

## ABNORMAL TEST RESULT

## OF MODEL BRFS60

1. Did Cheese Cloth or Paper Glow?

No.

2. Did Ground Fuse Open?

No.

3. Dielectric breakdown?

No.

4. Other Results?

See the following pages .

( FMEA : 2/24 ~ 22/24)

( Abnormal Test Result: 23/24 ~ 24/24)

There was no emission of flame, molten metal, ignition of cheesecloth, dielectric breakdown, opening of the ground fuse, other indication of a shock or fire hazard.

F M E A

Component	Mode	Comment	Output Voltage (V)
C101	Open	Normal operation.	
	Short	External Fuse opened, No hazard.	AVR1:0
C102	Open	Normal operation.	
	Short	External Fuse opened, No hazard.	AVR1:0
C103	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C104	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C111	Open	Normal operation.	
	Short	External Fuse opened, No hazard.	AVR1:0
C112	Open	Normal operation.	
	Short	External Fuse opened, No hazard.	AVR1:0
C113	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C114	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C121	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C122	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C123	Open	No hazard.	AVR1:0
	Short	No hazard.	AVR1:0
C124	Open	Normal operation.	
	Short	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
C125	Open	Normal operation.	
	Short	Normal operation.	
C131	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C132	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C133	Open	No hazard.	AVR1:0
	Short	No hazard.	AVR1:0
C134	Open	Normal operation.	
	Short	Normal operation.	
C135	Open	Normal operation.	
	Short	Normal operation.	
C141	Open	Normal operation.	
	Short	See 20 Page.	
C142	Open	Normal operation.	
	Short	See 20 Page.	
C143	Open	Normal operation.	
	Short	See 20 Page.	
C151	Open	Normal operation.	
	Short	See 20 Page.	
C152	Open	Normal operation.	
	Short	See 20 Page.	
C153	Open	Normal operation.	
	Short	See 20 Page.	

F M E A

Component	Mode	Comment	Output Voltage (V)
C201	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C202	Open	Normal operation.	
	Short	Normal operation.	
C203	Open	Normal operation.	
	Short	Normal operation.	
C204	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C205	Open	Normal operation.	
	Short	Normal operation.	
C206	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C207	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C301	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C302	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C303	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C304	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C305	Open	Normal operation.	
	Short	No hazard.	AVR1:0

F M E A

Component	Mode	Comment	Output Voltage (V)
C306	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C307	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C308	Open	Normal operation.	
	Short	Normal operation.	
C309	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C310	Open	Normal operation.	
	Short	Output voltage increased. No hazard.	AVR1:Increased
C311	Open		
	Short	Output voltage increased. No hazard.	AVR1:Increased
C312	Open	Normal operation.	
	Short	Output voltage increased. No hazard.	AVR1:Increased
C313	Open	Normal operation.	
	Short	Normal operation.	
C314	Open	Normal operation.	
	Short	Output voltage increased. No hazard.	AVR1:Increased
C401	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C402	Open	Normal operation.	
	Short	Normal operation.	
C403	Open	No hazard.	AVR1:0
	Short	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
C404	Open	No hazard.	
	Short	No hazard.	AVR1:0
C405	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C406	Open	Normal operation.	
	Short	Normal operation.	
C407	Open	Normal operation.	
	Short	Normal operation.	
C501	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C502	Open	Normal operation.	
	Short	Normal operation.	
C503	Open	No hazard.	AVR1:0
	Short	Normal operation.	
C504	Open	No hazard.	
	Short	No hazard.	AVR1:0
C505	Open	Normal operation.	
	Short	Normal operation.	
C506	Open	Normal operation.	
	Short	Normal operation.	
C601	Open	Normal operation.	
	Short	Output voltage increased. No hazard.	AVR1:Increased
C602	Open	Normal operation.	
	Short	No hazard.	AVR1:0

F M E A

Component	Mode		Comment	Output Voltage (V)
C603	Open		Normal operation.	
	Short		Output voltage increased. No hazard.	AVR1:Increased
CN1	Open		No hazard.	AVR1:0
CN2	Open		Normal operation.	
CN3	Open		Normal operation.	
CN4	Open		Normal operation.	
CN5	Open		Normal operation.	
CN6	Open		No hazard.	AVR1:0
CN7	Open		Normal operation.	
CN8	Open		Normal operation.	
CN9	Open		No hazard.	AVR1:0
CN10	Open		Normal operation.	
CN11	Open		Normal operation.	
CN12	Open		Output voltage decreased. No hazard.	AVR1:decreased
CN13	Open		Output voltage decreased. No hazard.	AVR1:decreased
CN14	Open		No hazard.	AVR1:0
D201	Open	1	Normal operation.	
	Short	1-3	Normal operation.	
	Open	2	Normal operation.	
	Short	2-3	Normal operation.	
		1-2	Normal operation.	
IC101	Open	1	No hazard.	AVR1:0
		2	Normal operation.	
		3	Normal operation.	

F M E A

Component	Mode		Comment	Output Voltage (V)
IC101	Open	4	No hazard.	AVR1:0
		5	Normal operation.	
		6	Normal operation.	
		7	Normal operation.	
		8	No hazard.	AVR1:0
	Short	1-2	Normal operation.	
		2-3	Normal operation.	
		3-4	Normal operation.	
		5-6	Normal operation.	
		6-7	Normal operation.	
		7-8	Normal operation.	
IC102	Open	1	No hazard.	AVR1:0
		2	No hazard.	AVR1:0
		3	No hazard.	AVR1:0
		4	No hazard.	AVR1:0
		5	No hazard.	AVR1:0
		6	No hazard.	AVR1:0
		7	No hazard.	AVR1:0
		8	No hazard.	AVR1:0
	Short	1-2	Normal operation.	
		2-3	No hazard.	AVR1:0
		3-4	Normal operation.	
		5-6	No hazard.	AVR1:0
		6-7	Normal operation.	



F M E A

Component	Mode		Comment	Output Voltage (V)
IC102	Short	7-8	Normal operation.	
IC121	Open	1	No hazard.	AVR1:0
		2	No hazard.	AVR1:0
		3	Normal operation.	
		4	No hazard.	AVR1:0
		5	Normal operation.	
		6	No hazard.	AVR1:0
		7	No hazard.	AVR1:0
		8	No hazard.	AVR1:0
	Short	1-2	External Fuse opened, No hazard.	AVR1:0
		2-3	No hazard.	AVR1:0
		3-4	No hazard.	AVR1:0
		5-6	No hazard.	AVR1:0
		6-7	No hazard.	AVR1:0
		7-8	No hazard.	AVR1:0
IC131	Open	1	No hazard.	AVR1:0
		2	No hazard.	AVR1:0
		3	Normal operation.	
		4	No hazard.	AVR1:0
		5	Normal operation.	
		6	No hazard.	AVR1:0
		7	No hazard.	AVR1:0
		8	No hazard.	AVR1:0
	Short	1-2	External Fuse opened, No hazard.	AVR1:0

F M E A

Component	Mode		Comment	Output Voltage (V)
IC131	Short	2-3	No hazard.	AVR1:0
		3-4	No hazard.	AVR1:0
		5-6	See 20 Page.	
		6-7	No hazard.	AVR1:0
		7-8	No hazard.	AVR1:0
IC301	Open	1	No hazard.	AVR1:0
		2	No hazard.	AVR1:0
		3	Normal operation.	
		4	No hazard.	AVR1:0
		5	No hazard.	AVR1:0
		6	Normal operation.	
		7	Normal operation.	
		8	Output voltage increased. No hazard.	AVR1:Increased
		9	No hazard.	AVR1:0
		10	No hazard.	AVR1:0
		11	Normal operation.	
		12	Normal operation.	
		13	Normal operation.	
		14	Normal operation.	
		15	No hazard.	AVR1:0
		16	Normal operation.	
		17	No hazard.	AVR1:0
		18	Normal operation.	
		19	No hazard.	AVR1:0

F M E A

Component	Mode		Comment	Output Voltage (V)
IC301	Open	20	Normal operation.	
		21	Normal operation.	
		22	Normal operation.	
		23	Normal operation.	
		24	Normal operation.	
		25	No hazard.	AVR1:0
		26	No hazard.	AVR1:0
		27	No hazard.	AVR1:0
		28	No hazard.	AVR1:0
		29	No hazard.	AVR1:0
		30	Normal operation.	
		31	Output voltage increased. No hazard.	AVR1:Increased
		32	Output voltage increased. No hazard.	AVR1:Increased
		33	Output voltage increased. No hazard.	AVR1:Increased
		34	Output voltage decreased. No hazard.	AVR1:decreased
		35	No hazard.	AVR1:0
		36	No hazard.	AVR1:0
		37	No hazard.	AVR1:0
		38	No hazard.	AVR1:0
		39	Normal operation.	
		40	Output voltage increased. No hazard.	AVR1:Increased
	Short	1-2	No hazard.	AVR1:0
		2-3	No hazard.	AVR1:0
		3-4	No hazard.	AVR1:0

F M E A

Component	Mode		Comment	Output Voltage (V)
IC301	Short	4-5	No hazard.	AVR1:0
		5-6	No hazard.	AVR1:0
		6-7	Output voltage increased. No hazard.	AVR1:Increased
		7-8	Output voltage increased. No hazard.	AVR1:Increased
		8-9	No hazard.	AVR1:0
		9-10	No hazard.	AVR1:0
		10-11	Normal operation.	
		11-12	Normal operation.	
		12-13	Normal operation.	
		13-14	Normal operation.	
		14-15	Normal operation.	
		15-16	No hazard.	AVR1:0
		16-17	No hazard.	AVR1:0
		17-18	No hazard.	AVR1:0
		18-19	No hazard.	AVR1:0
		19-20	No hazard.	AVR1:0
		20-21	Normal operation.	
		21-22	Normal operation.	
		22-23	Normal operation.	
		23-24	Normal operation.	
		24-25	Normal operation.	
		25-26	No hazard.	AVR1:0
		26-27	No hazard.	AVR1:0
		27-28	No hazard.	AVR1:0

F M E A

Component	Mode		Comment	Output Voltage (V)
IC301	Short	28-29	No hazard.	AVR1:0
		29-30	Normal operation.	
		30-31	Normal operation.	
		31-32	No hazard.	AVR1:0
		32-33	Output voltage decreased. No hazard.	AVR1:decreased
		33-34	Output voltage increased. No hazard.	AVR1:Increased
		34-35	Output voltage decreased or increased.	AVR1:decreased or increased
		35-36	Normal operation.	
		36-37	No hazard.	AVR1:0
		37-38	Output voltage decreased No hazard.	AVR1:decreased
		38-39	Output voltage decreased No hazard.	AVR1:decreased
		39-40	No hazard.	AVR1:0
		40-1	No hazard.	AVR1:0
IC401	Open	1	Normal operation.	
		2	No hazard.	AVR1:0
		3	No hazard.	AVR1:0
		4	Normal operation.	
		5	No hazard.	AVR1:0
		6	No hazard.	AVR1:0
		7	Normal operation.	
		8	Normal operation.	
	Short	1-2	Normal operation.	
		2-3	Normal operation.	
		3-4	Normal operation.	

F M E A

Component	Mode		Comment	Output Voltage (V)
IC401	Short	5-6	Normal operation.	
		6-7	Normal operation.	
		7-8	No hazard.	AVR1:0
IC602	Open	1	Output voltage increased. No hazard.	AVR1:Increased
		2	Output voltage increased. No hazard.	AVR1:Increased
		3	Output voltage increased. No hazard.	AVR1:Increased
	Short	1-2	Output voltage decreased No hazard.	AVR1:decreased
		2-3	Output voltage increased. No hazard.	AVR1:Increased
L141	Open		No hazard.	AVR1:0
	Short		No hazard.	AVR1:0
L151	Open		No hazard.	AVR1:0
	Short		No hazard.	AVR1:0
TH221	Open		Normal operation.	
	Short		No hazard.	AVR1:0
TH231	Open		Normal operation.	
	Short		No hazard.	AVR1:0
TR121	Open	G(Hi)	See 23 Page.	
		D(Hi)	See 23 Page.	
		S(Hi), D(Lo)	See 23 Page.	
		G(Lo)	See 23 Page.	
		S(Lo)	See 23 Page.	
	Short	D(Hi)-S(Hi)	See 23 Page.	
		S(Hi)-G(Hi)	See 23 Page.	
		G(Hi)-D(Hi)	See 23 Page.	

F M E A

Component	Mode		Comment	Output Voltage (V)
TR121	Short	D(Lo) - S(Lo)	See 23 Page.	
		S(Lo) - G(Lo)	See 23 Page.	
		G(Lo) - D(Lo)	See 23 Page.	
TR122	Open	G(Hi)	See 23 Page.	
		D(Hi)	See 23 Page.	
		S(Hi), D(Lo)	See 23 Page.	
		G(Lo)	See 23 Page.	
		S(Lo)	See 23 Page.	
	Short	D(Hi) - S(Hi)	See 23 Page.	
		S(Hi) - G(Hi)	See 23 Page.	
		G(Hi) - D(Hi)	See 23 Page.	
		D(Lo) - S(Lo)	See 23 Page.	
		S(Lo) - G(Lo)	See 23 Page.	
		G(Lo) - D(Lo)	See 23 Page.	
TR131	Open	G(Hi)	See 23 Page.	
		D(Hi)	See 23 Page.	
		S(Hi), D(Lo)	See 24 Page.	
		G(Lo)	See 24 Page.	
		S(Lo)	See 24 Page.	
	Short	D(Hi) - S(Hi)	See 24 Page.	
		S(Hi) - G(Hi)	See 24 Page.	
		G(Hi) - D(Hi)	See 24 Page.	
		D(Lo) - S(Lo)	See 24 Page.	
		S(Lo) - G(Lo)	See 24 Page.	

F M E A

Component	Mode		Comment	Output Voltage (V)
TR131	Short	G (Lo) -D (Lo)	See 24 Page.	
TR132	Open	G (Hi)	See 24 Page.	
		D (Hi)	See 24 Page.	
		S (Hi) , D (Lo)	See 24 Page.	
		G (Lo)	See 24 Page.	
		S (Lo)	See 24 Page.	
	Short	D (Hi) -S (Hi)	See 24 Page.	
		S (Hi) -G (Hi)	See 24 Page.	
		G (Hi) -D (Hi)	See 24 Page.	
		D (Lo) -S (Lo)	See 24 Page.	
		S (Lo) -G (Lo)	See 24 Page.	
		G (Lo) -D (Lo)	See 24 Page.	
TR201	Open	D	Normal operation.	
		S	Normal operation.	
		G	Normal operation.	
	Short	D-S	Normal operation.	
		S-G	Normal operation.	
		G-D	Normal operation.	
TR202	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	No hazard.	AVR1:0
		B-C	No hazard.	AVR1:0



F M E A

Component	Mode		Comment	Output Voltage (V)
TR203	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	No hazard.	AVR1:0
		E-B	Normal operation.	
		B-C	No hazard.	AVR1:0
TR301	Open	C (3)	Normal operation.	
		E (4)	Output voltage increased. No hazard.	AVR1:Increased
		B (5)	Output voltage increased. No hazard.	AVR1:Increased
		C (6)	Normal operation.	
		E (1)	Normal operation.	
		B (2)	Normal operation.	
	Short	E (1) - B (2)	Normal operation.	
		B (2) - C (3)	Normal operation.	
		E (4) - B (5)	Normal operation.	
		B (5) - C (6)	Output voltage increased. No hazard.	AVR1:Increased
TR501	Open	D (6)	Normal operation.	
		S (1)	Normal operation.	
		G (2)	Normal operation.	
		D (3)	Normal operation.	
		S (4)	Normal operation.	
		G (5)	Normal operation.	
	Short	S (1) - G (2)	Normal operation.	
		G (2) - D (3)	Normal operation.	

F M E A

Component	Mode		Comment	Output Voltage (V)
TR501	Short	S (4) -G (5)	Normal operation.	
		G (5) -D (6)	Normal operation.	
ZD301	Open	1		
		2		
		3		
	Short	1-2	Output voltage increased. No hazard.	AVR1:Increased
		2-3	Normal operation.	
		1-3	Output voltage increased. No hazard.	AVR1:Increased
R101	Open			
R102	Open			
R110	Open		No hazard.	AVR1:0
R111	Open			
R112	Open			
R121	Open		Normal operation.	
R122	Open		Normal operation.	
R123	Open		Normal operation.	
R124	Open		Normal operation.	
R125	Open		Normal operation.	
R126	Open		Normal operation.	
R127	Open		Normal operation.	
R128	Open		Normal operation.	
R129	Open		Normal operation.	
R130	Open		Normal operation.	
R131	Open		Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R132	Open	Normal operation.	
R133	Open	Normal operation.	
R134	Open	Normal operation.	
R135	Open	Normal operation.	
R136	Open	Normal operation.	
R137	Open	Normal operation.	
R138	Open	Normal operation.	
R139	Open	Normal operation.	
R140	Open	Normal operation.	
R141	Open	Normal operation.	
R201	Open	No hazard.	AVR1:0
R202	Open	Normal operation.	
R203	Open	Normal operation.	
R204	Open	Normal operation.	
R205	Open	Normal operation.	
R206	Open	No hazard.	AVR1:0
R207	Open	No hazard.	AVR1:0
R208	Open	No hazard.	AVR1:0
R209	Open	Normal operation.	
R210	Open	Normal operation.	
R211	Open	Normal operation.	
R212	Open	Normal operation.	
R213	Open	No hazard.	AVR1:0
R214	Open	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R215	Open	Normal operation.	
R217	Open	No hazard.	AVR1:0
R218	Open	No hazard.	AVR1:0
R219	Open	No hazard.	AVR1:0
R301	Open	No hazard.	AVR1:0
R302	Open	Normal operation.	
R303	Open	No hazard.	AVR1:0
R304	Open	Output voltage increased. No hazard.	AVR1:Increased
R305	Open	Output voltage decreased No hazard.	AVR1:decreased
R306	Open	Output voltage decreased No hazard.	AVR1:decreased
R307	Open	Output voltage increased. No hazard.	AVR1:Increased
R308	Open	Output voltage increased. No hazard.	AVR1:Increased
R309	Open	Normal operation.	
R310	Open	Normal operation.	
R311	Open	Output voltage decreased No hazard.	AVR1:decreased
R312	Open	Output voltage increased. No hazard.	AVR1:Increased
R313	Open	Normal operation.	
R314	Open	Output voltage increased. No hazard.	AVR1:Increased
R315	Open	Normal operation.	
R401	Open	Normal operation.	
R402	Open	Normal operation.	
R403	Open	Normal operation.	
R404	Open	Normal operation.	
R405	Open	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R406	Open	Normal operation.	
R407	Open	Normal operation.	
R408	Open	No hazard.	AVR1:0
R409	Open	Normal operation.	
R410	Open	Normal operation.	
R411	Open	Normal operation.	
R412	Open	No hazard.	AVR1:0
R413	Open	Normal operation.	
R414	Open	Normal operation.	
R501	Open	Normal operation.	
R502	Open	Normal operation.	
R503	Open	Normal operation.	
R504	Open	Normal operation.	
R505	Open	Normal operation.	
R506	Open	Normal operation.	
R507	Open	Normal operation.	
R508	Open	No hazard.	AVR1:0
R509	Open	Normal operation.	
R510	Open	Normal operation.	
R511	Open	Normal operation.	
R512	Open	No hazard.	AVR1:0
R513	Open	Normal operation.	
R514	Open	Normal operation.	
R602	Open	Output voltage increased. No hazard.	AVR1:Increased



F M E A

Component	Mode	Comment	Output Voltage (V)
R603	Open	Output voltage increased. No hazard.	AVR1:Increased

ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
TR121	Open	G (Hi)	Normal operation.	
		D (Hi)	Normal operation.	
		S (Hi), D (Lo)	Normal operation.	
		G (Lo)	Normal operation.	
		S (Lo)	Output voltage increased. No hazard.	AVR1:Increased
	Short	D (Hi) -S (Hi)	Output voltage increased. No hazard.	AVR1:Increased
		S (Hi) -G (Hi)	Normal operation.	
		G (Hi) -D (Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D (Lo) -S (Lo)	Output voltage increased. No hazard.	AVR1:Increased
		S (Lo) -G (Lo)	No hazard.	AVR1:0
		G (Lo) -D (Lo)	No hazard.	AVR1:0
TR122	Open	G (Hi)	Normal operation.	
		D (Hi)	Normal operation.	
		S (Hi), D (Lo)	Normal operation.	
		G (Lo)	Normal operation.	
		S (Lo)	Output voltage increased. No hazard.	AVR1:Increased
	Short	D (Hi) -S (Hi)	Output voltage increased. No hazard.	AVR1:Increased
		S (Hi) -G (Hi)	Normal operation.	
		G (Hi) -D (Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D (Lo) -S (Lo)	Output voltage increased. No hazard.	AVR1:Increased
		S (Lo) -G (Lo)	No hazard.	AVR1:0
		G (Lo) -D (Lo)	No hazard.	AVR1:0
TR131	Open	G (Hi)	Normal operation.	
		D (Hi)	Normal operation.	

ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
TR131	Open	S(Hi), D(Lo)	Normal operation.	
		G(Lo)	Normal operation.	
		S(Lo)	Output voltage increased. No hazard.	AVR1:Increased
	Short	D(Hi)-S(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		S(Hi)-G(Hi)	Normal operation.	
		G(Hi)-D(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D(Lo)-S(Lo)	Output voltage increased. No hazard.	AVR1:Increased
		S(Lo)-G(Lo)	No hazard.	AVR1:0
		G(Lo)-D(Lo)	No hazard.	AVR1:0
TR132	Open	G(Hi)	Normal operation.	
		D(Hi)	Normal operation.	
		S(Hi), D(Lo)	Normal operation.	
		G(Lo)	Normal operation.	
		S(Lo)	Output voltage increased. No hazard.	AVR1:Increased
	Short	D(Hi)-S(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		S(Hi)-G(Hi)	Normal operation.	
		G(Hi)-D(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D(Lo)-S(Lo)	Output voltage increased. No hazard.	AVR1:Increased
		S(Lo)-G(Lo)	No hazard.	AVR1:0
		G(Lo)-D(Lo)	No hazard.	AVR1:0