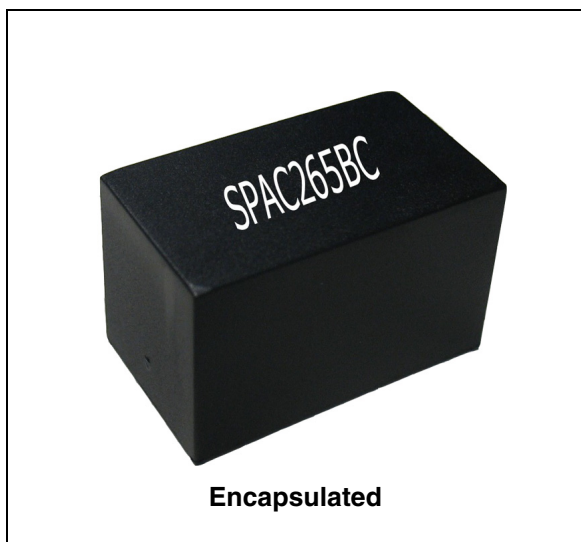


## AC-DC switch mode power supply

### 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



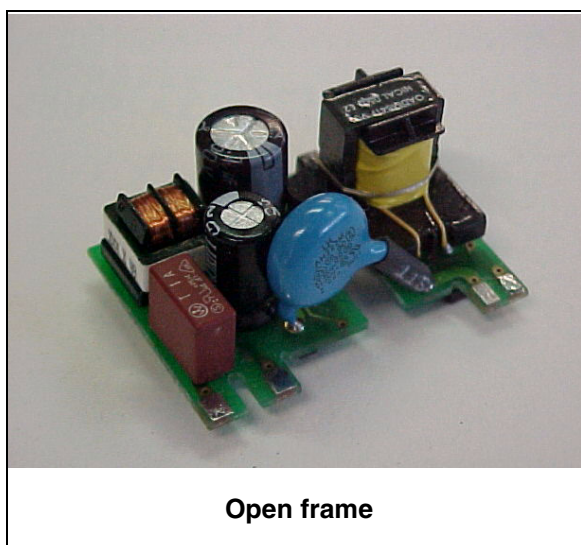
### Description

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

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# 1 Specifications

**Table 2. Specifications**

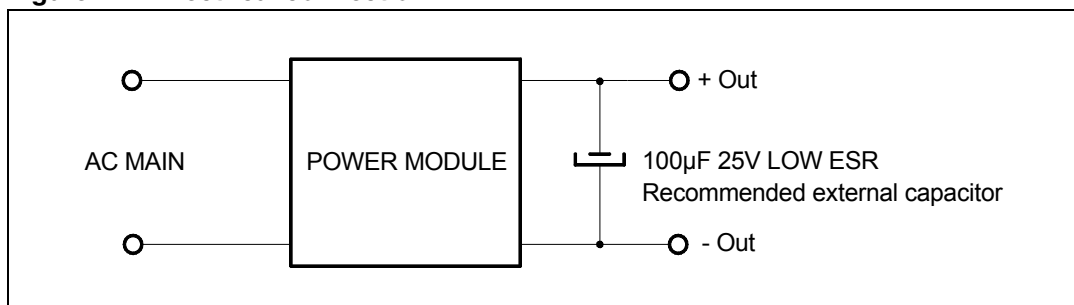
Symbol	Parameter	Test condition	Min	Typ	Max	Unit
$V_i$	Input voltage	Nominal voltage value	90		264	VAC
			120		370	VDC
$W_o$	Rated power				3	W
$f_i$	Input frequency range	AC input	47		440	Hz
$I_C$	Input current - full load	115 VAC			0.4	A
		230 VAC			0.2	
$I_{INR}$	Inrush current	Pulse < 10 ms 115 VAC 250 VAC			5 10	A
$I_L$	Leakage current	50 Hz, 230 VAC			20	$\mu$ A
$V_O$	Output voltage			12		V
$V_{OA}$	Output voltage accuracy	Full load			$\pm 3$	%
$V_{OLI}$	Line voltage regulation	Low to high line			$\pm 1$	%
$V_{OLO}$	Load voltage regulation	5% to 10% full load			$\pm 6$	%
$I_O$	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 $\Omega$
$I_{OSH}$	Output short-circuit protection	Continuos 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.

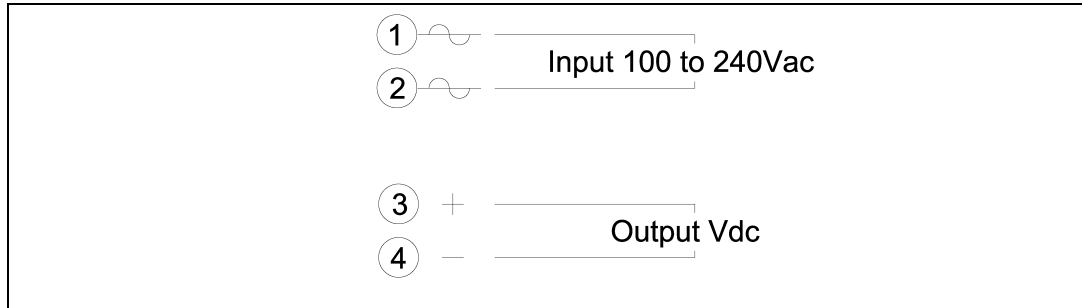
## 2 Electrical connection

Figure 1. Electrical connection



### 3 Connection diagram

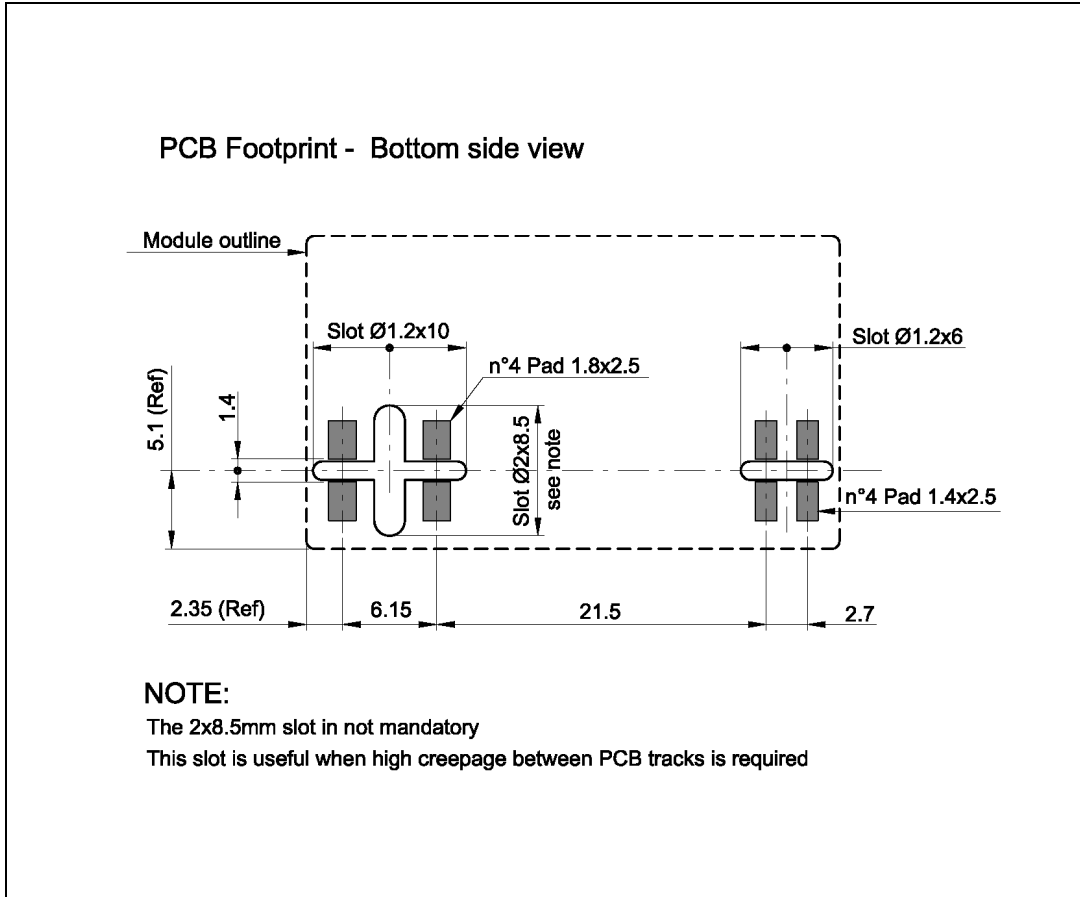
Figure 2. SPAC265-3W pin configuration



## 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<sup>®</sup> packages, depending on their level of environmental compliance. ECOPACK<sup>®</sup> specifications, grade definitions and product status are available at: [www.st.com](http://www.st.com). ECOPACK<sup>®</sup> 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)**

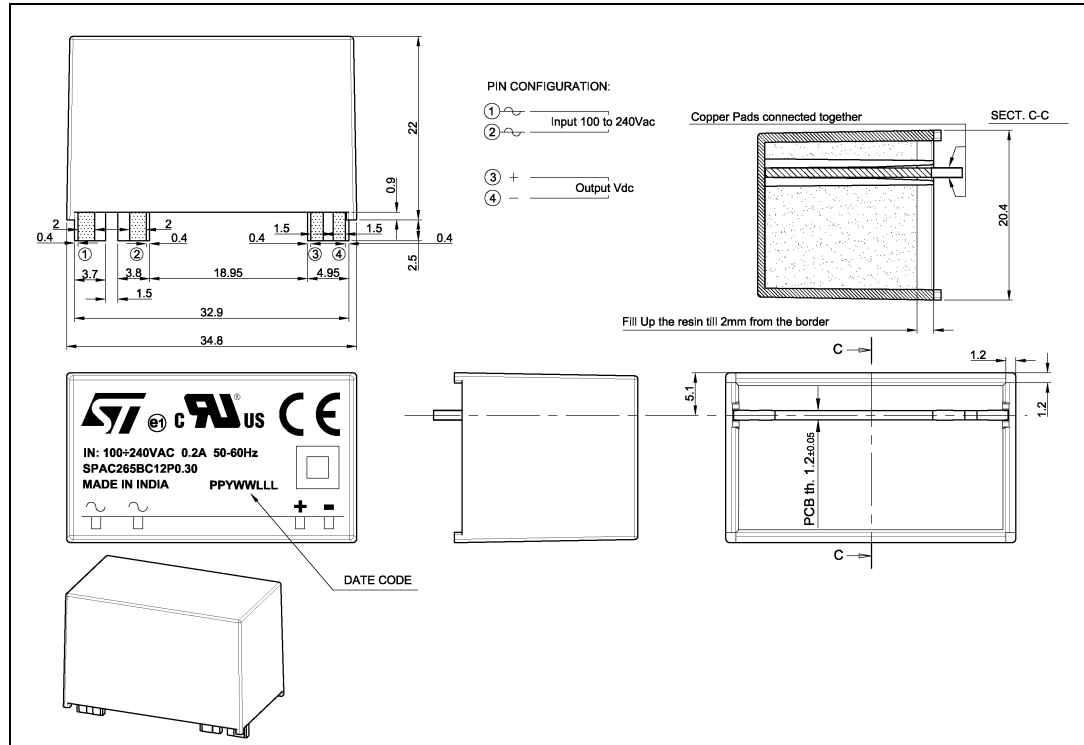
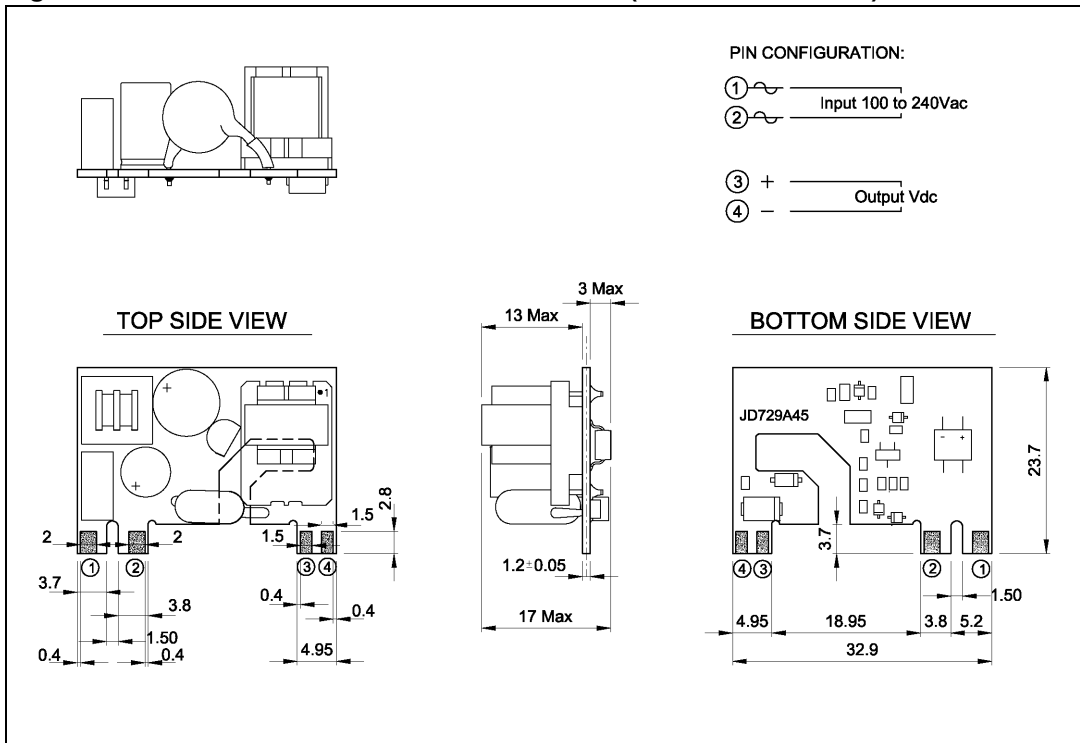




Figure 5. SPAC265FC12P0.30 mechanical data (dimensions in mm)



## 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 B: Encapsulated	Package						
C: Comb	Connection						
Typ VDC output							
P: Plus M: Minus	Output voltage polarity						
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 <a href="#">Table 2 on page 3</a>
17-Nov-2008	3	Updated: Cover page, <a href="#">Table 1 on page 1</a> , <a href="#">Table 2 on page 3</a> , <a href="#">Figure 4 on page 8</a>
19-May-2009	4	Added: <a href="#">Figure 3 on page 7</a>

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