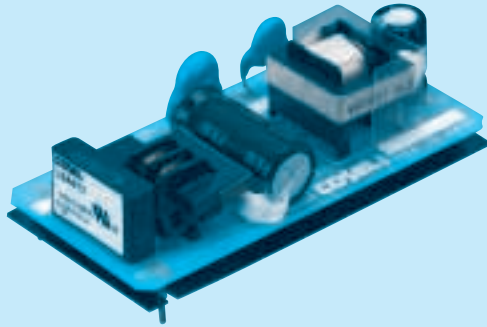


# VAA5

VAA 5 05

① ② ③

**RoHS**



① Series name  
② Output wattage  
③ Output voltage

MODEL	VAA505	VAA512
MAX OUTPUT WATTAGE[W]	5.0	5.4
DC OUTPUT	VOLTAGE[V]	5
	CURRENT[A]	1.0
		12
		0.45

## SPECIFICATIONS

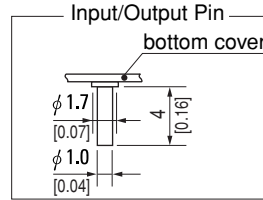
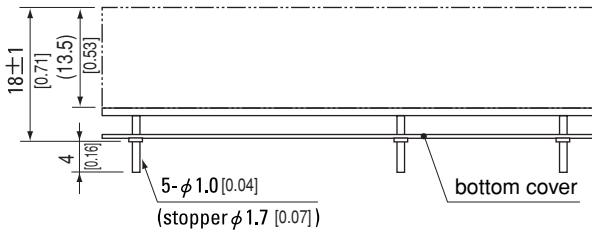
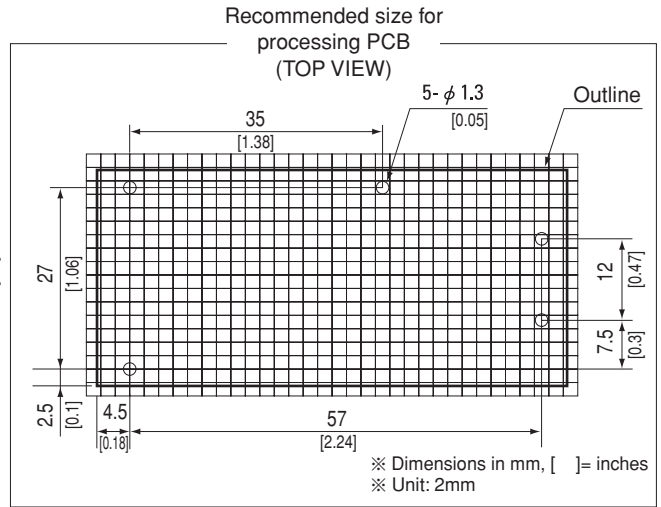
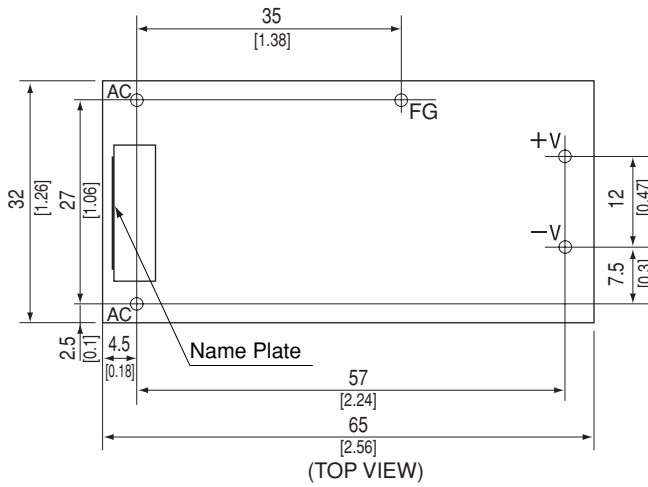
	MODEL	VAA505	VAA512	
INPUT	VOLTAGE[V]	AC85 - 132 1 φ or DC110 - 170		
	CURRENT[A]	*1 0.13typ (ACIN 100V, Io=100%)		
	EFFICIENCY[%]	*1 75typ	77typ	
	FREQUENCY[Hz]	47 - 440 or DC		
	INRUSH CURRENT[A]	*1 15typ (ACIN 100V, Io=100%)		
	LEAKAGE CURRENT[ma]	0.5max (60Hz According to UL and DEN-AN)		
OUTPUT	VOLTAGE[V]	5	12	
	CURRENT[A]	1.0	0.45	
	LINE REGULATION[mV]	20max	48max	
	LOAD REGULATION[mV]	40max	100max	
	RIPPLE[mVp-p]	0 to +55°C *2	80max	120max
		-10 - 0°C *2	140max	160max
	RIPPLE NOISE[mVp-p]	0 to +55°C *2	120max	150max
		-10 - 0°C *2	160max	180max
	TEMPERATURE COEFFICIENT[mV]	-10 to +55°C	50max	120max
	DRIFT[mV]	*3	20max	48max
	OUTPUT VOLTAGE ADJUSTMENT RANGE	Fixed		
START-UP TIME[ms]	200max (ACIN 85V, Io=100%)			
HOLD-UP TIME[ms]	10typ (ACIN 85V, Io=100%), 20typ (ACIN 100V, Io=100%)			
OUTPUT VOLTAGE SETTING[V]	*1 4.90 - 5.30	11.40 - 12.60		
PROTECTION CIRCUIT	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically		
	OVERVOLTAGE PROTECTION	Works over 115% of rating (by zener diode clamping)		
ISOLATION	INPUT-OUTPUT	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)		
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)		
	OUTPUT-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max		
	VIBRATION	19.6m/s <sup>2</sup> 10 - 55Hz, 3minutes period, 60minutes each along X, Y and Z axis (Non operating)		
	IMPACT	196.1m/s <sup>2</sup> 11ms, once each X, Y and Z axis (Non operating)		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, C-UL Complies with DEN-AN (External Fuse is required)		
	CONDUCTED NOISE	Complies with FCC-B, additional capacitors required for meeting VCCI class B		
OTHERS	CASE SIZE/WEIGHT	32 × 18 × 65mm [1.26 × 0.71 × 2.56 inches] (W × H × D) / 30g max		
	COOLING METHOD	Convection		

\*1 Rated input/output Ta=25°C

\*2 This is the value that measured on measuring board with capacitor of 22 μF. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).

\*3 Drift is the charge in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

External view

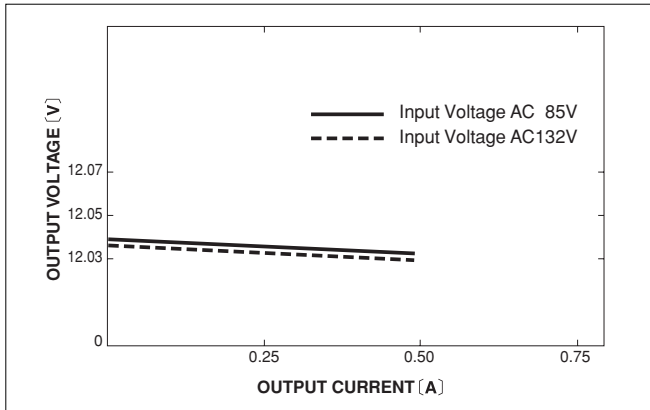


- ※ Weight: 30g max
- ※ Tolerance: ±0.5 [±0.02]
- ※ PCB material: CEM-3
- ※ PCB thickness: t=1.0 [0.04]
- ※ Pin material: CPW with solder plated
- ※ Recommended hole dia. to PCB: φ 1.3
- ※ Dimensions in mm, [ ]= inches

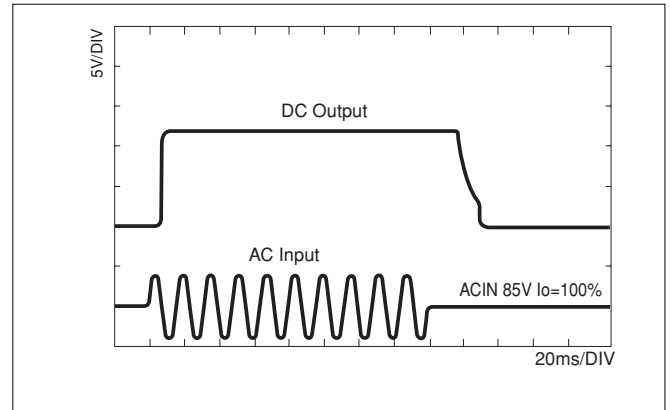
VAA

Performance data

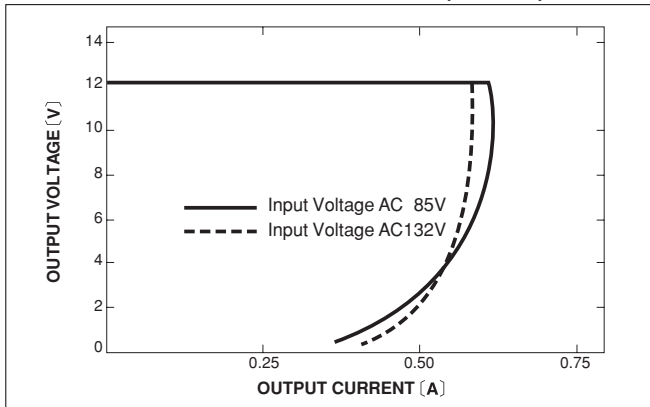
■ STATIC CHARACTERISTICS (VAA512)



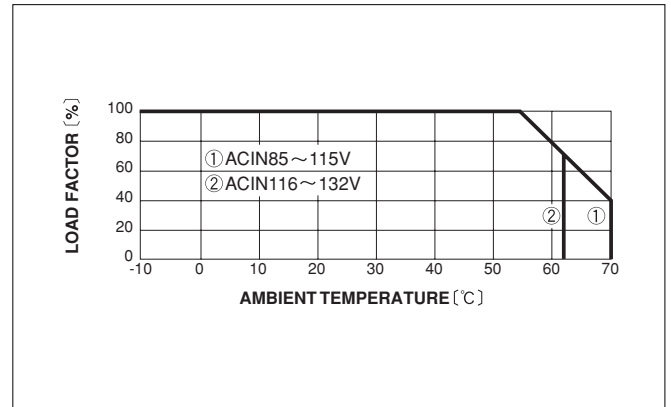
■ RISE TIME & FALL TIME (VAA512)



■ OVERCURRENT CHARACTERISTICS (VAA512)



■ DERATING CURVE

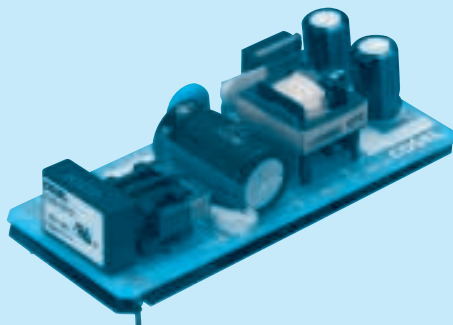


# VAA10

VAA 10 05

① ② ③

c **RoHS**



① Series name  
② Output wattage  
③ Output voltage

MODEL	VAA1005	VAA1012
MAX OUTPUT WATTAGE[W]	10.0	10.8
DC OUTPUT	VOLTAGE[V]	5
	CURRENT[A]	2.0
		12
		0.9

## SPECIFICATIONS

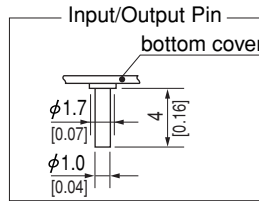
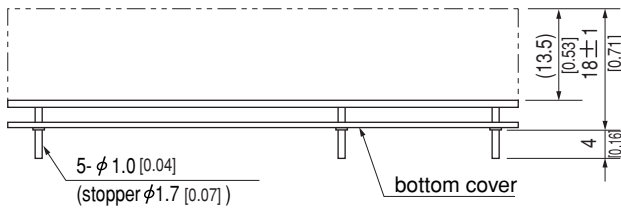
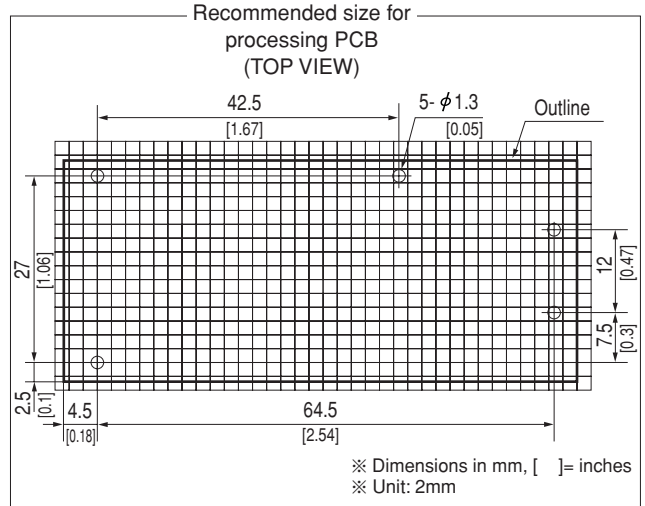
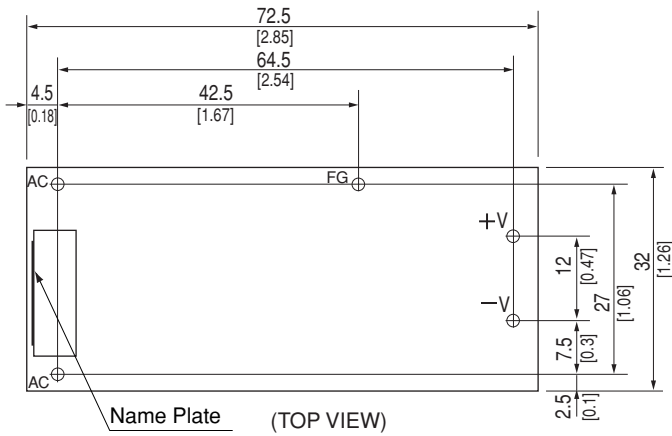
	MODEL	VAA1005	VAA1012	
INPUT	VOLTAGE[V]	AC85 - 132 1 $\phi$ or DC110 - 170		
	CURRENT[A]	*1 0.3typ (ACIN 100V, Io=100%)		
	EFFICIENCY[%]	*1 76typ	77typ	
	FREQUENCY[Hz]	47 - 440 or DC		
	INRUSH CURRENT[A]	*1 15typ (ACIN 100V, Io=100%)		
	LEAKAGE CURRENT[ma]	0.5max (60Hz According to UL and DEN-AN)		
OUTPUT	VOLTAGE[V]	5	12	
	CURRENT[A]	2.0	0.9	
	LINE REGULATION[mV]	20max	48max	
	LOAD REGULATION[mV]	40max	100max	
	RIPPLE[mVp-p]	0 to +55°C *2	80max	120max
		-10 - 0°C *2	140max	160max
	RIPPLE NOISE[mVp-p]	0 to +55°C *2	120max	150max
		-10 - 0°C *2	160max	180max
	TEMPERATURE COEFFICIENT[mV]	-10 to +55°C	50max	120max
	DRIFT[mV]	*3	20max	48max
	OUTPUT VOLTAGE ADJUSTMENT RANGE	Fixed		
	START-UP TIME[ms]	200max (ACIN 85V, Io=100%)		
HOLD-UP TIME[ms]	10typ (ACIN 85V, Io=100%), 20typ (ACIN 100V, Io=100%)			
OUTPUT VOLTAGE SETTING[V]	*1 4.90 - 5.30	11.40 - 12.60		
PROTECTION CIRCUIT	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically		
	OVERVOLTAGE PROTECTION	Works over 115% of rating (by zener diode clamping)		
ISOLATION	INPUT-OUTPUT	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)		
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)		
	OUTPUT-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At Room Temperature)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max		
	VIBRATION	19.6m/s <sup>2</sup> 10 - 55Hz, 3minutes period, 60minutes each along X, Y and Z axis (Non operating)		
	IMPACT	196.1m/s <sup>2</sup> 11ms, once each X, Y and Z axis (Non operating)		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, C-UL Complies with DEN-AN (External Fuse is required)		
	CONDUCTED NOISE	Complies with FCC-B, additional capacitors required for meeting VCCI class B		
OTHERS	CASE SIZE/WEIGHT	32 x 18 x 72.5mm [1.26 x 0.71 x 2.85 inches] (W x H x D) / 35g max		
	COOLING METHOD	Convection		

\*1 Rated input/output Ta=25°C

\*2 This is the value that measured on measuring board with capacitor of 22  $\mu$ F. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).

\*3 Drift is the charge in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

External view

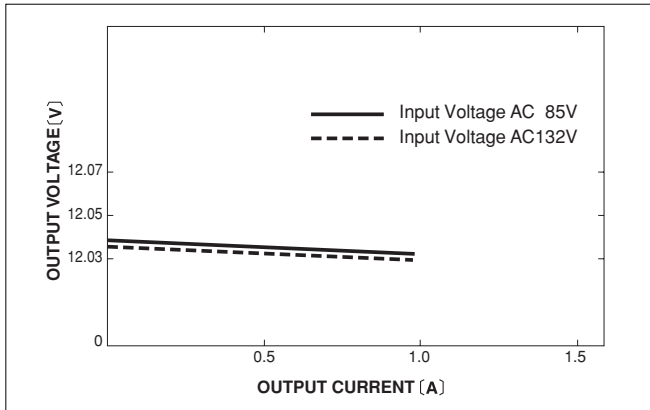


- ※ Weight: 35g max
- ※ Tolerance: ±0.5 [±0.02]
- ※ PCB material: CEM-3
- ※ PCB thickness: t=1.0 [0.04]
- ※ Pin material: CPW with solder plated
- ※ Recommended hole dia. to PCB: φ 1.3
- ※ Dimensions in mm, [ ]= inches

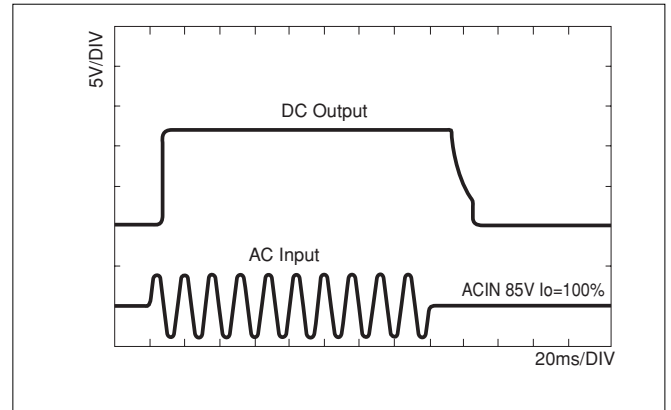
VAA

Performance data

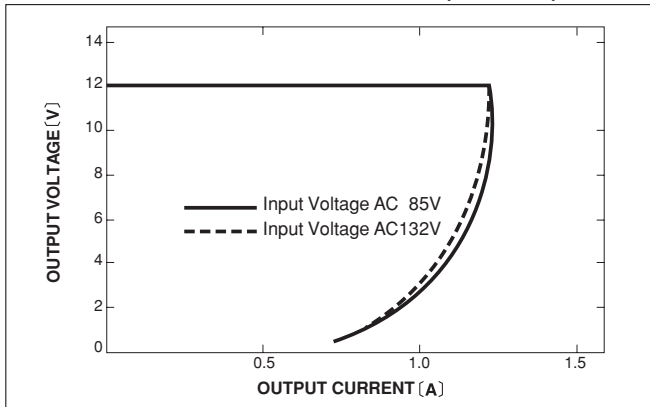
■ STATIC CHARACTERISTICS (VAA1012)



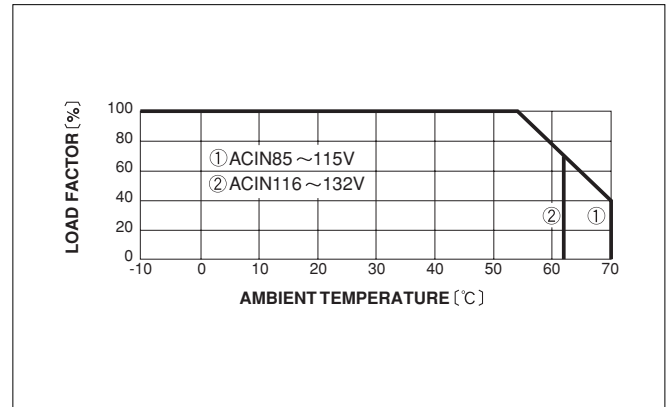
■ RISE TIME & FALL TIME (VAA1012)



■ OVERCURRENT CHARACTERISTICS (VAA1012)



■ DERATING CURVE



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