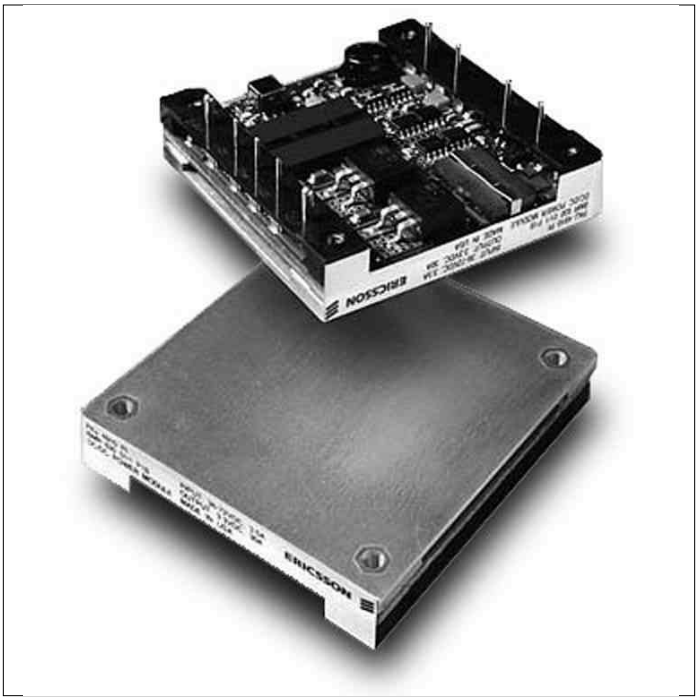
Advanced Specification
6.3-12.5A DC/DC Power Modules
48V Input, 12V Output

- *High efficiency 93% Typ (12V) at full load*
- *Industry standard footprint*
- *Max case temperature +100°C*
- *Wide input voltage range according to ETSI specifications*
- *High power density, up to 55W/in³*
- *1,500 Vdc isolation voltage*
- *MTBF > 3 million hours in accordance with Bellcore TR-332*



The PKJ series represents a "third generation" of High Density DC/DC Power Modules providing 90% efficiency. To achieve this high efficiency, Ericsson uses proprietary drive and control circuits with planar magnetics and low resistivity multilayer PCB technology, and a patent pending topology with active rectification. The PKJ series can be used without bulky and height consuming heatsinks, resulting in a lower total cost. This also provides narrow board spacing for electronic, shelf based applications.

The products are in the industry standard package size and offer a beneficial alternative to competing products on the market. Because for certain applications they may not require heatsinks, they are ideal for cost sensitive or high-density applications.

The PKJ series also offers the flexibility of using a heatsink when needed, enabling reduced airflow, extended reliability or higher ambient temperature operation in a wide range of 48V and 60V DC powered systems. Similar to other Ericsson Power Modules, the PKJ series includes an under-voltage shut down facility, protecting the associated batteries from being too deeply discharged. The PKJ series also offers over-voltage protection, over-temperature protection 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 product program please see back cover.

ERICSSON

General

Connections

Designation	Function
-In	Negative input
Case	Connected to base plate
RC	Remote control (primary). To turn-on and turn-off the output
+In	Positive input
-Out	Negative output
-Sen	Negative remote sense (if sense is not needed, connect to -Out)
Trim	Output voltage adjust
+Sen	Positive remote sense (if sense is not needed, connect to +Out)
+Out	Positive output

Weight
85 grams

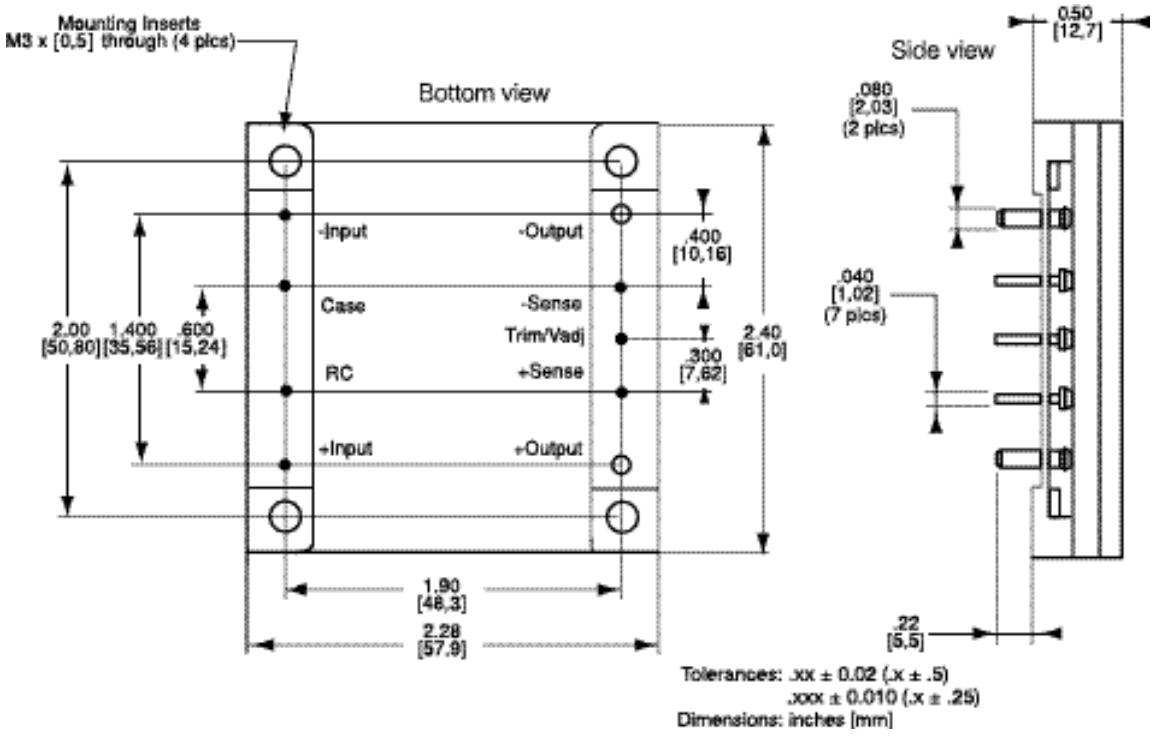
Case
Aluminum baseplate with metal standoffs.

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				2.8		µF
I_{lac}	Reflected ripple current	5 Hz to 20 MHz			20		mA p-p
I_{Imax}	Maximum input current	$V_I = V_{I\ min}$	75 W 100 W 150 W			2.4 3.2 5.3	A
P_{Ii}	Input idling power		$I_O = 0$		2.5	7.5	W
P_{RC}	Input stand-by power (turned off with RC)	$V_I = 50V$	RC open		0.05	2.5	W
TRIM	Maximum input voltage on trim pin					6	Vdc

Mechanical Data



PKJ 4113 API/PKJ 4113 PI/PKJ 4713 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	11.8	12.0	12.2	V
	Output adjust range	I_O = 0 to I_{Omax}	All	9.6		13.3	V
I_O	Output current		PKJ 4113 API PKJ 4113 PI PKJ 4713 PI	0 0 0		12.5 8.3 6.25	A
V_O	Output voltage tolerance band	I_O = 0 to I_{Omax}	All	11.64		12.36	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		±100		mV_{peak}
t_{tr}	Load transient recovery time		All		150		µs
t_s	Start-up time	From V_I connection to V_O = 0.9 x V_{Onom}	All		30	50	ms
I_{lim}	Current limit threshold	V_O = 0.96 V_{Onom} @ T_C<100°C	PKJ 4113 API PKJ 4113 PI PKJ 4713 PI	13.5 9.0 7.0	14.5 10.5 8.0	16.0 12.0 9.0	A
I_{SC}	Short circuit current		PKJ 4113 API PKJ 4113 PI PKJ 4713 PI		16.5 12.0 10.0	18 14 12	A
V_{Oac}	Output ripple and noise	I_O = I_{Omax} f ≤ 20 MHz	All		75	100	mVp-p
SVR	Supply voltage rejection (ac)	f<1kHz	All	-53			dB
OVP	Over voltage protection	Vin = 50V	All		14.9	15.5	V

Miscellaneous

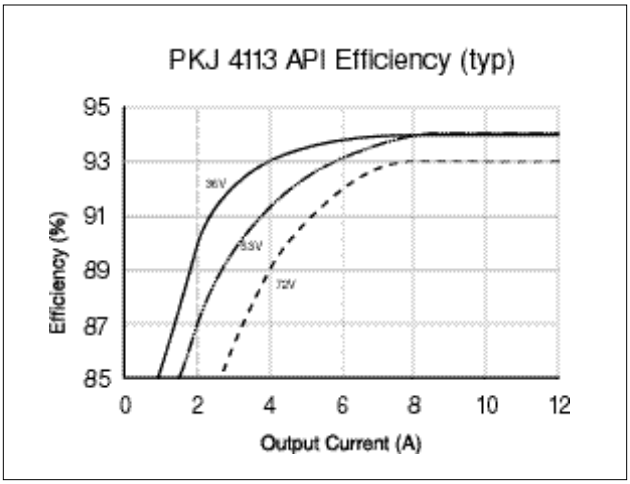
Characteristics		Conditions	Device	min	typ	max	Unit
η	Efficiency	T_A = +25°C, V_I = 53V, I_O = I_{Omax}	All		93		%
P_d	Power dissipation	I_O = I_{Omax}, V_I = 53V	PKJ 4113 API PKJ 4113 PI PKJ 4713 PI		11.3 7.5 5.6		W

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	+75	Vdc
V_{ISO}	Isolation voltage (input to output test voltage)	1,500		Vdc
V_{RC}	Remote control voltage		15	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.

Thermal Data



Product Program

V_I	V_O/I_O	P_{Omax}	Ordering Number
48/60 V	12V/12.5A	150W	PKJ 4113 API
48/60 V	12V/8.3A	100W	PKJ4113 PI
48/60 V	12V/6.25A	75W	PKJ 4713 PI

To order with Optional Remote Control add P to end of ordering number.
For example: PKJ 4719 PIP

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Advanced Specification

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