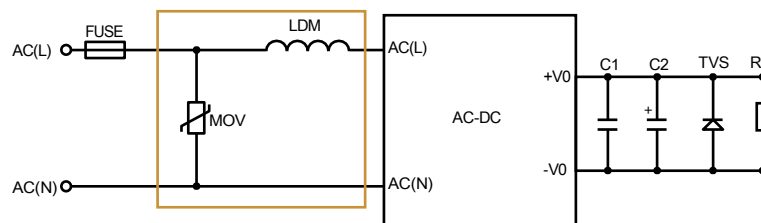


Figure 1 General application circuit (required); the differential-mode inductor may be replaced by a 3 ohm / 1 W resistor

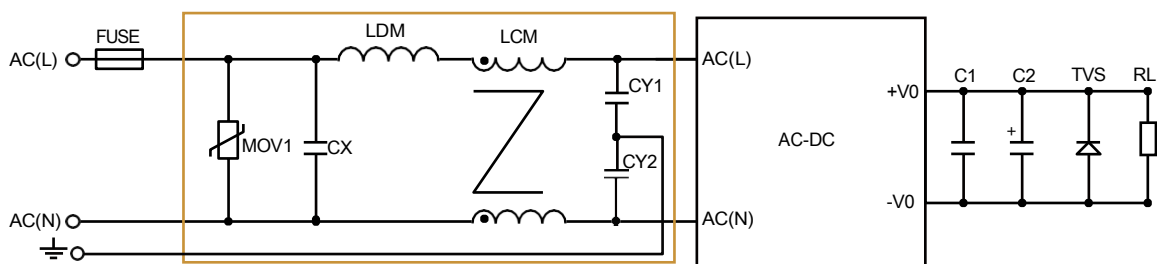
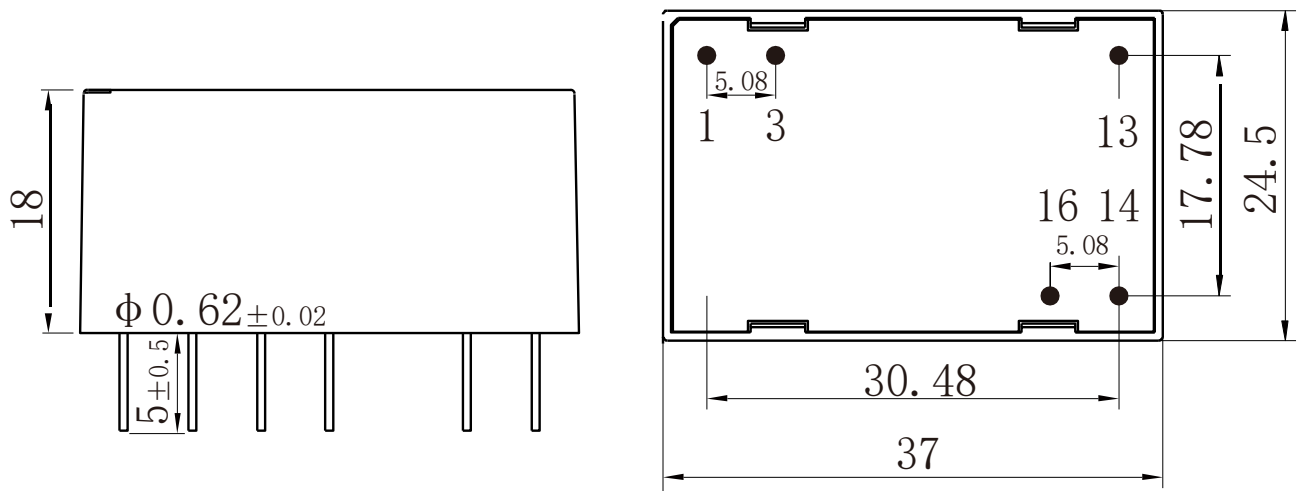


Figure 2 EMC solution (add as required; recommended for complex conditions with frequent high-power switching)

Typical External Component Values

Model/Component	FUSE	MOV1	CX	LDM	LCM	CY1, CY2	C1	C2	TVS
KEP0 3D0 5	Fuse T1A/250V AC	Varistor 7D471K or 10D471K	X2 Safety Capacitor 104K/275VAC or 103K/275VAC	LDM is a differential- mode inductor; the recommended values are 470 uH to 1 mH, with a current of 0.1 A and an internal resistance of 1Ω.	LCMI is a common- mode choke; the recommended value is 10 - 30 mH, with an internal resistance of 5 - 10	102M 40VAC	105K/50V (Ceramic capacitors) Select as appropriate based on actual conditions	470uF/16V	SMAJ7.0A
KEP0 3D0 9								220uF/25V	SMAJ12A
KEP0 3D1 2								220uF/25V	SMAJ15A
KEP0 3D1 5								220uF/25V	SMAJ18A
KEP0 3D2 4								100uF/35V	SMAJ27A

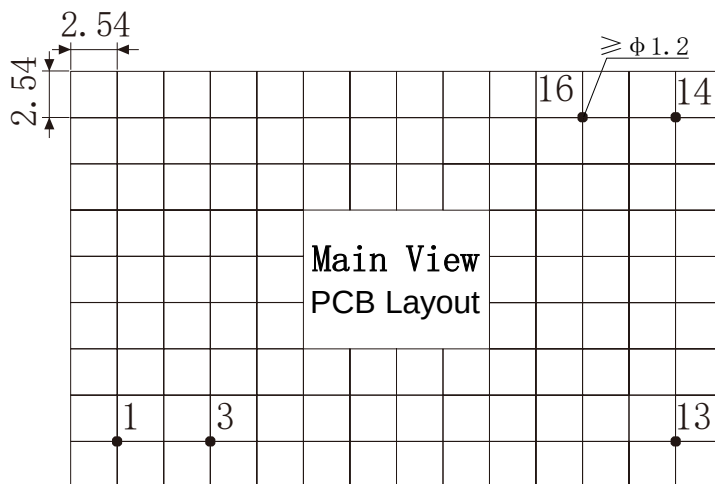
Mechanical Dimensions (unit:mm±0.5)



Main View

Bottom View

PCB Layout



Pin Definitions

- 1: AC (L)
- 3: AC (N)
- 13: N.C
- 14: -V_O
- 16: +V_O