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

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

The PMA series of DC/DC regulators 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 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). These products are manufactured using the most advanced technologies and material to comply with environmental requirements. Designed to meet high reliability requirements of systems manufacturers, the PMA responds to world-class specifications and has a five-year warranty. Ericsson Power Modules is an ISO 9001/14001 certified supplier.

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Key data

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

General

Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Efficiency		I_{Omax}, V_{Inom}	90	92	94	%
Power dissipation	P_d	I_{Omax}			7.0	W
Switching frequency	f_s		330	350	370	kHz

Input

Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Input Voltage	V_I		9.0	12.0	16.0	V

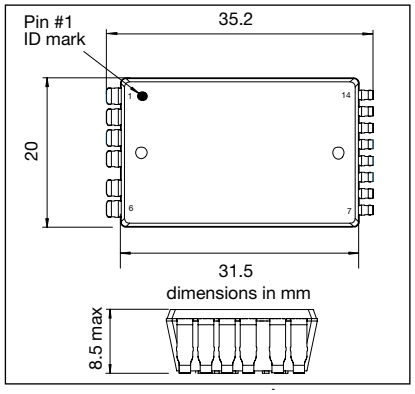
Output

Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Output voltage tolerance band	V_O	I_{Omax}, V_{Inom}	4.9	5.0	5.1	V
Output voltage adjust range	V_{Oadj}	I_{Omax}, V_{Inom}	4.5		5.5	V
Output ripple & noise	V_{Oac}	V_{Onom}, I_{Onom}, 20Hz ... 5MHz		110		mV_{p-p}
Line regulation		I_{Omax}		10		mV
Load regulation		I_O = (0.01...1) × I_{Omax}, V_{Inom}		20		mV
Load transient recovery time	t_{tr}	V_{Inom}, step = 25 - 75%		20		µs
Load transient voltage	V_{tr}	V_{Inom}, step = 25 - 75%		200		mV
Ramp-up time	t_r	I_O = 12A, V_{Inom}, 0.1 ... 0.9 × V_O		1		ms
Start-up time	t_s	I_O = 12A, V_{Inom}, From V_I connection to V_O = 0.9 × V_{Oi}		2		ms
Output current	I_O		0		12	A
Max output power	P_{Omax}	Calculated value	60			W
Current limiting threshold	I_{lim}			19		A

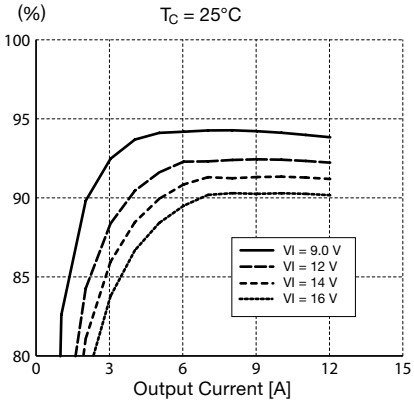
Connections

Pin	Designation	Function
1-2	+Out	Positive output
3-4	GND	Ground
5-6	+In	Positive input
7	NC	Not connected
8	NC	Not connected
9	NC	Not connected
10	RC	Remote control
11	RC select	Select pin for neg./ pos. logic[1)]
12	V_{adj}	Output voltage adjust
13	+S	Remote sensing
14	NC	Not connected

Mechanical data



Efficiency



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Advanced Product Information

EN/LZT 146 023 R1B