

DC/DC regulator 12V / 5V at 16A

Key Features

- Surface mountable
- Low profile, max 8.5mm (0.33 in)
- High efficiency
- Low weight
- Designed For Environment, DfE
- Lead-free / Bromine-free
- Robust design
- Over temperature protection
- Power Good signal
- Wide input, 9 - 16 V
- Stable operation under all conditions



The PMA series of DC/DC regulators (POL) are intended to be used as local distributed power sources in distributed power architecture level 4. The PMA series use a ceramic substrate with fine-pitch components technology and a high degree of silicon integration. Together with the electrical design using low Rds-On MOSFET, this provides excellent thermal management, high reliability and high efficiency. The high efficiency makes it possible to operate over a wide temperature range, without adding any external heat dissipator. At forced convection cooling >1 m/s (200 lfm), the PMA typically delivers full power up to +80 °C ambient temperature.

The high reliability and the low profile of the PMA series makes them particularly suited for the communications equipment of today and tomorrow and applications with board spacing down to 15 mm (0.6 in). The flat case top enables pick-and-place handling and provides a surface for attachment to cooling surfaces in areas with limited air flow. These products are manufactured using the most advanced technologies and materials to comply with environmental requirements. Designed to meet high reliability requirements of systems manufacturers, the PMA responds to world-class specifications. Ericsson Power Modules is an ISO 9001/14001 certified supplier.

Key data

$T_C = -30 \dots +90$ and $V_I = 9 \dots 16V$ unless otherwise specified. $V_{Inom} = 12V$, $I_{Omax} = 16A$

General

Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Efficiency	η	I_{Omax}, V_{Inom}	93	94	95	%
Power dissipation	P_d	I_{Omax}			6.4	W
Switching frequency	f_s		270	300	330	kHz

Input

Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Input Voltage	V_I		9	12	16	V

Output

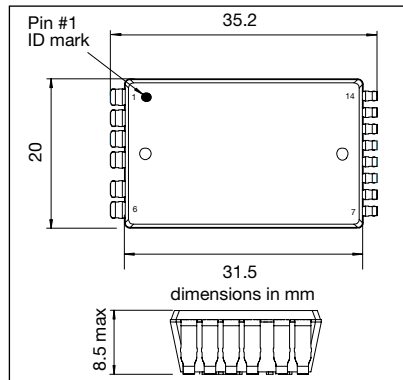
Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Output voltage tolerance band	V_O	I_{Omax}, V_{Inom}	4.8	5	5.2	V
Output voltage adjust range	V_{Oadj}	I_{Omax}, V_{Inom}	4.5		5.5	V
Output ripple & noise	V_{Oac}	$V_{Onom}, I_{Omax}, 20Hz \dots 5MHz$		50		mV _{p-p}
Line regulation		I_{Omax}		10		mV
Load regulation		$I_O = (0.01 \dots 1) \times I_{Omax}, V_{Inom}$		20		mV
Load transient recovery time	t_{tr}	$V_{Inom}, \text{step} = 25 - 75\% \times I_{Omax}$		40		μs
Load transient voltage	V_{Tr}	$V_{Inom}, \text{step} = 25 - 75\% \times I_{Omax}$		200		mV
Ramp-up time	t_r	$I_O = 16A, V_{Inom}, 0.1 \dots 0.9 \times V_O$		4		ms
Start-up time	t_s	$I_O = 16A, V_{Inom}, \text{From } V_I \text{ connection to } V_O = 0.9 \times V_{OI}$		3		ms
Output current	I_O		0		16	A
Max output power	P_{Omax}	Calculated value	80			W
Current limiting threshold	I_{lim}			25		A

Connections

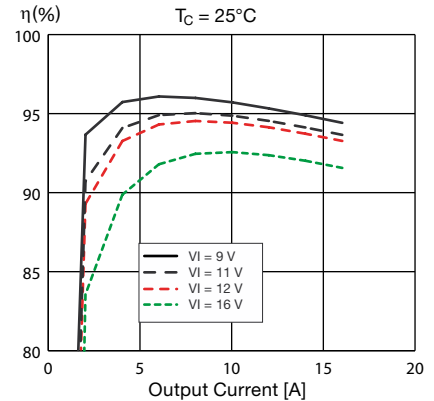
Pin	Designation	Function
1-2	+Out	Positive output
3-4	GND	Ground
5-6	+In	Positive input
7	NC	
8	NC	
9	NC	
10	RC	Remote control
11	RC select	Select pin for neg./ pos. logic ¹⁾
12	V_{adj}	Output voltage adjust
13	+Sen	Remote sensing
14	PGOOD	Power good signal

1) Connect to GND 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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