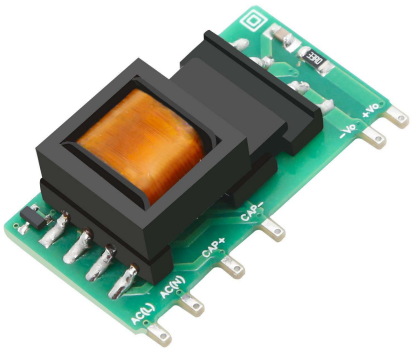
Product Features

1) Rated power: 10W Max
2) Universal input: 85~528VAC 47~63Hz
3) Regulated single output
4) Isolation voltage 4000VAC
5) Typical efficiency 82%
6) Compact SIP package
7) Operating temperature range: -40~+85°C
8) RoHS compliance
9) No external components required for operating
10) Over voltage, over current and short circuit protection
11) Meet IEC/EN/UL 62368-1, CISPR32, EN55032 Class B
12) 3 year warranty



RoHS CE 3 years Warranty

Selection Guide

Model Number	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
QO10-26B03	6.6W	3.3V/2000mA	70	1500
QO10-26B05	10W	5V/2000mA	77	1500
QO10-26B09	10W	9V/1100mA	80	1000
QO10-26B12	10W	12V/830mA	82	680
QO10-26B15	10W	15V/670mA	82	470
QO10-26B24	10W	24V/420mA	83	330

Electrical Specifications

Parameters	Condition	Min.	Typ.	Max.	Unit
Input voltage range	AC in	85		528	VAC
	DC in	100	-	745	VDC
Input frequency		47	-	63	Hz
Nominal input voltage		100	-	480	VAC
Input current	85VAC	-	0.26	0.3	A
	115VAC	-	0.21	0.25	
	230VAC	-	0.13	0.15	
	380VAC	-	0.1	0.12	
Inrush current Cold start	85VAC	-	12	-	A
	115VAC	-	15	-	
	230VAC	-	35	-	
	380VAC	-	60	-	
Leakage current	480VAC, 50Hz	-	-	0.5	mA RMS
Output voltage accuracy I_{OUT}=10%~100% of I_{OUT}, rated	VOUT=3.3V	-	±6	-	%
	Others	-	±5	-	
Line regulation Full load	VOUT=3.3V	-	±2	-	%
	Others		±1.5	-	
Load regulation	IOUT=10%~100% of IOUT, rated	-	±3	-	%
Ripple and noise[2]	20MHz bandwidth	-	100	180	mVp-p
Temperature coefficiency		-	±0.2	-	%/°C
Standby power consumption	230VAC	-	-	0.3	W
	380VAC	-	-	0.5	
Minimum load		10	-	-	% I_{OUT}
Over current protection	Automatic recovery	110	-	-	% I_{OUT}
Short circuit protection		Hiccup mode, automatic recovery			
External fuse		2A, slow blow *required*			

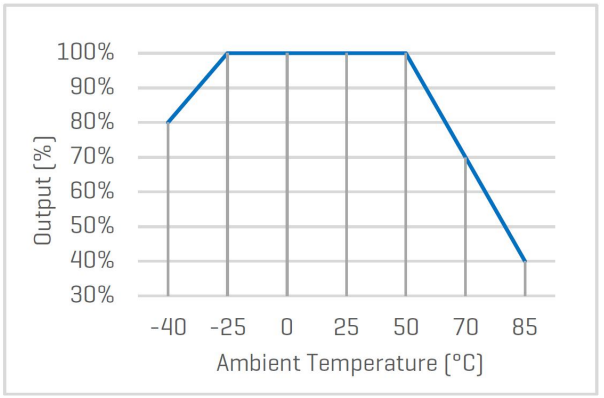
Note [2]: Ripple and noise measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.

General Specifications

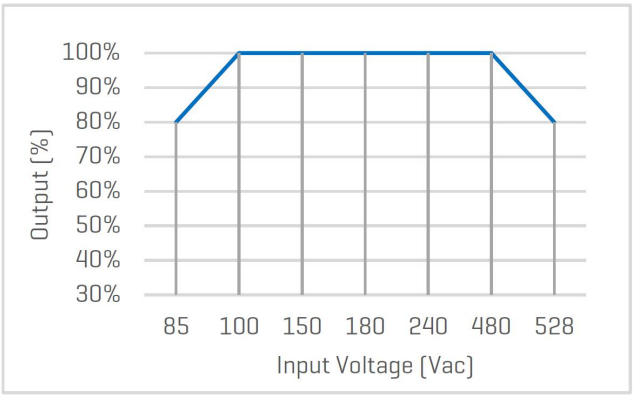
Parameters	Condition	Min.	Typ.	Max.	Unit
Isolation voltage Tested for 1 minute	I/P to O/P	4000	-	-	VAC
Isolation resistance 500VDC, 25°C, 70%RH	I/P to O/P	50	-	-	M Ohm
Switching frequency		-	50	-	KHz
Operating temperature range	See "Derating Curve"	-40	-	85	°C
Storage temperature		-40	-	105	°C
Storage humidity		10	-	95	%RH
Soldering temperature	5…10 seconds	-	260	-	°C
Cooling method		Free air convection			
Safety class		Class II			
MTBF	MIL-HDBK-217F	> 500,000 Hours, 25°C			
Safety standards		UL/EN/IEC 62368-1			
EMC standards	CISPR32, EN55032	Class A with External Circuit "Figure 1" [A] Class B with External Circuit "Figure 2" [B]			
ESD	IEC/EN61000-4-2	Contact ±6kV, Air ±8kV, perf. Criteria B			
Radiated	IEC/EN61000-4-3	10V/m, perf. Criteria A			
EFT, Burst	IEC/EN61000-4-4	±2kV, perf. Criteria B [A] ±4kV, perf. Criteria B [B]			
Surge	IEC/EN61000-4-5	Line to Line ±1kV, perf. Criteria B [A] Line to Line ±2kV, perf. Criteria B [B]			
Conducted	IEC/EN61000-4-6	10Vrms, perf. Criteria A			
Size, and Weight	Default Package	38x15.25x20mm, 12g			

Typical Characteristic Curves

Output vs Ambient Temperature



Output vs Input Voltage



Recommended External Circuits

Typical External Circuit for EN55032 Class A

This circuit is the basic design reference, components with "" are required for the converter's operating.
FUSE to be 2A slow blow. R1*, R11* … R14* refer of that in Table 2.

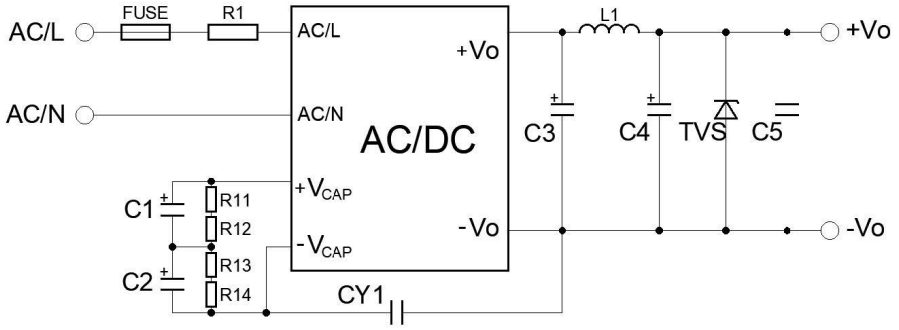


Figure 1. Typical external circuit

Recommended Component [Table 1]

VOUT [V]	C1*, C2*	C3*	C4*	C5	CY1*	L1*	TVS
12	47uF, 400V	470uF, 25V	330uF, 25V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6.5A	SMBJ20A

EMC Enhancement for EN55032 Class B

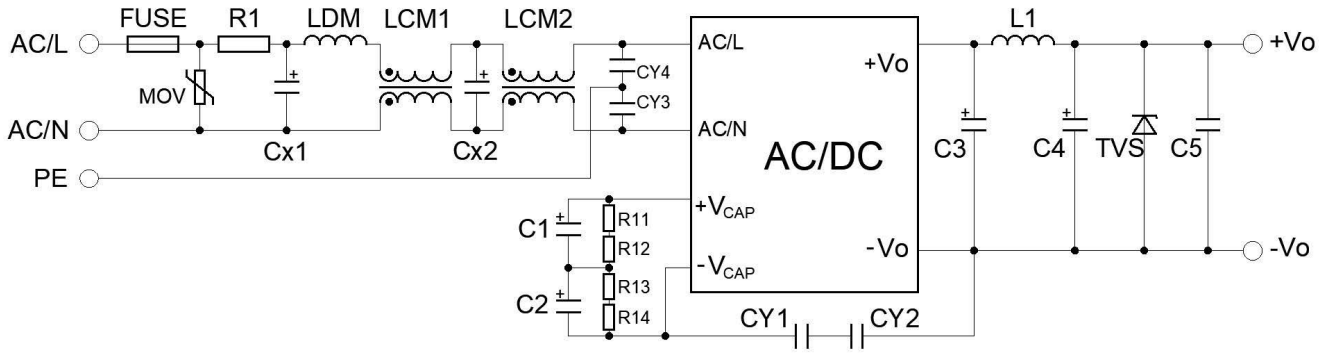


Figure 2. Circuit for EMC enhancement

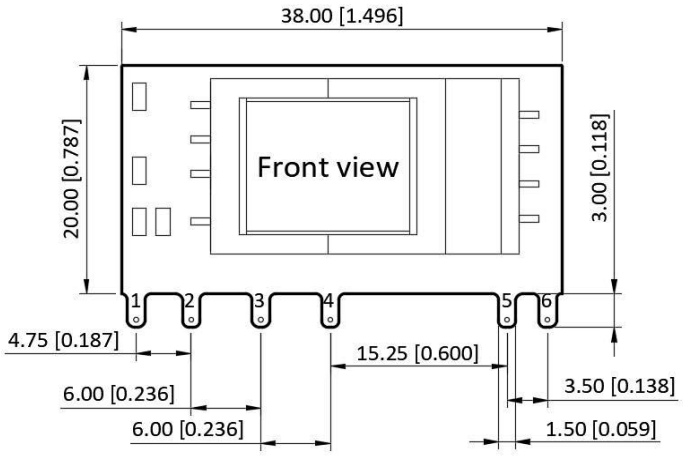
Recommended Component [Table 2]

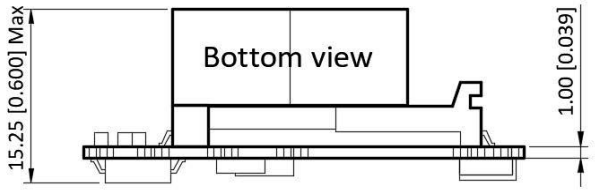
Item	FUSE*	R1*	MOV	LDM	LCM1	LCM2
Spec	2A, 500VAC	6.8 Ohm, 3W	14D911K	2.2mH, 0.35A	200uH, 0.8A	12.6mH 0.5A
Item	Cx1, Cx2	C1*, C2*	R11* … R14*	CY1 … CY4		
Spec	0.1uF, 480VAC	47uF, 400VAC	1M Ohm, 1206	1nF, 400VAC		

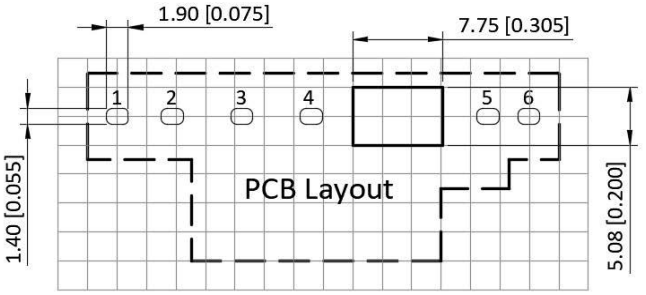
Components above with "" are required for the converter's operating. "R1" is wire-wound resistor.
*Refer to Table 1 for the output circuit configuration.

Dimensions and Recommended Layout

Dimensions







Pin Function Table	
Pin	Function
1	AC(L)
2	AC(N)
3	+V (CAP)
4	-V (CAP)
5	$-V_{OUT}$
6	$+V_{OUT}$

Note:
Unless otherwise specified unit: mm [inch]
General tolerance: ±1.00 [±0.040]
Pin thickness: ±0.15 [±0.006]
Pin distance: ±0.50 [±0.020]
Footprint grid 2.54 x 2.54 mm