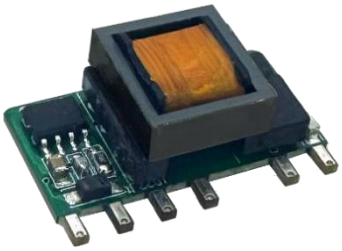
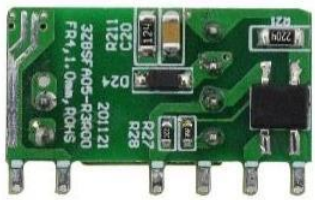
Features:

1. Wide input range (85-305VAC, 100-430VDC)
2. Size 26.5*13.5*11.5mm
3. No-load power consumption ≤0.05W
4. Protection type: over load/over voltage
5. Operating temperature range -40℃ to +85℃
6. 3000V isolation voltage
7. 100% high temperature aging and testing
8. 3 years warranty





RoHS CE 3 years Warranty

Selection Guide

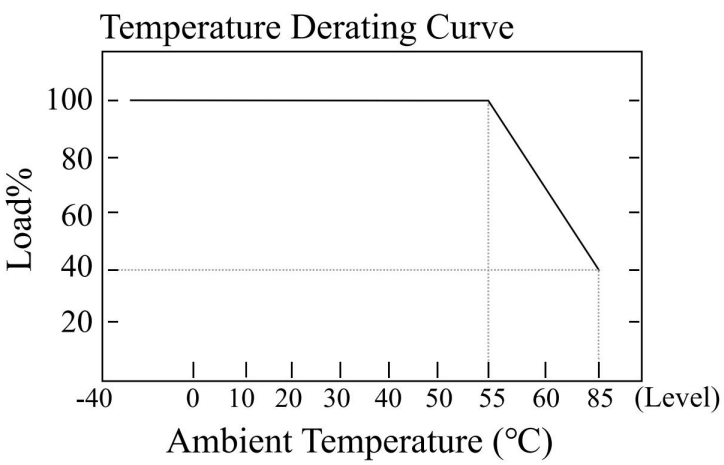
Model	Input Voltage	Rated Power (W)	Output Voltage (V)	Output Current (A)	Ripple & Noise (mVp-p)	Efficiency (%)
QO05-13B03R3	85-305VAC 100-430VDC	3.3	3.3	1	100	72
QO05-13B05R3		4	5	1	100	72
QO05-13B09R3		5	9	0.55	100	78
QO05-13B12R3		5	12	0.42	100	78
QO05-13B12V5R3		5	12.5	0.4	150	78
QO05-13B15R3		5	15	0.33	100	78
QO05-13B24R3		5	24	0.21	100	78

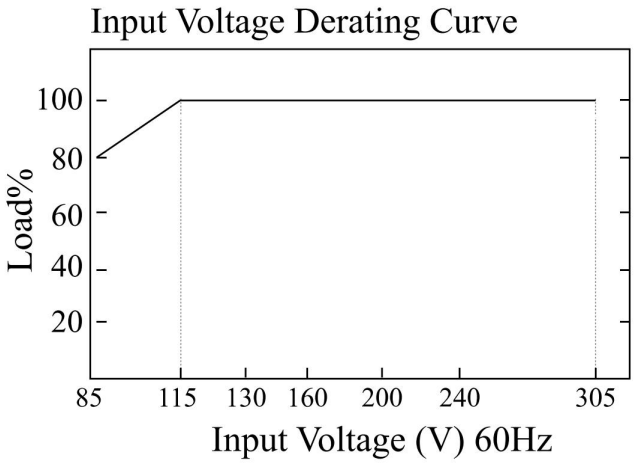
Specifications

OUTPUT	Voltage Tolerance	±5.0%					
	Line Regulation	±1.5%					
	Load Regulation	±3.0%					
	Setup, Rise Time (Typ.)	1000ms, 80ms/230VAC at full load					
	Hold Up Time (Typ.)	50ms/230VAC at full load					
INPUT	Voltage Range	85-305VAC 100-430VDC					
	Frequency	47-63Hz					
	Current (Typ.)	0.12A/115VAC 0.07A/230VAC					
	Inrush Current (Typ.)	Cold boot 40A/230VAC					
	Leakage Current (Typ.)	<1mA/230VAC/50Hz					
PROTECTION	Over Load	≥110% load, self-recovery after troubleshooting					
	Over Voltage (NOTE 4.)	Output off, normal operation can be resumed after power supply restart					
		Voltage	3.3/5VDC	9VDC	12/12.5VDC	15VDC	24VDC
		Range	≤7.5V	≤12V	≤16V	≤20V	≤30V
ENVIRONMENT	Working Temp.	-40°C to +85°C (Refer to "Derating curve")					
	Working Humidity	85%RH max					
	Storage Temp., Humidity	-40°C to +85°C, 10-95% RH					
	Temp. Coefficient	0.03%/ (0-50°C)					
	Vibration	10-500Hz, 2G, 10min./1cycle, 60min.each along X, Y, Z axes					
SAFETY & EMC (NOTE 3.)	Safety Standards	EN62368, IEC62368, UL62368					
	Isolation Voltage	I/P-O/P: 3000VAC					
	Isolation Resistance	I/P-O/P: >100M Ohms/500VDC 25°C 70% RH					
	EMC Emission & Immunity	EN55011, EN55032 (CISPR32) CLASS B	(Refer to "Typical Application")				
	ESD	IEC/EN 61000-4-2 level 4 Contact ±8kV/Air ±15kV	(Refer to "Typical Application")				
	RF	IEC/EN 61000-4-3 level 4	(Refer to "Typical Application")				
	EFT	IEC/EN 61000-4-4 level 4 4kV	(Refer to "Typical Application")				
	Surge	IEC/EN 61000-4-5 level 4 2kV	(Refer to "Typical Application")				
	Harmonic Current	EN61000-3-2	(Refer to "Typical Application")				
OTHERS	MTBF	300K hrs min. MIL-HDBK-217F (25°C)					
	Dimension	26.5*13.5*11.5mm (L*W*H)					
	Weight	8g					
	Carton Size	360*300*250mm					

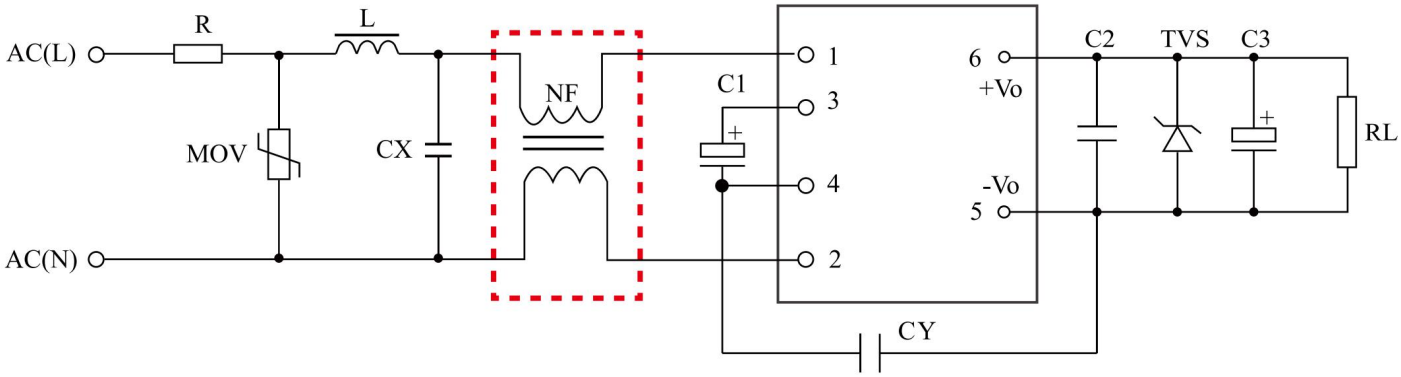
NOTE	1. All parameters not specially mentioned, are measured when TA=25℃, humidity<75%, input nominal voltage and output rated load.
	2. Measurement method of ripple & noise: Parallel line test method shall be adopted. Meanwhile, 0.1uF high-frequency ceramic capacitor and one 47uF electrolytic capacitor shall be connected in parallel at the terminal for measurement under 20Mhz bandwidth and connected according to "typical application". Element parameters shall be the same as those measured in the table.
	3. The power supply is regarded as a component in the system, and electromagnetic compatibility shall be confirmed in combination with the terminal equipment.
	4. This series of overvoltage protection protects the subsequent circuit in case of module abnormality through the peripheral TVS tube.
	5. This model is of PCB only type. To meet the safety requirements, a safe distance of at least 6.4mm shall be maintained between the primary and secondary peripheral components of the module.
	6. In order to improve the conversion efficiency of light load, when the module load is less than 30% of the rated load, the module may have weak audio noise, but it will not affect the performance and reliability of the product.
	7. The module shall be fixed with glue after assembly.

Typical Characteristics Curve





Typical Application



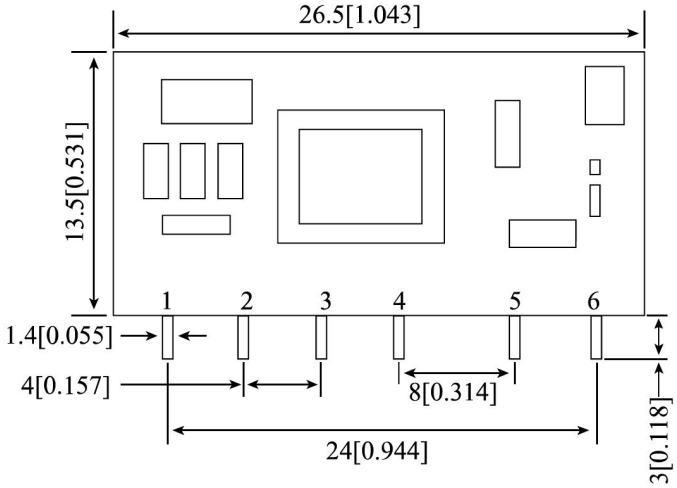
NOTE:

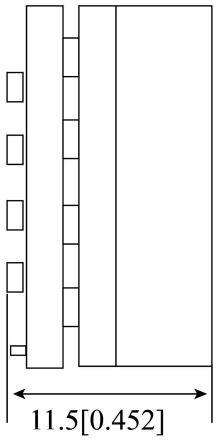
1. C2 is ceramic capacitor to filter high frequency noise. C3 is electrolytic capacitor with high frequency and low resistance characteristics. It is recommended to use TVS tube to protect the subsequent circuit in case of module abnormality.
2. In general application, the common mode inductance NF in the dashed box can be omitted, and the common mode inductance L=30mH. When higher EMC requirements are required, this inductance shall be added.
3. For technical support, please contact our engineer.

List Of Components

Model	R	MOV	L	C1	C2	CX	CY	C3	TVS
QO05-13B03R3	10Ω/1W	10D561K	1mH	10μF/450V	104K/50V	104K/275VAC	1nF/400VAC	1000uF/16V	P6KE7.5A
QO05-13B05R3								1000uF/16V	P6KE7.5A
QO05-13B09R3								470uF/16V	P6KE12A
QO05-13B12R3								470uF/16V	P6KE16A
QO05-13B12V5R3								470uF/16V	P6KE16A
QO05-13B15R3								470uF/25V	P6KE20A
QO05-13B24R3								220uF/35V	P6KE30A

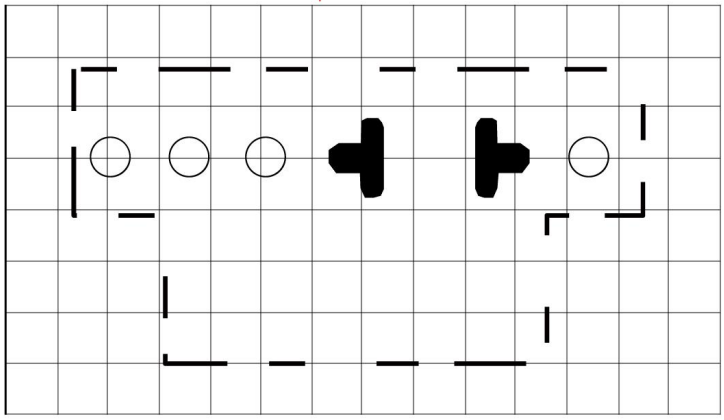
Dimensions & Function





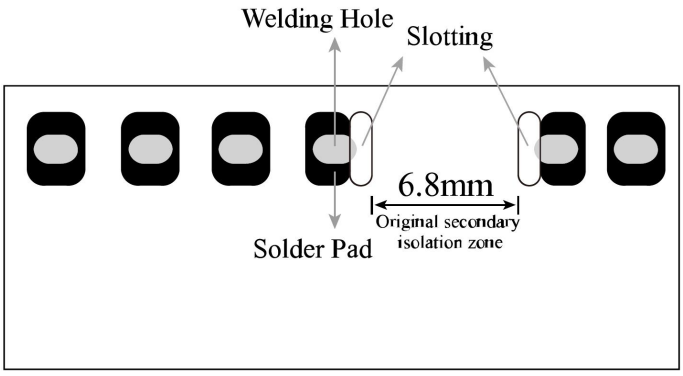
Pin	Function
1	AC(L)
2	AC(N)
3	+V(CAP)
4	-V(CAP)
5	-Vo
6	+Vo

Third Angle Projection



Note: Grid Spacing 2.54 * 2.54mm

QO05-13BxxR3 Series
Recommended Solder Pads



Notes:

1. If the product works under the minimum required load, it cannot guarantee that the performance of the product complies with all the performance indicators in this manual;
2. The maximum capacitive load is tested under the input voltage range and full load condition;
3. Unless otherwise stated, all indexes in this manual are measured at Ta=25℃, humidity <75%RH, nominal input voltage and rated output load;
4. All index testing methods in this manual are based on the enterprise standards of the company;
5. Our company can provide product customization, specific needs can directly contact our technical staff;
6.AMCHARD reserves the right to make changes to the product at any time without notice.