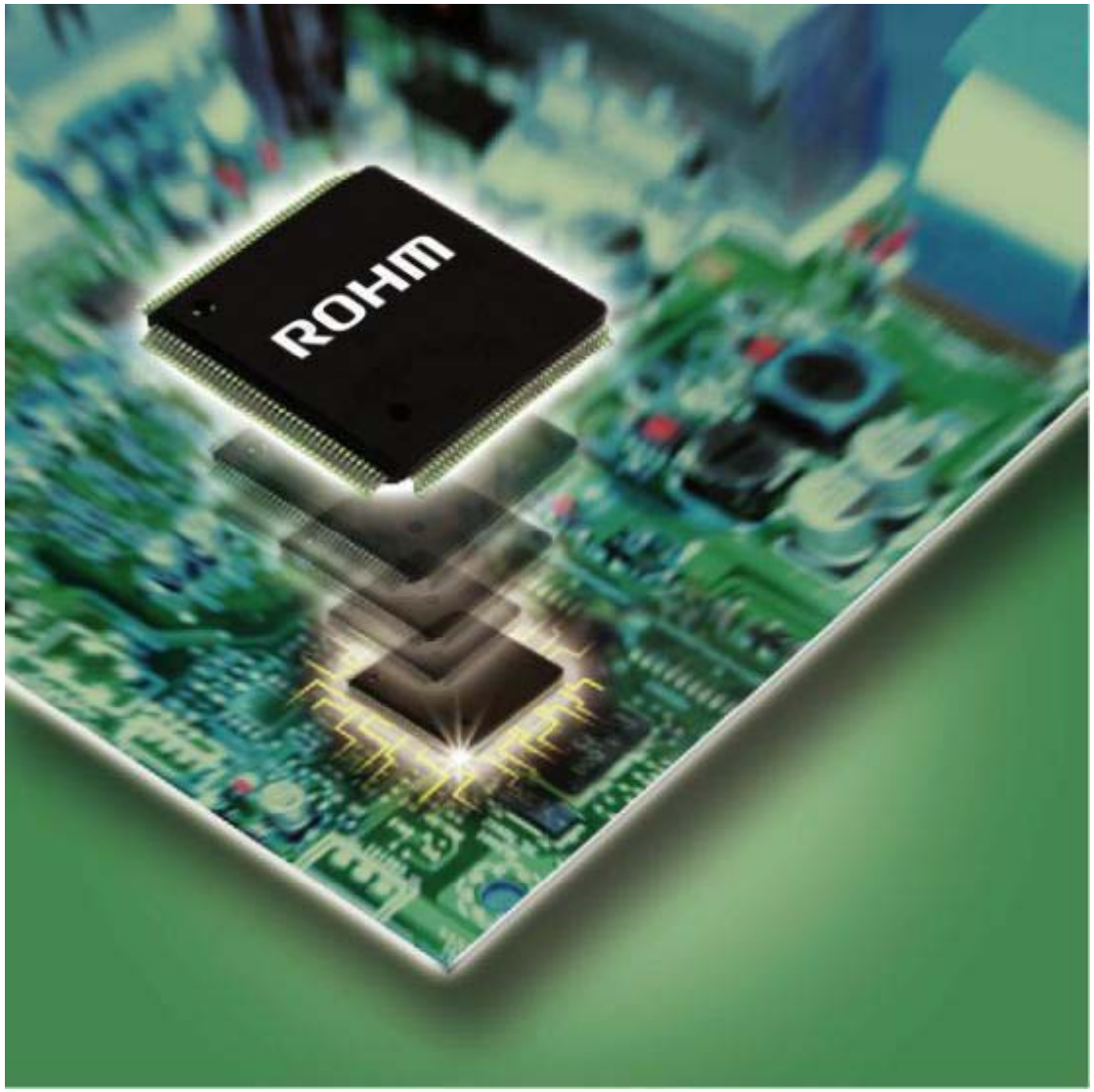


ROHM
SEMICONDUCTOR

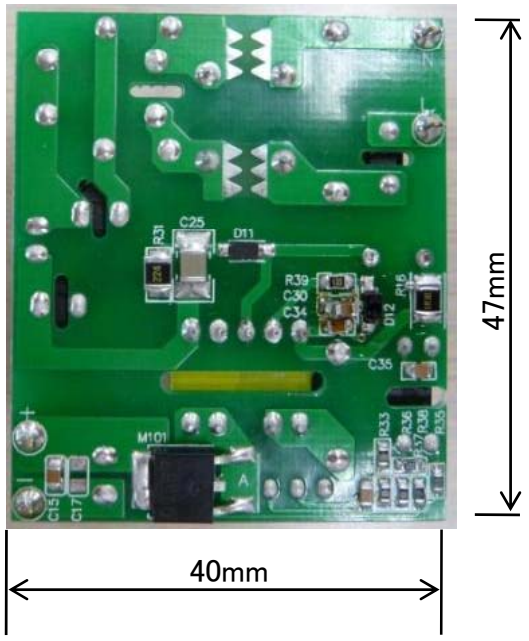
Innovations Embedded

Board No:BM2P094FEVK-001

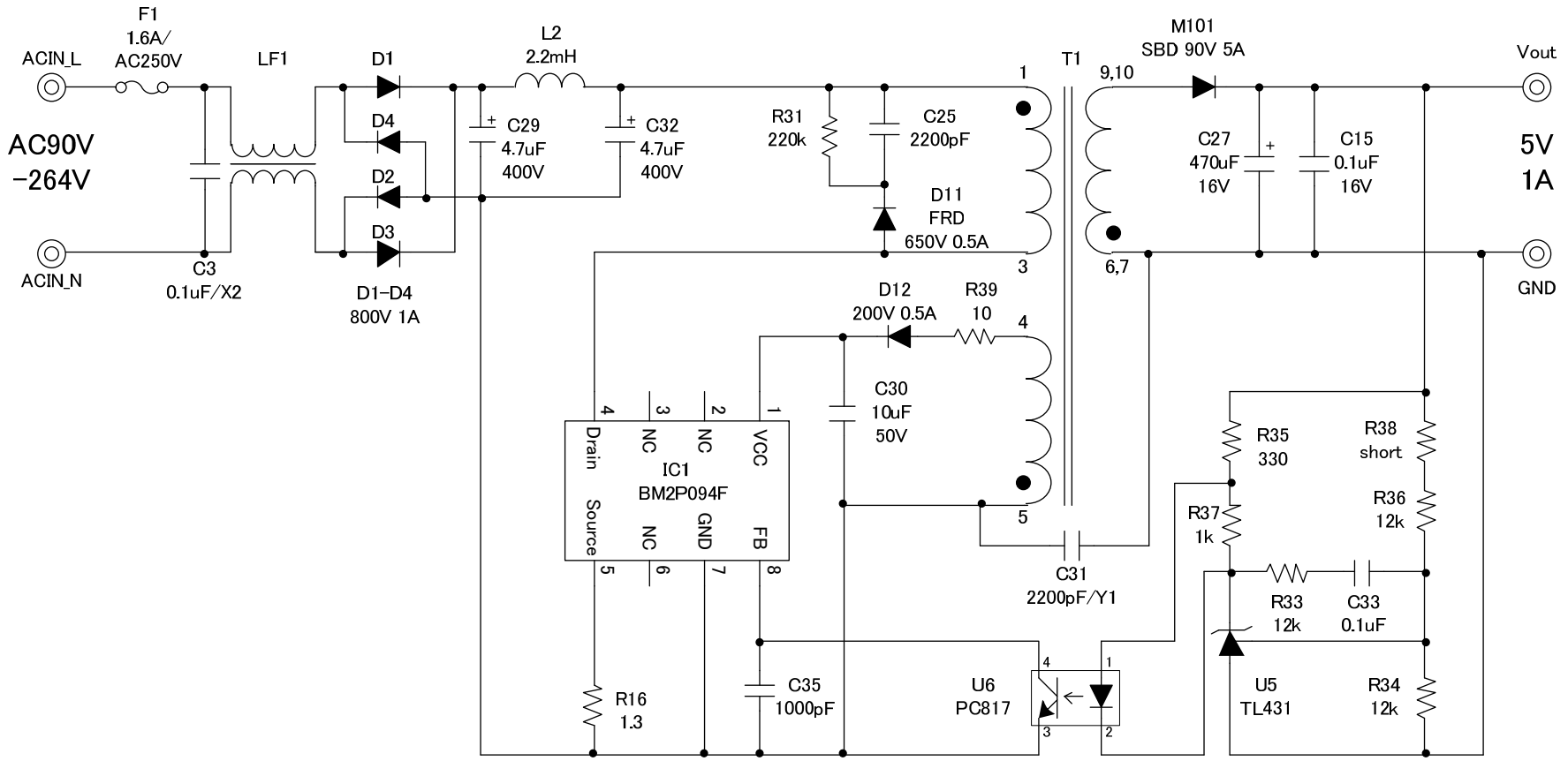
ROHM Co.,Ltd.

Reference Board Specification

Description		Symbol	Min	Typ	Max	Unit	Condition
Input	Voltage	Vin	90		264	Vac	
	Frequency	fac	47	50/60	63	Hz	
	No Load Input Power				50	mW	Vin：AC100V/230V
Output	Voltage	Vout	4.75	5	5.25	V	
	Current	Iout	1			A	
	Ripple Voltage	Vripple			100	mV	20MHz Bandwidth
	Efficiency		70			%	Output：5V 1A



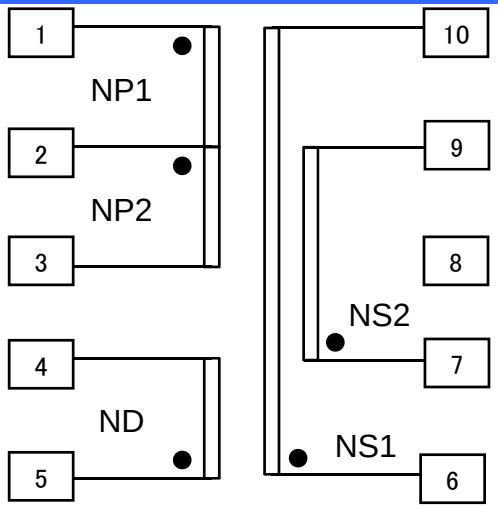
Application Schematic

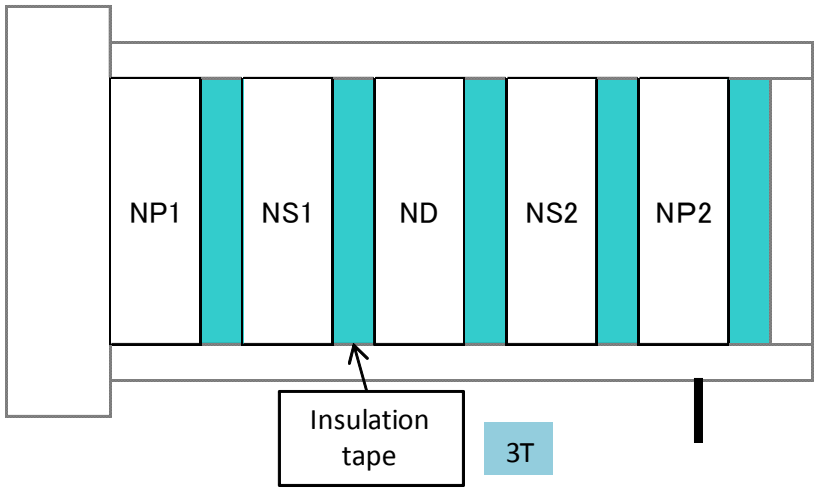


Component List

Item	Spec	Parts name	Maker
C3	0.1uF/X2	0.1uF/X2	
C15	0.1uF/25V	0.1uF/50V 1608	
C25	2200pF/500V	2200pF/1kV 3225	
C27	Low-Z 470uF/16V	Low-Z 470uF/16V	
C29	4.7uF/400V	4.7uF/400V	
C30	10uF/50V	4.7uF/50V 2012 X2	
C31	2200pF/Y1	2200pF/Y1	
C32	4.7uF/400V	4.7uF/400V	
C33	0.1uF/25V	0.1uF/50V 1608	
C35	1000pF/16V	1000pF/50V 1608	
D1	800V/1A	1N4007	
D2	800V/1A	1N4007	
D3	800V/1A	1N4007	
D4	800V/1A	1N4007	
D11	FRD 650V 0.5A	FRD 800V 1A	
D12	200V 0.5A	RR264M-400	Rohm
F1		1.6A/AC250V	
IC1		BM2P094F	Rohm
L2	2.2mH	2.2mH	
LF1		SU9VF-02100	NEC Tokin
M101	SBD 90V 5A	RB095B-90	Rohm
R16	1.3Ω/0.5W	MCR25JZHF1R30	Rohm
R31	220kΩ/0.25W	MCR25JZHJ224	Rohm
R33	12kΩ	MCR03ERTF1202	Rohm
R34	12kΩ	MCR03ERTF1202	Rohm
R35	330Ω	MCR03ERTJ331	Rohm
R36	12kΩ	MCR03ERTF1202	Rohm
R37	1kΩ	MCR03ERTJ102	Rohm
R38	0Ω	MCR03ERTJ000	Rohm
R39	10Ω	MCR10ERTJ100	Rohm
T1	EE13	YPP1181	Tomita
U5		TL431	
U6		PC817	

Transformer:YPP1181 （EE13）





Core： Tomita 2G8-EE13x12x6.3 or compatible
Bobbin： Tomita TBB347 Vertical/Terminal Pins 5-5(10pins) or compatible
AL-Value： 79.1 nH/N^2
Inductance(1-3pin)： 1.336 mH±15%

Coil	Terminal	Turns	Wire	Winding Method
NP1	‘1-2	65	2UEW 0.2	FIT（密）
NS1	‘6-10	11	TEX-E 0.4	1 Layer FIT（密）
ND	‘5-4	31	2UEW 0.2	1 Layer FIT（密）
NS2	‘7-9	11	TEX-E 0.4	1 Layer FIT（密）
NP2	‘2-3	65	2UEW 0.2	FIT（密）

耐圧 P-S :AC3.0KVrms 1MIN. 2mA or AC3.6kVrms 1s 2mA
PS-CORE:AC1.5KVrms 1MIN. 2mA or AC1.8kVrms 1s 2mA
IR : P-S,PS-CORE 100 MΩ MIN. at DC 500V

Winding beginning：Fix by barrier tape
Winding end：Interpose the line drawn in a right angle
Winding direction：Unification

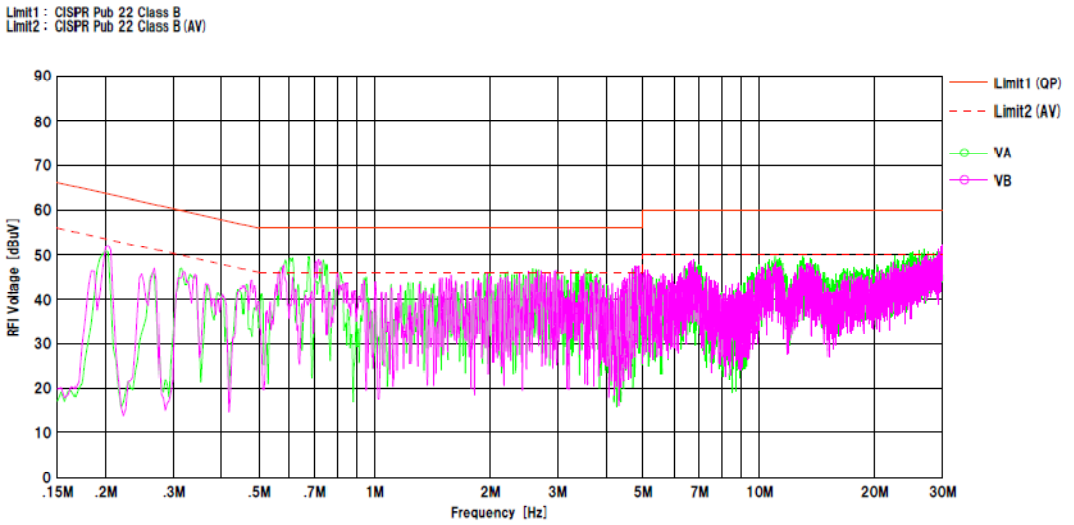
Measurement Data

Board No:BM2P094FEVK-001

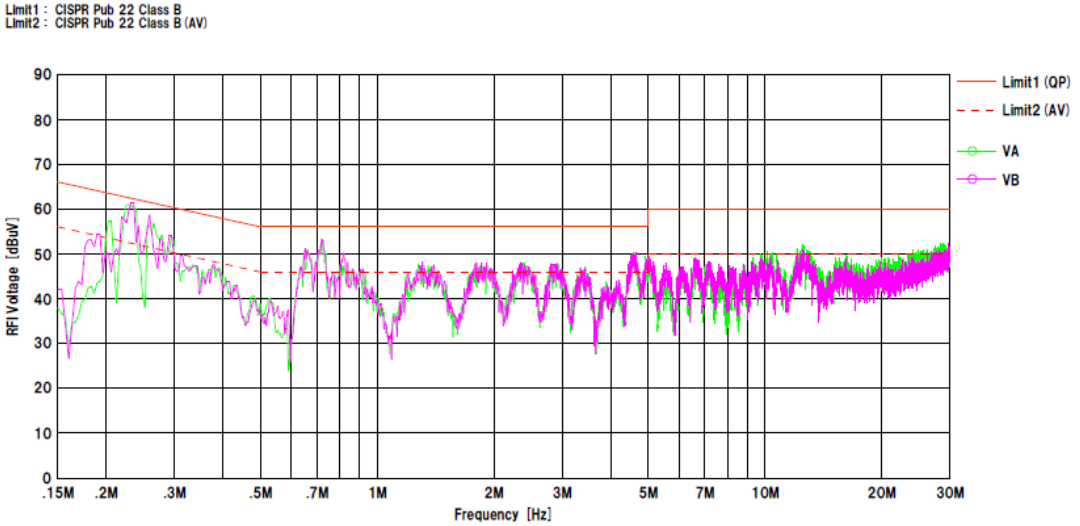
Vin(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	η(%)
90	0.034	5.007	0	0	–
	0.105	5.007	0.01	0.050	47.5
	1.611	5.003	0.25	1.251	77.6
	3.222	5.000	0.5	2.500	77.6
	4.956	4.998	0.75	3.748	75.6
	6.751	4.996	1	4.996	74.0
100	0.034	5.007	0	0	–
	0.105	5.007	0.01	0.050	47.7
	1.609	5.002	0.25	1.251	77.7
	3.204	4.999	0.5	2.500	78.0
	4.894	4.997	0.75	3.747	76.6
	6.617	4.995	1	4.995	75.5
230	0.033	5.007	0	0	–
	0.105	5.007	0.01	0.050	47.6
	1.655	5.002	0.25	1.250	75.6
	3.229	4.996	0.5	2.498	77.4
	4.821	4.990	0.75	3.742	77.6
	6.460	4.985	1	4.985	77.2
264	0.032	5.007	0	0	–
	0.102	5.007	0.01	0.050	49.0
	1.668	5.002	0.25	1.250	75.0
	3.288	4.995	0.5	2.498	76.0
	4.894	4.989	0.75	3.742	76.5
	6.516	4.983	1	4.983	76.5

Conduction EMI

Vin：AC100V/50Hz
Vout：5V 1A



Vin：AC230V/50Hz
Vout：5V 1A



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2) Before you use our Products, please contact our sales representative and verify the latest specifications :

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
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8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.

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ROHM SEMICONDUCTOR

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