

DC/DC converter  
3.3 V/15 A output  
48 V input

### Key Features

- 50 W output power
- Surface mountable
- Efficiency typ. 90 %
- Meets lead-free soldering process (260 °C)
- Low profile, 7.5 mm (0.295 in.)
- Negative or Positive Remote Control
- Remote sense



The PKD 4000 SI series of DC/DC power modules are intended to be used as distributed power sources in decentralized 48/60VDC power systems. The PKD series uses a ceramic substrate with thickfilm technology and a high degree of silicon integration. That, together with the electrical design using synchronous rectification gives good thermal management, high reliability and high efficiency.

The high efficiency makes it possible to operate over a wide temperature range without a heatsink. Excellent thermal management is also achieved through the use

of the ceramic substrate and a lead-frame with a large amount of pin connections to the board. The high reliability and the low profile of the PKD series makes them particularly suited for Information Technology and Telecom (IT&T) applications with board spacing down to 15mm (0.6 in.).

These products are manufactured using highly automated manufacturing lines with a world-class quality commitment and a five-year warranty.

Ericsson Power Modules AB is an ISO 9001/14001 certified supplier.

## Key data

$T_C = -25 \dots +90$  and  $V_I = 36 \dots 75$  V unless otherwise specified.

### General

Characteristics	Symbol	Conditions	Min	Typ	Max	Unit
Efficiency	$\eta$	$I_{Omax}$ , $V_I = 53$ V, $T_C = 25^\circ\text{C}$	88	90		%
Power dissipation	$P_d$	$I_{Omax}$ , $V_I = 53$ V, $T_C = 25^\circ\text{C}$			6.7	W
Input to Output Isolation					1500	VDC
Switching frequency	$f_s$		175	180	185	kHz

### Input

Characteristics	Symbol	Conditions	Min	Typ	Max	Unit
Input Voltage	$V_I$		36	53	75	V

### Output

Characteristics	Symbol	Conditions	Min	Typ	Max	Unit
Output voltage initial settings	$V_{OI}$	$I_{Omax}$ , $V_I = 53$ V, $T_C = 25^\circ\text{C}$	3.28	3.30	3.32	V
Output voltage adjust range	$V_{Oadj}$	$I_O = 0.1 \dots 1.0 \times I_{Omax}$	3.0		3.6	V
Output ripple & noise	$V_{Oac}$	$I_{Omax}$ , 20 Hz ... 5 MHz		50	100	mVp-p
Line regulation		$I_{Omax}$			5	mV
Load regulation		$I_O = 0.01 \dots 1.0 \times I_{Omax}$ , $V_I = 53$ V			5	mV
Load transient recovery time	$T_{tr}$	$I_O = 0.1 \dots 1.0 \times I_{Omax}$ , $V_I = 53$ V, step = 50 %		100		$\mu\text{s}$
Load transient voltage	$V_{tr}$	$I_O = 0.1 \dots 1.0 \times I_{Omax}$ , $V_I = 53$ V, step = 50 %, $dI/dt = 5$ A/ $\mu\text{s}$		+300 -300		mV
Ramp-up time	$T_r$	$I_O = 0.1 \dots 1.0 \times I_{Omax}$ , $V_I = 53$ V		20		ms
Start-up time	$T_s$	$I_O = 0.1 \dots 1.0 \times I_{Omax}$ , $V_I = 53$ V		25		ms
Output current	$I_O$				15	A
Max output power	$P_{Omax}$	Calculated value	50			W
Current limiting threshold	$I_{lim}$	$T_C < T_C \text{ max}$		18		A

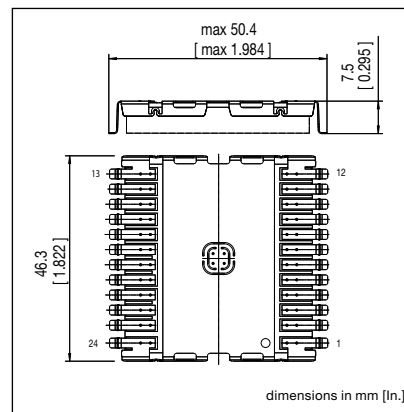
### Connections

Pin	Symbol	Description
2	+In	Positive input
3	-In	Negative input
5	RC	Remote control pin
6	RC logic	Select pin for neg/pos RC <sup>2)</sup>
15	+Sen	Positive remote sense
16	Vadj	Output voltage adjust
17	-Sen	Negative remote sense
18-20	-Out	Negative output
21-23	+Out	Positive output
1,12,13,24 Case connection <sup>1)</sup>		
4,7-11,14 Not connected		

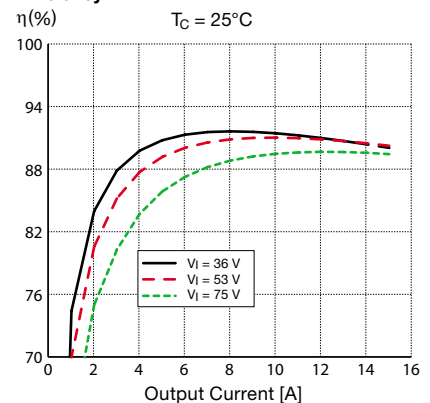
<sup>1)</sup> Case is floating and may be connected either to  $+V_{In}$  ;  $-V_{In}$  ;  $+V_{out}$  ;  $-V_{out}$  to optimize EMI performance.

<sup>2)</sup> Connect to -In for negative logic or leave open for positive logic on RC pin.

### Mechanical data



### Efficiency



Advanced product information is based on limited pre-production data. Information provided is believed to be accurate and reliable. Ericsson Power Modules reserves the right to make changes to the product, or information contained herein, without notice.

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### Advanced Product Information

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