



# ABNORMAL TEST RESULT

## OF MODEL BRFS60S

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 : 2/20 ~ 18/20)

( Abnormal Test Result: 19/20 ~ 20/20)

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
C105	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C106	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	External Fuse opened, 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

## F M E A

Component	Mode	Comment	Output Voltage (V)
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	No hazard.	AVR1:0
C141	Open	Normal operation.	
	Short	See 19 Page.	
C151	Open	Normal operation.	
	Short	See 19 Page.	
C201	Open	Normal operation.	
	Short	No hazard.	AVR1:0
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

## F M E A

Component	Mode	Comment	Output Voltage (V)
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
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	Normal operation.	
	Short	Output voltage increased. No hazard.	AVR1:Increased
C314	Open	Normal operation.	
	Short	Output voltage increased. No hazard.	AVR1:Increased
C401	Open	No hazard.	
	Short	No hazard.	AVR1:0



## F M E A

Component	Mode	Comment	Output Voltage (V)
C403	Open	No hazard.	AVR1:0
	Short	Normal operation.	
C404	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C405	Open	Normal operation.	
	Short	Normal operation.	
C406	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Normal operation.	
C407	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C501	Open	No hazard.	
	Short	No hazard.	AVR1:0
C503	Open	No hazard.	AVR1:0
	Short	Normal operation.	
C504	Open	Normal operation.	
	Short	No hazard.	AVR1:0
C505	Open	Normal operation.	
	Short	Normal operation.	
C506	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Normal operation.	
CN1	Open	No hazard.	AVR1:0
CN2	Open	No hazard.	AVR1:0
CN3	Open	Normal operation.	
CN4	Open	Normal operation.	



## F M E A

Component	Mode		Comment	Output Voltage (V)
CN5	Open		No hazard.	AVR1:0
CN6	Open		Output voltage decreased. No hazard.	AVR1:decreased
CN7	Open		Normal operation.	
CN8	Open		Normal operation.	
CN9	Open		Normal operation.	
CN10	Open		Normal operation.	
D201	Open	1	Normal operation.	
		2	Normal operation.	
		3	Normal operation.	
	Short	1-2	Normal operation.	
		2-3	Normal operation.	
		1-3	Normal operation.	
IC101	Open	1	Normal operation.	
		2	No hazard.	AVR1:0
		3	Normal operation.	
		4	Normal operation.	
		5	Normal operation.	
		6	No hazard.	AVR1:0
		7	No hazard.	AVR1:0
		8	Normal operation.	
	Short	1-2	No hazard.	AVR1:0
		2-3	Normal operation.	
		3-4	No hazard.	AVR1:0
		5-6	No hazard.	AVR1:0



## F M E A

Component	Mode		Comment	Output Voltage (V)
IC101	Short	6-7	No hazard.	AVR1:0
		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.	
		4-5	No hazard.	AVR1:0
		5-6	Normal operation.	
		6-7	Normal operation.	
		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	No hazard.	AVR1:0
		6	See 19 Page.	
		7	No hazard.	AVR1:0



## F M E A

Component	Mode		Comment	Output Voltage (V)
IC121	Open	8	Normal operation.	
		9	No hazard.	AVR1:0
		10	No hazard.	AVR1:0
	Short	1-2	External Fuse opened, No hazard.	AVR1:0
		2-3	No hazard.	AVR1:0
		3-4	Normal operation.	
		4-5	No hazard.	AVR1:0
		5-6	See 19 Page.	
		6-7	External Fuse opened, No hazard.	AVR1:0
		7-8	No hazard.	AVR1:0
		8-9	No hazard.	AVR1:0
		9-10	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	No hazard.	AVR1:0
		6	See 19 Page.	
		7	No hazard.	AVR1:0
		8	Normal operation.	
		9	No hazard.	AVR1:0
		10	No hazard.	AVR1:0
	Short	1-2	External Fuse opened, No hazard.	AVR1:0
		2-3	No hazard.	AVR1:0



## F M E A

Component	Mode		Comment	Output Voltage (V)
IC131	Short	3-4	Normal operation.	
		4-5	No hazard.	AVR1:0
		5-6	See 19 Page.	
		6-7	External Fuse opened, No hazard.	AVR1:0
		7-8	No hazard.	AVR1:0
		8-9	No hazard.	AVR1:0
		9-10	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	Normal operation.	
		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



F M E A

Component	Mode		Comment	Output Voltage (V)
IC301	Open	18	Normal operation.	
		19	No hazard.	AVR1:0
		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



## F M E A

Component	Mode		Comment	Output Voltage (V)
IC301	Short	2-3	No hazard.	AVR1:0
		3-4	No hazard.	AVR1:0
		4-5	No hazard.	AVR1:0
		5-6	No hazard.	AVR1:0
		6-7	Normal operation.	
		7-8	Normal operation.	
		8-9	Normal operation.	
		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	Normal operation.	
		16-17	Normal operation.	
		17-18	Normal operation.	
		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



F M E A

Component	Mode		Comment	Output Voltage (V)
IC301	Short	26-27	No hazard.	AVR1:0
		27-28	No hazard.	AVR1:0
		28-29	No hazard.	AVR1:0
		29-30	Normal operation.	
		30-31	Normal operation.	
		31-32	Output voltage decreased. No hazard.	AVR1:decreased
		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.	

## F M E A

Component	Mode		Comment	Output Voltage (V)
IC401	Short	2-3	Normal operation.	
		3-4	Normal operation.	
		5-6	Normal operation.	
		6-7	Normal operation.	
		7-8	No hazard.	AVR1:0
L101	Open	1	No hazard.	AVR1:0
L141	Open	1	No hazard.	AVR1:0
		2	No hazard.	AVR1:0
		3	No hazard.	AVR1:0
		4	No hazard.	AVR1:0
R101	Open		Normal operation.	
R103	Open		Normal operation.	
R121	Open		No hazard.	AVR1:0
R122	Open		Normal operation.	
R123	Open		See 19 Page.	
R124	Open		Normal operation.	
R131	Open		No hazard.	AVR1:0
R132	Open		Normal operation.	
R133	Open		See 19 Page.	
R134	Open		Normal operation.	
R135	Open		Normal operation.	
R136	Open		Normal operation.	
R141	Open		Normal operation.	
R201	Open		No hazard.	AVR1:0

## F M E A

Component	Mode	Comment	Output Voltage (V)
R202	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	No hazard.	AVR1:0
R215	Open	No hazard.	AVR1:0
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	No hazard.	AVR1:0
R303	Open	No hazard.	AVR1:0
R304	Open	Normal operation.	
R305	Open	No hazard.	AVR1:0
R306	Open	Output voltage decreased No hazard.	AVR1:decreased
R307	Open	Output voltage increased. No hazard.	AVR1:Increased
R308	Open	Output voltage decreased No hazard.	AVR1:decreased
R309	Open	Output voltage decreased No hazard.	AVR1:decreased
R310	Open	Output voltage increased. No hazard.	AVR1:Increased



## F M E A

Component	Mode	Comment	Output Voltage (V)
R311	Open	Output voltage decreased No hazard.	AVR1:decreased
R312	Open	Normal operation.	
R313	Open	Output voltage decreased No hazard.	AVR1:decreased
R314	Open	No hazard.	AVR1:0
R401	Open	Normal operation.	
R402	Open	Normal operation.	
R403	Open	Normal operation.	
R404	Open	Normal operation.	
R405	Open	Normal operation.	
R406	Open	No hazard.	AVR1:0
R407	Open	No hazard.	AVR1:0
R408	Open	Normal operation.	
R409	Open	Normal operation.	
R410	Open	Normal operation.	
R411	Open	No hazard.	AVR1:0
R412	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	No hazard.	AVR1:0
R507	Open	No hazard.	AVR1:0
R508	Open	Normal operation.	



## F M E A

Component	Mode		Comment	Output Voltage (V)
R509	Open		Normal operation.	
R510	Open		Normal operation.	
R511	Open		No hazard.	AVR1:0
R512	Open		Normal operation.	
TH221	Open		Normal operation.	
	Short		No hazard.	AVR1:0
TH231	Open		Normal operation.	
	Short		No hazard.	AVR1:0
TR121	Open	G(Hi)	See 19 Page.	
		D(Hi)	See 19 Page.	
		S(Hi), D(Lo)	See 19 Page.	
		G(Lo)	See 19 Page.	
		S(Lo)	See 19 Page.	
	Short	D(Hi)-S(Hi)	See 19 Page.	
		D(Hi)-S(Lo)	See 19 Page.	
		S(Hi)-G(Hi)	See 19 Page.	
		G(Hi)-D(Hi)	See 19 Page.	
		D(Lo)-S(Lo)	See 19 Page.	
		S(Lo)-G(Lo)	See 19 Page.	
		G(Lo)-D(Lo)	See 19 Page.	
TR131	Open	G(Hi)	See 19 Page.	
		D(Hi)	See 19 Page.	
		S(Hi), D(Lo)	See 19 Page.	
		G(Lo)	See 19 Page.	



## F M E A

Component	Mode		Comment	Output Voltage (V)
TR131	Open	S (Lo)	See 20 Page.	
	Short	D (Hi) - S (Hi)	See 20 Page.	
		D (Hi) - S (Lo)	See 20 Page.	
		S (Hi) - G (Hi)	See 20 Page.	
		G (Hi) - D (Hi)	See 20 Page.	
		D (Lo) - S (Lo)	See 20 Page.	
		S (Lo) - G (Lo)	See 20 Page.	
		G (Lo) - D (Lo)	See 20 Page.	
TR202	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	No hazard.	AVR1:0
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
TR501	Open	D (6)	Normal operation.	
		S (1)	Normal operation.	
		G (2)	Normal operation.	
		D (3)	Normal operation.	



F M E A

Component	Mode		Comment	Output Voltage (V)
TR501	Open	S (4)	Normal operation.	
		G (5)	Normal operation.	
	Short	S (1) - G (2)	Normal operation.	
		G (2) - D (3)	Normal operation.	
		S (4) - G (5)	Normal operation.	
		G (5) - D (6)	Normal operation.	
ZD301	Open			
	Short		Output voltage increased. No hazard.	AVR1: Increased



## ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
C141	Short		No hazard.	AVR1:0
C151	Short		No hazard.	AVR1:0
IC121	Open	6	No hazard.	AVR1:*
	Short	5-6	No hazard.	AVR1:*
IC131	Open	6	No hazard.	AVR1:*
	Short	5-6	No hazard.	AVR1:*
R123	Open		No hazard.	AVR1:*
R133	Open		No hazard.	AVR1:*
TR121	Open	G(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D(Hi)	No hazard.	AVR1:*
		S(Hi), D(Lo)	No hazard.	AVR1:*
		G(Lo)	External Fuse opened, No hazard.	AVR1:0
		S(Lo)	No hazard.	AVR1:*
	Short	D(Hi)-S(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D(Hi)-S(Lo)	External Fuse opened, No hazard.	AVR1:0
		S(Hi)-G(Hi)	No hazard.	AVR1:*
		G(Hi)-D(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D(Lo)-S(Lo)	External Fuse opened, No hazard.	AVR1:0
		S(Lo)-G(Lo)	No hazard.	AVR1:*
		G(Lo)-D(Lo)	No hazard.	AVR1:*
TR131	Open	G(Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D(Hi)	No hazard.	AVR1:*
		S(Hi), D(Lo)	No hazard.	AVR1:*
		G(Lo)	External Fuse opened, No hazard.	AVR1:0



ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
TR131	Open	S (Lo)	No hazard.	AVR1:*
	Short	D (Hi)-S (Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D (Hi)-S (Lo)	External Fuse opened, No hazard.	AVR1:0
		S (Hi)-G (Hi)	No hazard.	AVR1:*
		G (Hi)-D (Hi)	Output voltage increased. No hazard.	AVR1:Increased
		D (Lo)-S (Lo)	External Fuse opened, No hazard.	AVR1:0
		S (Lo)-G (Lo)	No hazard.	AVR1:*
		G (Lo)-D (Lo)	No hazard.	AVR1:*