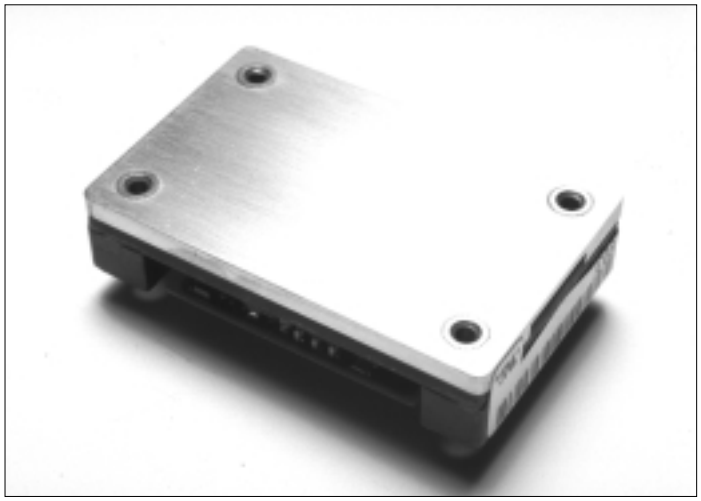
Advanced Specification
15-20A DC/DC Power Modules
48V Input, 1.8V Output

- *High efficiency 88% Typ (15A) at full load*
- *Fast dynamic response, 100µs, ±150 mVpeak Typ*
- *Low output ripple, 70 mVp-p Typ*
- *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 quarter-brick 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 Microelectronics has been an ISO 9001 certified supplier since 1991.

For a complete product program please reference the back cover.

ERICSSON

General

Connections

Designation	Function
-In	Negative input
RC	Remote control (primary). To turn-on and turn-off the output
+In	Positive input
-Out	Negative output
-Sen	Negative remote sense
Trim	Output voltage adjust
+Sen	Positive remote sense
+Out	Positive output

Note: If the remote sense is not needed the -Sen should be connected to -Out and +Sen should be connected to +Out.

Weight
55 grams

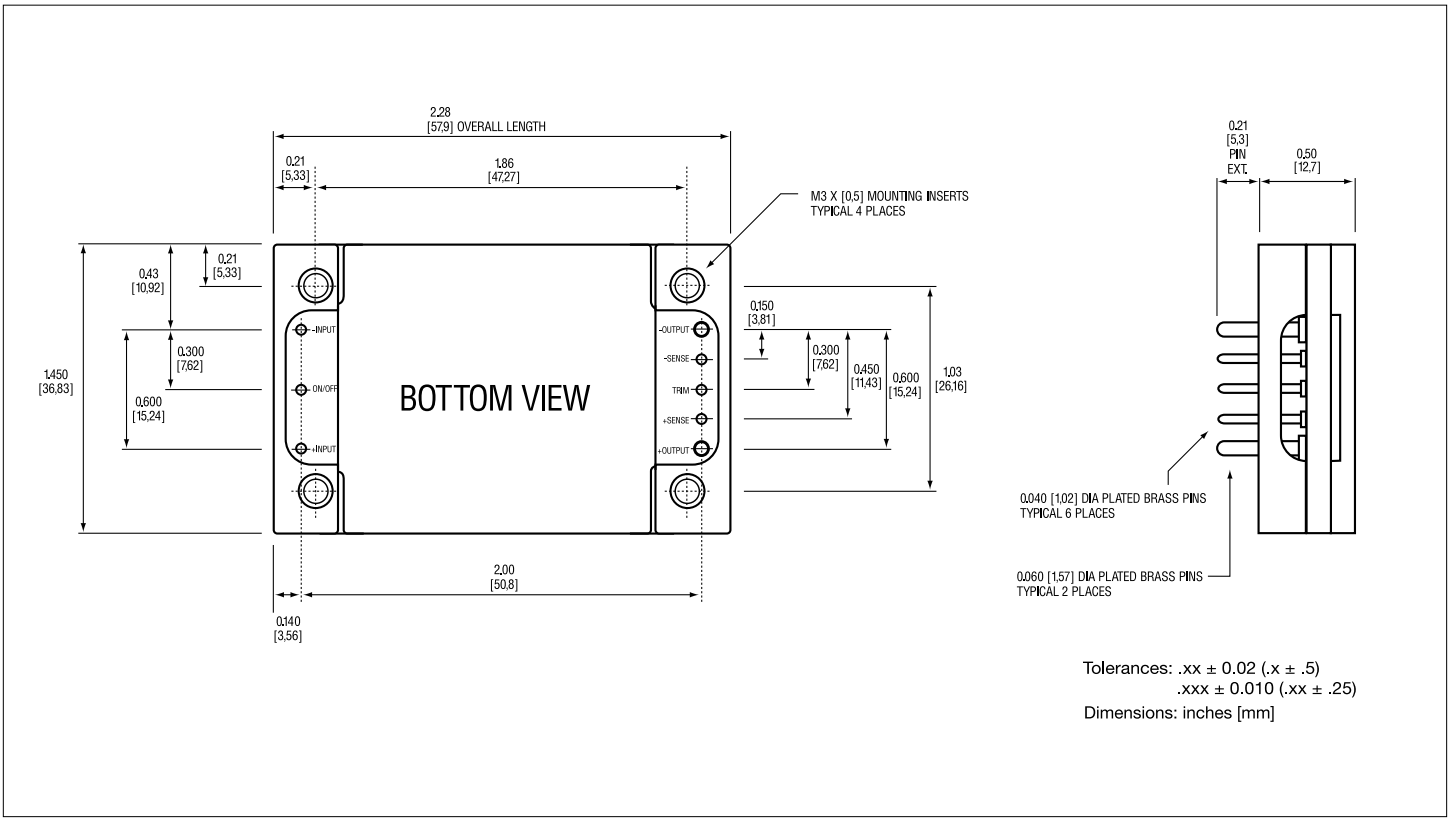
Case
Aluminum baseplate with metal standoffs.

Pins
Pin material: Brass
Pin plating: Tin/Lead over Nickel.

Input $T_C < T_{Cmax}$

Characteristics		Conditions		min	typ	max	Unit
V_I	Input voltage range			36		75	Vdc
V_{Ioff}	Turn-off input voltage	Ramping from higher voltage		31	33		Vdc
V_{Ion}	Turn-on input voltage	Ramping from lower voltage			34	36	Vdc
C_I	Input capacitance				1.5		µF
I_{Iac}	Reflected ripple current	5 Hz to 20 MHz			10		mA p-p
I_{Imax}	Maximum input current	$V_I = V_{I\ min}$	27 W 36 W			1.0 1.4	A
P_{Ii}	Input idling power		$I_O = 0$		2.6	3.6	W
P_{RC}	Input stand-by power (turned off with RC)	$V_I = 50V$	RC open		0.5	1.0	W
TRIM	Maximum input voltage on trim pin					6	Vdc

Mechanical Data



Tolerances: .xx ± 0.02 (.x ± .5)
.xxx ± 0.010 (.xx ± .25)
Dimensions: inches [mm]

PKM 4318 PI/PKM 4218 PI T_C = -40...+100°C, V_I = 36...75 V dc unless otherwise specified.

Output

Characteristics		Conditions	Device	Output			Unit
				min	typ	max	
V_{Oi}	Output voltage initial setting and accuracy	T_C = +25°C, V_I = 53V, I_O = I_{Omax}	All	1.77	1.8	1.83	V
	Output adjust range	I_O = 0 to I_{Omax}	All	1.44		2.0	V
I_O	Output current		PKM 4318 PI PKM 4218 PI	0 0		20 15	A
V_O	Output voltage tolerance band	I_O = 0 to I_{Omax}	All	1.71		1.89	V
	Line regulation	I_O = I_{Omax}	All		3	10	mV
	Load regulation	V_I = 53V, I_O = 0 to I_{Omax}	All		3	10	mV
V_{tr}	Load transient voltage deviation	Load step = 0.25 x I_{Omax} dI/dt = 1A/µs	All		±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 x V_{Onom}	All		25	40	ms
I_{lim}	Current limit threshold	V_O = 0.96 V_{Onom} @ T_C<100°C	PKM 4318 PI PKM 4218 PI	21	24	26	A
I_{SC}	Short circuit current		PKM 4318 PI PKM 4218 PI		24	28	A
V_{Oac}	Output ripple and noise	I_O = I_{Omax} f ≤ 20 MHz	All		70	150	mVp-p
SVR	Supply voltage rejection (ac)	f<1kHz	All	-53			dB
OVP	Over voltage protection	Vin = 50V	All	2.5	2.8	3.0	V

Miscellaneous

Characteristics		Conditions	Device	min	typ	max	Unit
η	Efficiency	T_A = +25°C, V_I = 53V, I_O = I_{Omax}	PKM 4318 PI PKM 4218 PI		87 88		%
P_d	Power dissipation	I_O = I_{Omax}, V_I = 53V	PKM 4318 PI PKM 4218 PI		5.4 3.7		W

Absolute Maximum Ratings

Characteristics		min	max	Unit
T_C	Case temperature @ max output power	-40	+100	°C
T_S	Storage temperature	-40	+125	°C
V_I	Continuous input voltage	-0.5	+80	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	1.8V/20A	36W	PKM 4318 PI
48/60 V	1.8V/15A	27W	PKM 4218 PI

The PKM 4000 DC/DC power modules will be available with the different options listed in the Product Options table.

Please check with the factory for availability.

Product Options

Option	Suffix	Example
Negative remote on/off logic	–	PKM 4318 PI
Positive remote on/off logic	P	PKM 4318 PIP
Lead length of 0.145" ± 0.010"	LA	PKM 4318 PILA

Ericsson Microelectronics' Sales Offices:

Brazil:	Phone: +55 11 681 0040	Fax: +55 11 681 2051
Denmark:	Phone: +45 33 883 109	Fax: +45 33 883 105
Finland:	Phone: +358 9 299 4098	Fax: +358 9 299 4188
France:	Phone: +33 1 4083 7720	Fax: +33 1 4083 7741
Germany:	Phone: +49 211 534 1516	Fax: +49 211 534 1525
Great Britain:	Phone: +44 1793 488 300	Fax: +44 1793 488 301
Hong Kong:	Phone: +852 2590 2356	Fax: +852 2590 7152
Italy:	Phone: +39 2 7014 4203	Fax: +39 2 7014 4260
Japan:	Phone: +81 3 5216 9091	Fax: +81 3 5216 9096
Norway:	Phone: +47 66 841 906	Fax: +47 66 841 909
Russia:	Phone: +7 095 247 6211	Fax: +7 095 247 6212
Spain:	Phone: +34 91 339 1858	Fax: +34 91 339 3145
Sweden:	Phone: +46 8 721 6258	Fax: +46 8 721 7001
United States:	Phone: +1 877 374 2642	Fax: +1 972 583 8355

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Ericsson Inc.
Microelectronics
701 North Glenville Drive
Richardson, Texas 75081
Phone: 877-ERICMIC
www.ericsson.com/micro

Advanced Specification

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