

Advanced Specification

15-20A DC/DC Power Modules

48V Input, 1.5V Output

- *High efficiency 85% Typ (1.5V) at full load*
- *Fast dynamic response, 100 μ s, ± 150 mV_{peak} Typ*
- *Low output ripple, 70 mV_{p-p} Typ*
- *High power density, 61 W/in³*
- *Wide input voltage range (36-75V)*
- *Industry standard footprint & pin-out*
- *1,500Vdc isolation voltage*
- *Max case temperature +100°C*
- *Designed to meet UL 1950 and EN 60950*

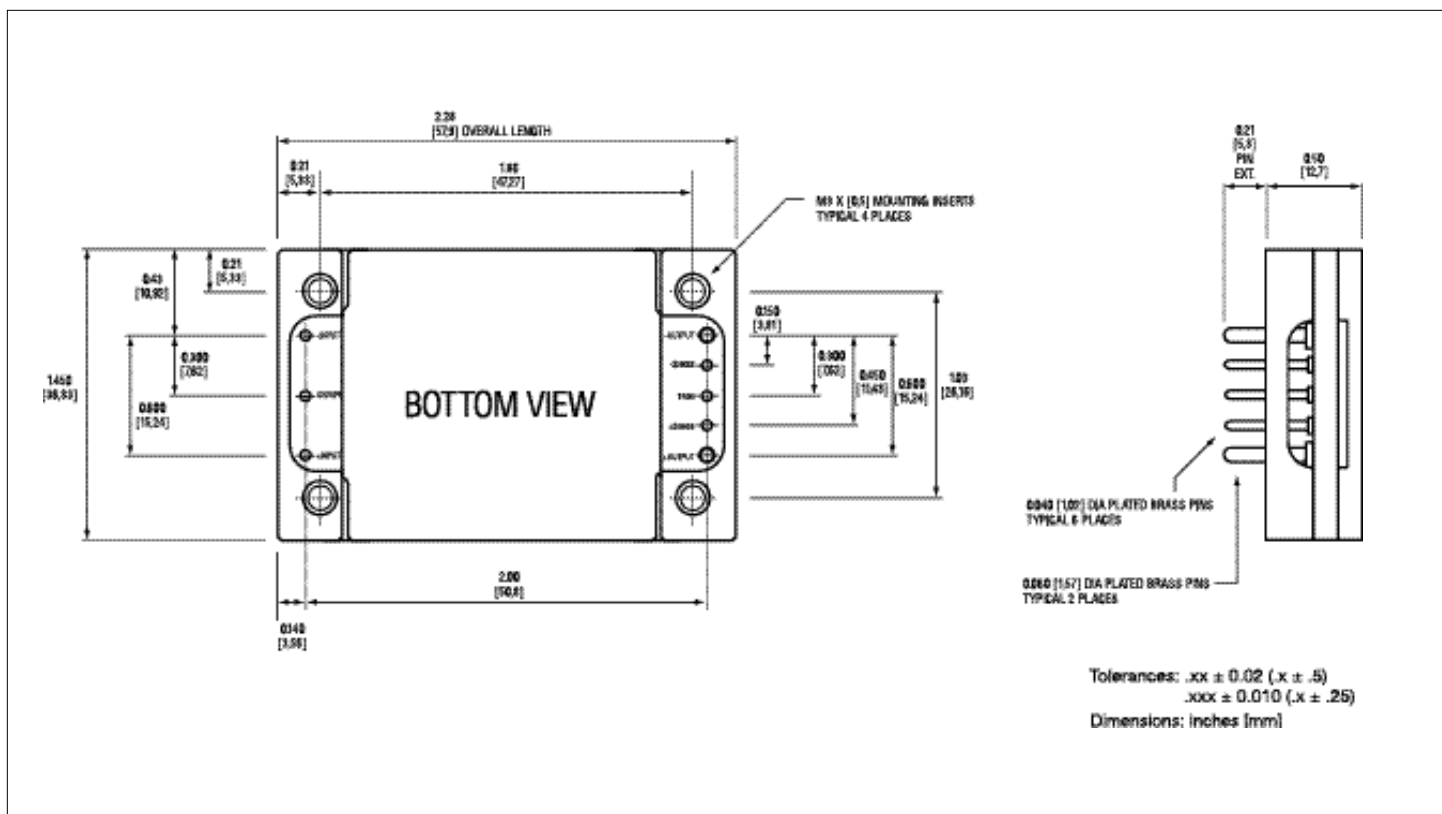


The PKM series represents a "third generation" of High Density DC/DC Power Modules in an industry standard package with unparalleled power densities and efficiencies. These breakthrough performance features have been achieved by using the most advanced patented topology, utilizing integrated magnetics and synchronous rectification on a low resistivity multilayer PCB. The product features fast dynamic response times and low output ripple, which are important parameters when supplying low voltage logics. The PKM series is especially suited for limited board space and high dynamic load applications such as demanding microprocessors.

Ericsson's PKM Power Modules address the converging "New Telecoms" market by specifying the input voltage range in accordance with ETSI specifications. The PKM series also offers over-voltage protection, under-voltage protection, over-temperature protection, soft-start and is short circuit proof.

These products are manufactured using highly automated manufacturing lines with a world-class quality commitment and a five-year warranty. Ericsson Components AB has been an ISO 9001 certified supplier since 1991.

For a complete product program please reference the back cover.



PKM 4318 P10A (30W) $T_C = -40...+100^{\circ}\text{C}$, $V_I = 36...75\text{ V}$ dc unless otherwise specified.

Output

Characteristics		Conditions	Output			Unit
			min	typ	max	
V_{Oi}	Output voltage initial setting and accuracy	$T_C = +25^{\circ}\text{C}$, $V_I = 53\text{V}$, $I_O = I_{Omax}$	1.48	1.5	1.52	V
	Output adjust range	$I_O = 0$ to I_{Omax}	1.2		1.66	V
I_O	Output current		0		20	A
V_O	Output voltage tolerance band	$I_O = 0$ to I_{Omax}	1.43		1.58	V
	Line regulation	$I_O = I_{Omax}$		3	10	mV
	Load regulation	$V_I = 53\text{V}$, $I_O = 0$ to I_{Omax}		3	10	mV
V_{Tr}	Load transient voltage deviation	Load step = $0.25 \times I_{Omax}$ $dI/dt = 1\text{A}/\mu\text{s}$	± 150			mV _{peak}
t_{Tr}	Load transient recovery time		100			μs
t_s	Start-up time	From V_I connection to $V_O = 0.9 \times V_{Onom}$		25	40	ms
I_{lim}	Current limit threshold	$V_O = 0.96 V_{Onom}$ @ $T_C < 100^{\circ}\text{C}$	21	24	26	A
I_{SC}	Short circuit current			24	28	A
V_{Oac}	Output ripple and noise	$I_O = I_{Omax}$ $f \leq 20\text{ MHz}$		70	150	mVp-p
SVR	Supply voltage rejection (ac)	$f < 1\text{kHz}$	-53			dB
OVP	Over voltage protection	$V_{in} = 50\text{V}$	2.2	2.5	2.8	V

Miscellaneous

Characteristics		Conditions	min	typ	max	Unit
η	Efficiency	$T_A = +25^{\circ}\text{C}$, $V_I = 53\text{V}$, $I_O = I_{Omax}$		85		%
P_d	Power dissipation	$I_O = I_{Omax}$, $V_I = 53\text{V}$		5.3		W

Absolute Maximum Ratings

Characteristics		min	max	Unit
T_C	Case temperature @ max output power	-40	+100	$^{\circ}\text{C}$
T_S	Storage temperature	-40	+125	$^{\circ}\text{C}$
V_I	Continuous input voltage	-0.5	+75	Vdc
V_{ISO}	Isolation voltage (input to output test voltage)	1,500		Vdc
V_{RC}	Remote control voltage		12	Vdc
I^2t	Inrush transient		1	A^2s

Stress in excess of Absolute Maximum Ratings may cause permanent damage. Absolute Maximum Ratings, sometimes referred to as "no destruction limits," are normally tested with one parameter at a time exceeding the limits of output data or electrical characteristics. If exposed to stress above these limits, function and performance may degrade in an unspecified manner.

Product Program

V_I	V_O/I_O	P_{Omax}	Ordering Number
48/60 V	1.5V/20A	30W	PKM 4318 PIOA
48/60 V	1.5V/15A	22.5W	PKM 4218 PIOA

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Advanced Specification

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