

AC-DC switch mode power supply

Features

- Wide range input voltage
- MTBF > 400000 hours at 50 °C
- Lifetime 79000 hours at 50 °C
- Operating temperature range - 40 ÷ 85 °C
- Input fuse protection
- Output short circuit protection
- Low stand-by power
- Compliance to: EN60950, EN55014-1, EN55014-2, EN60730-1, EN60730-2-9, EN61010-1, UL60950, CAN/CSA-C22.2 No. 60950-00
- Electrical test on 100% production
- Protected with resin UL conform, RoHS compliant

Description

ST's power modules are highly integrated, high efficiency switch mode converters.

The SPAC265-3W isolated series delivers 3 W at 12 V from universal AC input. It is an immediate drop-in solution requiring no additional external circuitry.

The power supply modules are fully encapsulated offline board-mount devices suited for main and auxiliary power requirements in appliance, industrial and communication application.

The open frame version is intended to offer a low-cost version of ST's easy to use, compact size power modules.

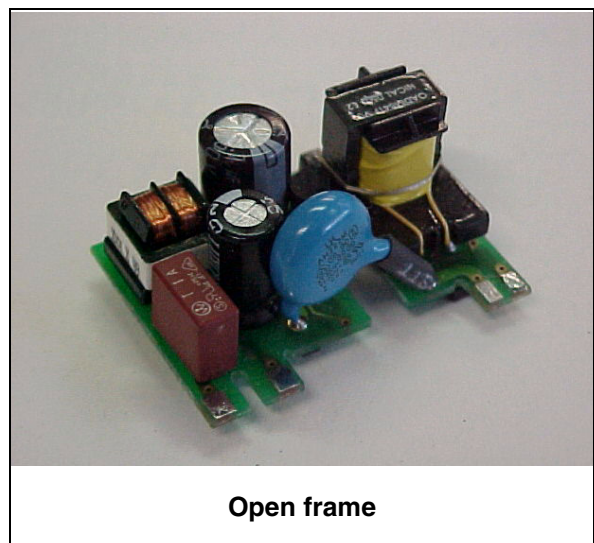


Table 1. Device summary

Order codes	Package
SPAC265BC12P0.30	Encapsulated
SPAC265FC12P0.30	Open frame

Contents

1 Specifications 3

2 Electrical connection 5

3 Connection diagram 6

4 PCB footprint 7

5 Mechanical dimensions 8

6 Ordering information scheme 10

7 Revision history 11



1 Specifications

Table 2. Specifications

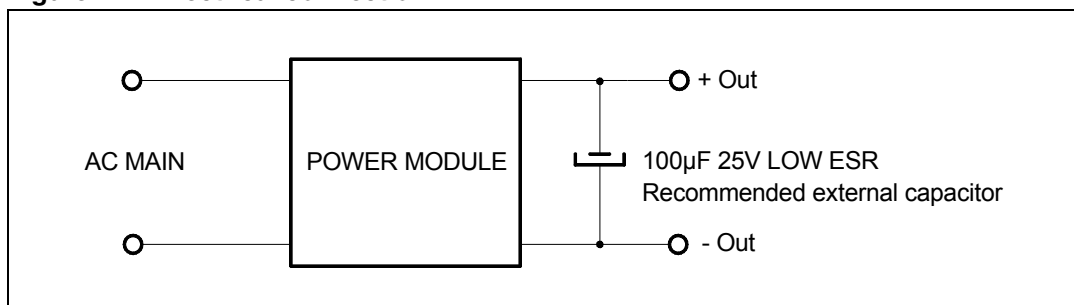
Symbol	Parameter	Test condition	Min	Typ	Max	Unit
V_i	Input voltage	Nominal voltage value	90		264	VAC
			120		370	VDC
W_o	Rated power				3	W
f_i	Input frequency range	AC input	47		440	Hz
I_C	Input current - full load	115 VAC			0.4	A
		230 VAC			0.2	
I_{INR}	Inrush current	Pulse < 10 ms 115 VAC 250 VAC			5 10	A
I_L	Leakage current	50 Hz, 230 VAC			20	μ A
V_O	Output voltage			12		V
V_{OA}	Output voltage accuracy	Full load			± 3	%
V_{OLI}	Line voltage regulation	Low to high line			± 1	%
V_{OLO}	Load voltage regulation	5% to 10% full load			± 6	%
I_O	Output current		0		250	mA
f_{SW}	Operating frequency	Self oscillating			300	kHz
E	Efficiency	Full load		80		%
V_{IS}	Isolation voltage	Input to output	3750			VAC
R_{IS}	Isolation resistance	Input to output	100			M Ω
I_{OSH}	Output short-circuit protection	Continuous automatic restart			1	A
T_{OP}	Operating temperature range	Free air convection	-40		85	$^{\circ}$ C
T_{STG}	Storage temperature range		-40		85	$^{\circ}$ C
R_H	Relative humidity	Operating conditions			95	%
MTFB	Mean time between failure	According to MIL-HDBK-217E + 50 $^{\circ}$ C full load	400			Khours
W_E	Weight	Encapsulated			25	g
		Open frame			12	

- Agency approvals
The charger is compliant with most popular safety and EMC requirements, including:
 - EN60950
 - EN55014-1
 - EN55014-2
 - EN60730-1
 - EN60730-2-9
 - EN61010-1
 - UL60950
 - CAN/CSA-C22.2 No. 60950-00

Caution: Module design is performed in accordance with above norms. According to current rules the open frame module can only be certified as part of the customer mother board.

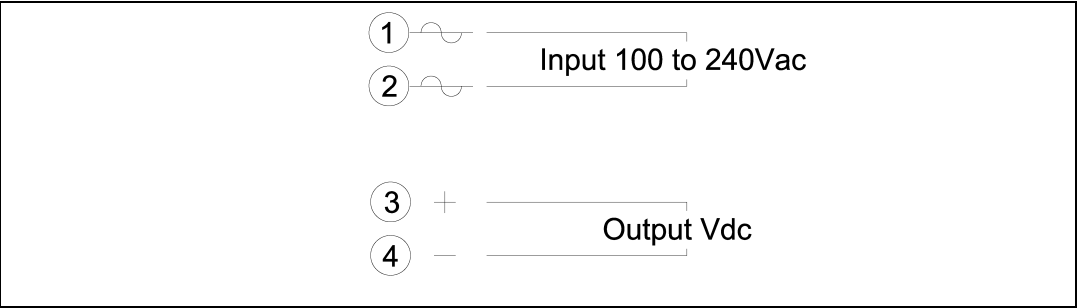
2 Electrical connection

Figure 1. Electrical connection



3 Connection diagram

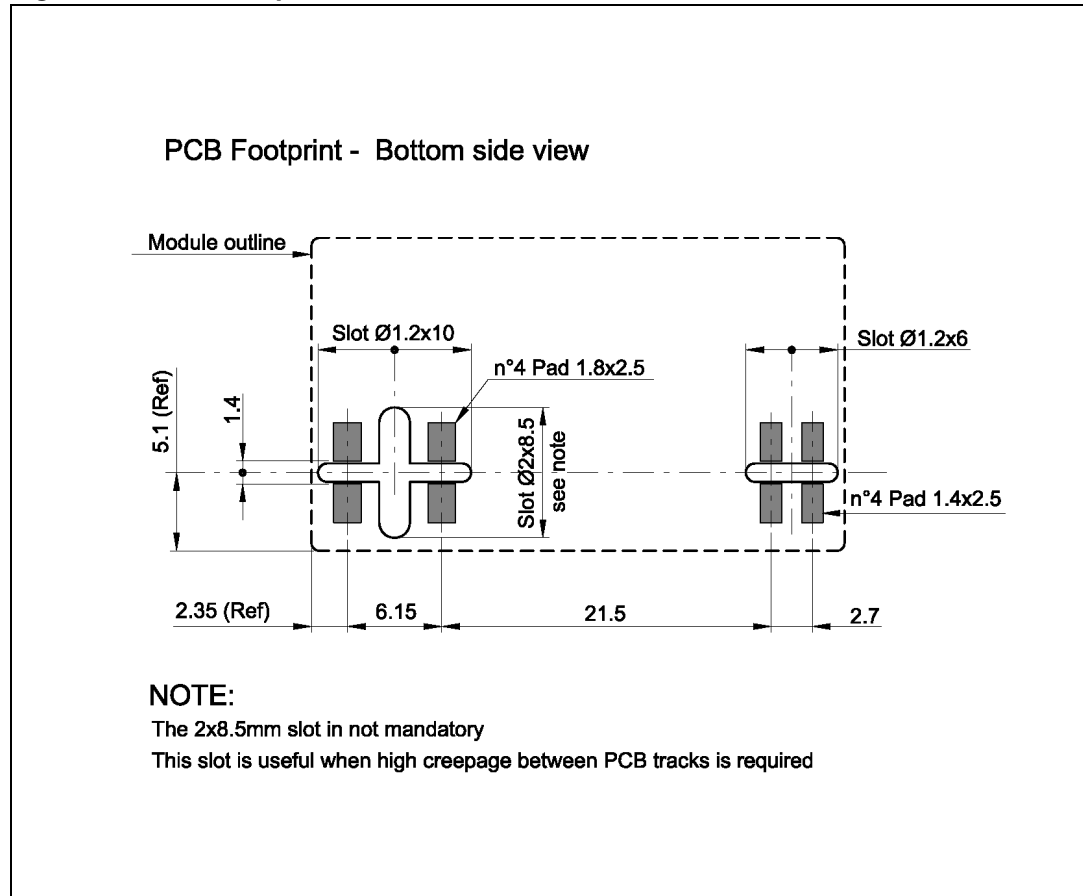
Figure 2. SPAC265-3W pin configuration



4 PCB footprint

Use [Figure 3](#) as suggested PCB footprint

Figure 3. PCB footprint for SPAC265BC12P0.30 and SPAC265FC12P0.30 (a)



a. Dimensions in mm

5 Mechanical dimensions

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK® is an ST trademark.

Mechanical dimensions L x W x H = 35 x 20 x 22 on molded box.

Figure 4. SPAC265BC12P0.30 mechanical data (dimensions in mm)

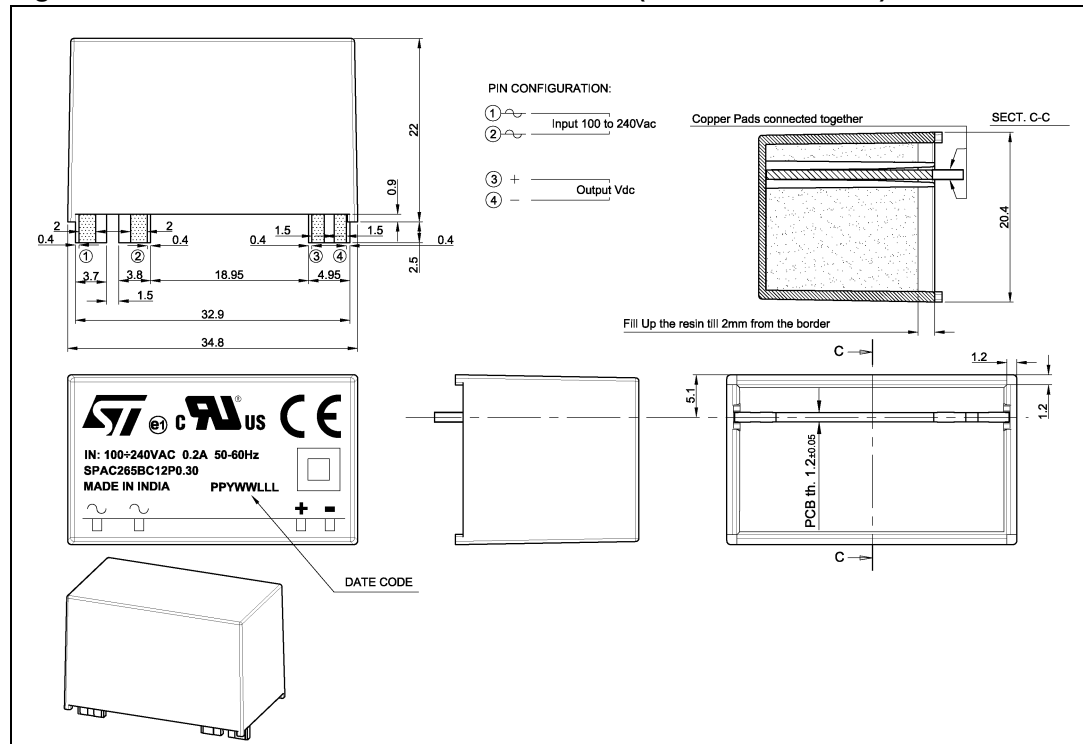
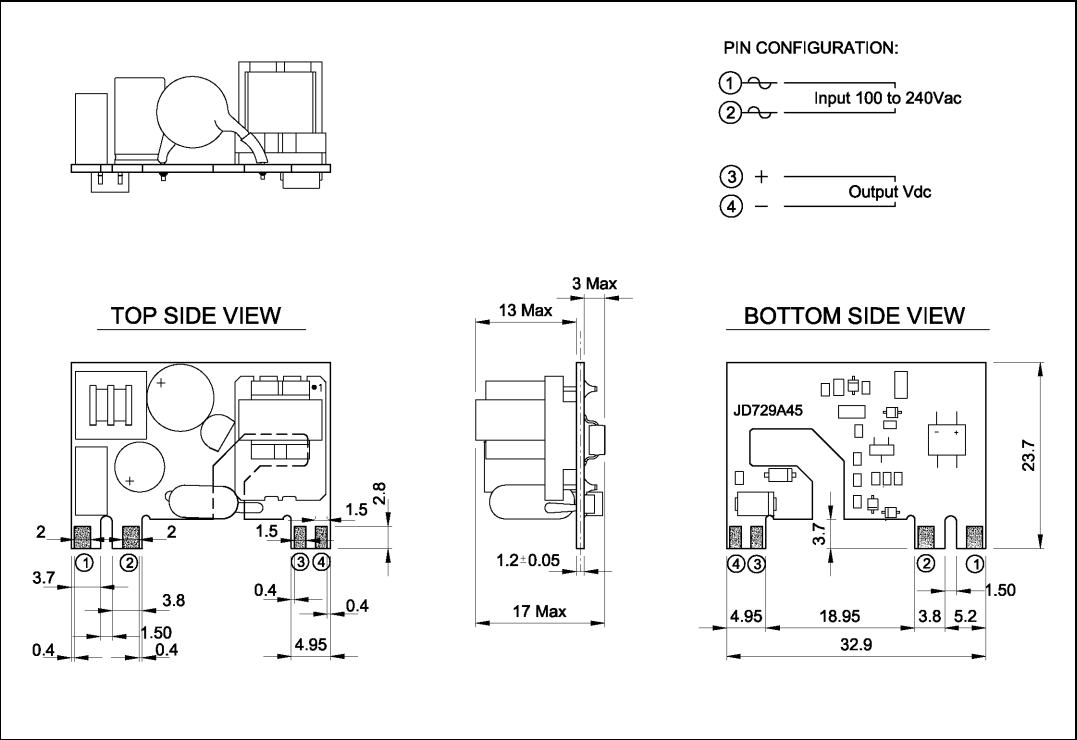


Figure 5. SPAC265FC12P0.30 mechanical data (dimensions in mm)



6 **Ordering information scheme**

Table 3. Ordering information scheme

	SPAC	265	X	Y	12	Z	0.35
AC-DC converter							
Max V _{AC} input							
F: Open frame	Package						
B: Encapsulated							
C: Comb	Connection						
Typ VDC output							
P: Plus	Output voltage polarity						
M: Minus							
Typ IDC output							



7 Revision history

Table 4. Document revision history

Date	Revision	Changes
11-Oct-2007	1	Initial release
17-Dec-2007	2	Updated: operating temperature range in cover page and Table 2 on page 3
17-Nov-2008	3	Updated: Cover page, Table 1 on page 1 , Table 2 on page 3 , Figure 4 on page 8
19-May-2009	4	Added: Figure 3 on page 7

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