PM23 product photography

Feature summary

- 3 Channels, each 2A
  - up to 6A with 3 channels in parallel
- Ideal for 5V to 48V Systems
- Applications
  - Redundancy
  - Power Boost
- Ultrathin Case: Width: 8.8mm

Product description

The PM23 is 8.8 mm paralleling module that uses 100V Schottky diodes. It's a powerful tool to provide redundancy and power boost for system voltages up to 50V. It's designed to work with AC/DC and DC/DC converters. The module is compatible with most DPS products.

The device is resilient to typical operating failures: Input reverse polarity and open circuit. The device does not feature a fuse or short circuit protection.

The operating temperature ranges between -40°C and 50°C. A derating over temperature is required above 30°C.

Specification overview

Description	Value
General	
Voltage Range	8 - 50V
Voltage Drop (typ.)	0.45V
Max. Input Current	2A
Max. Output Current	6A
Protection	
Input Fuse	no
Input Reverse polarity protection	yes
Short circuit protection	no
Open circuit protection	yes
Input Overvoltage supressor	none

Ordering information

Ordercode	Description
PM23	Default
Customisation available. Contact DPS.	

Engineering standards

Applied engineering standards	
IEC 55032	IEC 61000-4-2
IEC 61000-4-3	IEC 61000-4-4
IEC 61000-4-5	IEC 61000-4-6
IEC 61000-4-7	IEC 61000-4-8

1 Functional description

1.1 Overview

The PM23 is 8.8 mm paralleling module that uses 100V Schottky diodes. It's a powerful tool to provide redundancy and power boost for system voltages up to 50V. It's designed to work with AC/DC and DC/DC converters. The module is compatible with most DPS products.

The device is resilient to typical operating failures: Input reverse polarity and open circuit. The device does not feature a fuse or short circuit protection.

The operating temperature ranges between -40°C and 50°C. A derating over temperature is required above 30°C.

1.2 Protections

The following output protections are in place:

- **Input Reverse polarity:** The input may be connected in reverse polarity with an input of $U_{in,max}$ = -48 V.
- **Open circuit proof** The output may be operated in open circuit for infinite time.

1.3 Ordering Information

Ordercode	Description	EAN
PM23	Paralleling Module 8A with 3 channels	0735654854104
Customisation available. Contact DPS.		

2 Pinout and Schematic

The pinout of the PM23 is depicted in Figure 3.

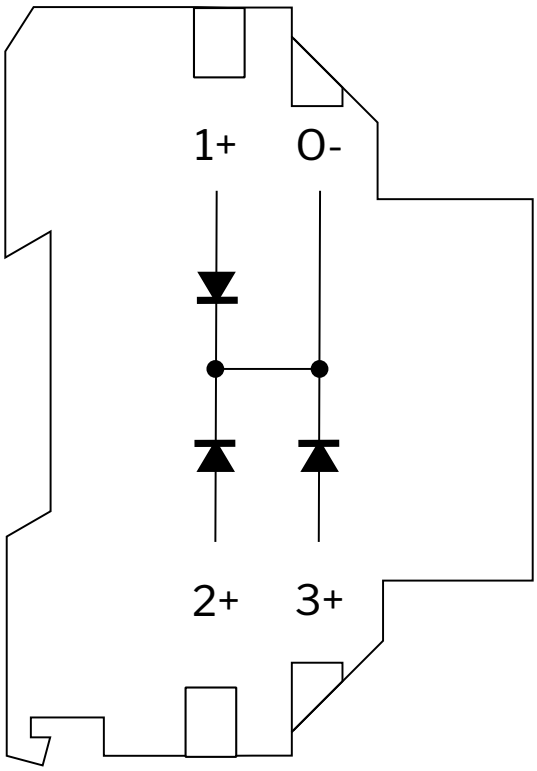

Figure 1: PM23 connection Diagram

2.1 Pin description

Pin	Functional description
0-	Voltage Output (Diode -)
1+	Voltage Input Diode 1 (Diode 1 +)
2+	Voltage Input Diode 2 (Diode 2 +)
3+	Voltage Input Diode 3 (Diode 3 +)

3 Application examples

3.1 Redudancy

A redundancy module is used for increased reliability or increased output power of power supplies. The PM23 implements 3 pairs of output diodes.

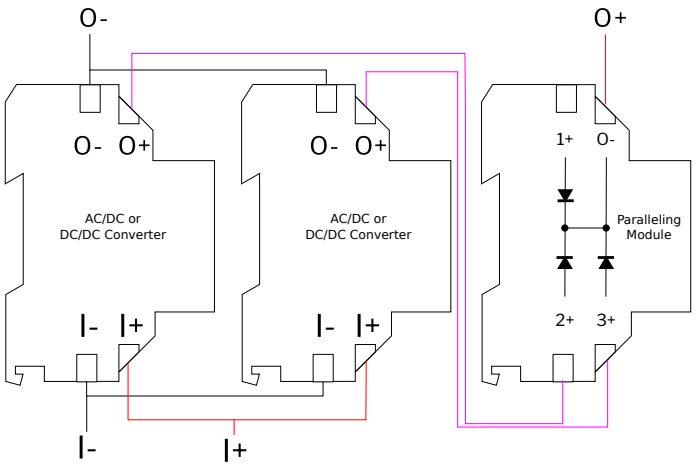

Figure 2: AC/DC or DC/DC power supplies are paralleled using the PM23.

3.2 Increased output power

The output power can be increased by paralleling the up to 3 diodes. The current per chanel and the total current may not be exceeded. Several paralleling modules may be used in parallel.

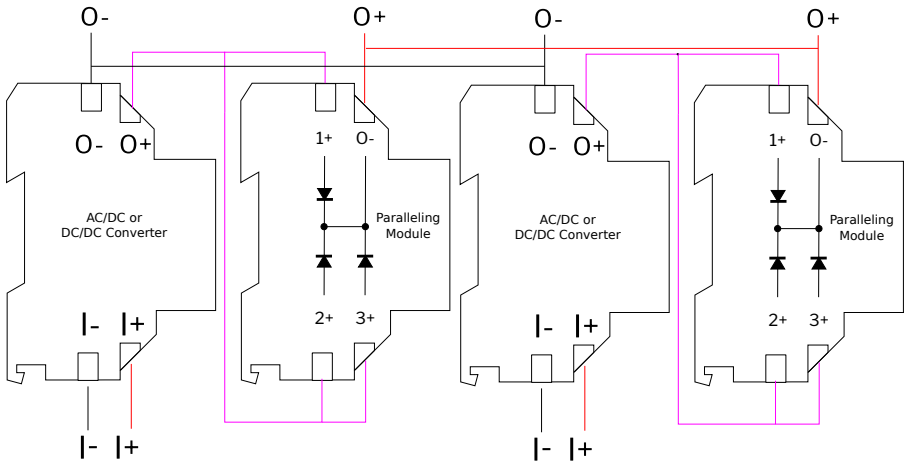

Figure 3: Redundancy operation with an maximum output current of 6A per PM23.

3.3 Paralleling of PM23

Several PM23may only be paralleled with derating. The derating must be clarified with the manufacturur.

4 Specification

The specification is shown in the following table. If not otherwise specified the following parameters have been used: T_{amb}=25°C and U_{in}=30 V_{dc}.

	Min	Typ	Max	Unit
Elektronische Eigenschaften Electrical Properties				
Eingangsspannung Input Voltage			50	V_{dc}
Eingangstrom Input Current			2	A_{dc}
Eingang-Ausgangs-Spannungdifferenz Input Output Voltage Drop		0.4	0.55	V_{dc}
Ausgangsstrom Output Current			6	A_{dc}
Gehäuse Case				
Montageform Mounting Type		Din Rail		
Breiteneinheiten Mounting Width		8.8		mm
Montagehöhe Mounting Height		Household Installation BOX		
Programmierbarkeit Programmability				
Interface Interface		Factory		
Sicherheitsfeatures Safety Features				
Verpolungsschutz Reverse polarity protection		yes		
Neg. Eingangsspannung Negative Input Voltage			- 50	V_{dc}
Kurzschlussschutz Short circuit protection		no		
Leerlaufschutz Open circuit protection		yes		
Betriebsbedingungen Operating Conditions				
Temperaturbereich Temperature Range	-40		50	°C
Technische Merkmale Technical Characteristics				
Elektrolytkondensatoren Electrolytic Capacitors		No electrolytic capacitors		

5 Measurements

5.1 Voltage Drop

The diode voltage drop of a single channel of PM23 is depicted in Figure 5. The PM23 features a low forward voltage of 508mV at 2A output current.

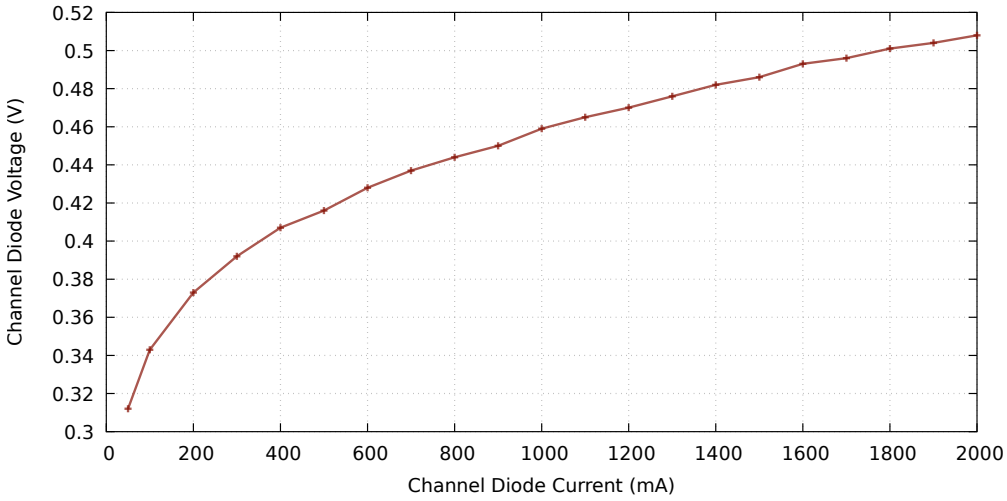

Figure 4: Voltage (V) over Current (mA) of a single channel of PM23.

5.2 Power Dissipation

The power dissipation of a single channel of PM23 is depicted in Figure 5. The PM23 features has a power loss of 1.1W at 2A output current.

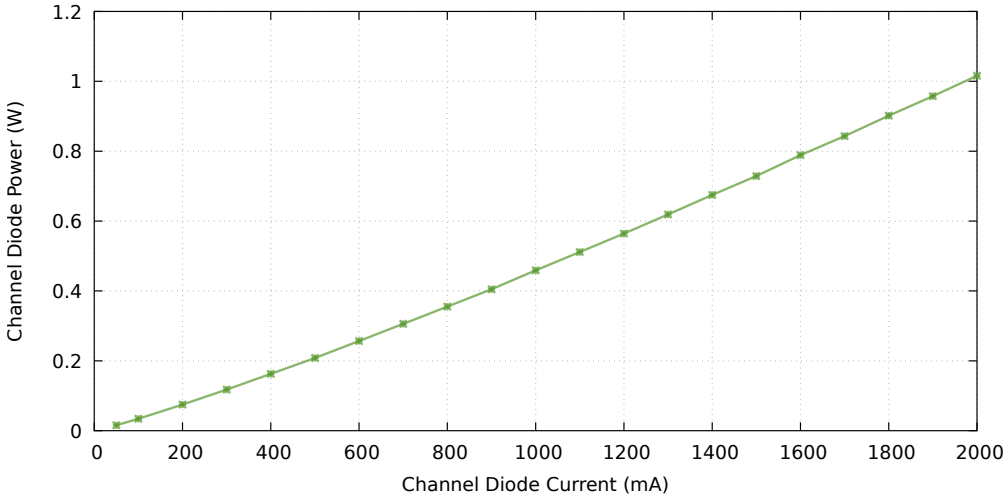

Figure 5: Power (W) over Current (mA) of a single channel of PM23.

6 EMC Measurements

Notable conducted line emissions where not measureable.

7 Case

The case drawing is shown in Figure 6.

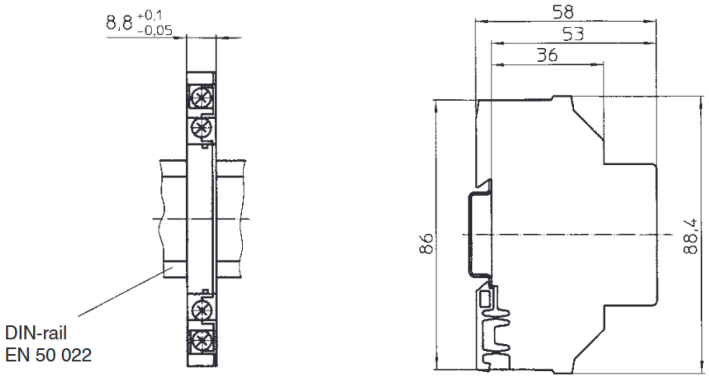

Figure 6: Product case.

8 Product label

The label for the PM23 is depicted in the following Figure 7.

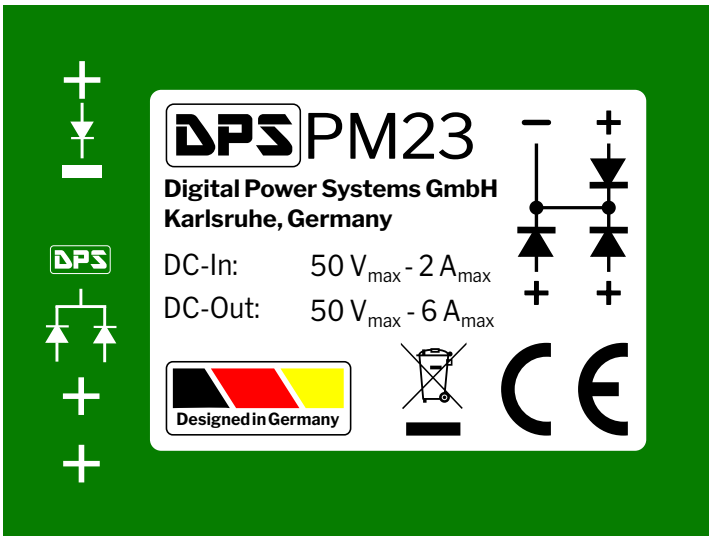

Figure 7: The product label of the PM23.

9 Document

9.1 Datasheet Quality

Digital Power Systems aims for the highest datasheet quality. We value your feedback to improve this document. Please email:

`datasheet (ät) digitalpowersystems (döt) eu`

9.2 Revision History

The revision history is depicted in the following table.

Date	Changes in Revision
5.4.2024	Datasheet released

9.3 Contact Information

This is a product of the Digital Power Systems GmbH (DPS).

Digital Power Systems GmbH
Haid- und Neu Str. 7
76131 Karlsruhe, Germany

Visit out website: www.digitalpowersystems.eu