

## ABNORMAL TEST RESULT

OF MODEL MGS3012(3R3/05/12/15)

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 ~ 19/20)

( Abnormal Test Result: 20/20 ~ 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	F101 opened, No hazard.	AVR1:0
C102	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C103	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C104	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C105	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C106	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C107	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C108	Open	Normal operation.	
	Short	Normal operation.	
C111	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C121	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C122	Open	Normal operation.	
	Short	Normal operation.	
C131	Open	Normal operation.	
	Short	Normal operation.	



F M E A

Component	Mode	Comment	Output Voltage (V)
C141	Open	Normal operation.	
	Short	Normal operation.	
C151	Open	Normal operation.	
	Short	Normal operation.	
C152	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C153	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	No Hazard.	AVR1:0
C161	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C162	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0
C171	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C181	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C191	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	No Hazard.	AVR1:0
C192	Open	Normal operation.	
	Short	F101 opened, No hazard.	AVR1:0
C201	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C202	Open	Normal operation.	
	Short	No Hazard.	AVR1:0

F M E A

Component	Mode	Comment	Output Voltage (V)
C203	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C204	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C205	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C206	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C207	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C211	Open	See 20 Page.	
	Short	Normal operation.	
C213	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C214	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C215	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C221	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C231	Open	Normal operation.	
	Short	No Hazard.	AVR1:0
C232	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Output voltage decreased. No hazard.	AVR1:decreased

F M E A

Component	Mode	Comment	Output Voltage (V)
C233	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C234	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C235	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
D101	Open	Normal operation.	
	Short	Normal operation.	
D141	Open	Normal operation.	
	Short	Normal operation.	
D151	Open	Normal operation.	
	Short	Normal operation.	
D171	Open	Normal operation.	
	Short	Normal operation.	
D172	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
D181	Open	Normal operation.	
	Short	Normal operation.	
D182	Open	Normal operation.	
	Short	Normal operation.	
D183	Open	Normal operation.	
	Short	Output voltage decreased. No hazard.	AVR1:decreased
D211	Open	Normal operation.	
	Short	See 20 Page.	



F M E A

Component	Mode	Comment	Output Voltage (V)	
D212	Open	See 20 Page.		
	Short	Output voltage decreased. No hazard.	AVR1:decreased	
D221	Open	Output voltage decreased. No hazard.	AVR1:decreased	
	Short	Normal operation.		
F101	Open	No Hazard.	AVR1:0	
	Short	Normal operation.		
IC121	Open	1	Normal operation.	
		2	No Hazard.	AVR1:0
		3	Normal operation.	
		4	Normal operation.	
		5	Normal operation.	
		6	Normal operation.	
		7	Normal operation.	
		8	No Hazard.	AVR1:0
	Short	1-2	Normal operation.	
		2-3	No Hazard.	AVR1:0
		3-4	Normal operation.	
		5-6	Normal operation.	
		6-7	Normal operation.	
		7-8	Output voltage decreased. No hazard.	AVR1:decreased
IC161	Open	1	No Hazard.	AVR1:0
		2	No Hazard.	AVR1:0
		3	F101 opened, No hazard.	AVR1:0
		4	No Hazard.	AVR1:0

F M E A

Component	Mode		Comment	Output Voltage (V)
IC161	Open	5	No Hazard.	AVR1:0
		6	No Hazard.	AVR1:0
		7	No Hazard.	AVR1:0
		8	No Hazard.	AVR1:0
	Short	1-2	No Hazard.	AVR1:0
		2-3	F101 opened, No hazard.	AVR1:0
		3-4	No Hazard.	AVR1:0
		5-6	See 20 Page.	
		6-7	F101 opened, No hazard.	AVR1:0
		7-8	Normal operation.	
IC231	Open	K	No Hazard.	AVR1:0
		A	No Hazard.	AVR1:0
		R	No Hazard.	AVR1:0
	Short	A-K	Output voltage decreased. No hazard.	AVR1:decreased
		K-R	Output voltage decreased. No hazard.	AVR1:decreased
		R-A	No Hazard.	AVR1:0
L101	Open		No Hazard.	AVR1:0
	Short		Normal operation.	
L181	Open		See 20 Page.	
	Short		See 20 Page.	
L201	Open		F101 opened, No hazard.	AVR1:0
	Short		Output voltage decreased. No hazard.	AVR1:decreased
PC141	Open	A, K	Normal operation.	
		C, E	Normal operation.	



F M E A

Component	Mode		Comment	Output Voltage (V)
PC141	Short	A-K	Normal operation.	
		C-E	No Hazard.	AVR1:0
PC151	Open	A, K	No Hazard.	AVR1:0
		C, E	No Hazard.	AVR1:0
	Short	A-K	Output voltage decreased. No hazard.	AVR1:decreased
		C-E	No Hazard.	AVR1:0
T101	Open	1	See 20 Page.	
		2	Normal operation.	
		3	Normal operation.	
		4	Normal operation.	
		5	Normal operation.	
		6	See 20 Page.	
		7	See 20 Page.	
		8	Normal operation.	
		9	Normal operation.	
		10	Normal operation.	
		11	Normal operation.	
		12	See 20 Page.	
	Short	1-2	Normal operation.	
		2-3	Normal operation.	
		3-4	F101 opened, No hazard.	AVR1:0
		4-5	Normal operation.	
		5-6	See 20 Page.	
		7-8	No Hazard.	AVR1:0





F M E A

Component	Mode		Comment	Output Voltage (V)
T101	Short	8-9	Normal operation.	
		9-10	No Hazard.	AVR1:0
		10-11	Normal operation.	
		11-12	Output voltage decreased. No hazard.	AVR1:decreased
T171	Open	1	No Hazard.	AVR1:0
		2	No Hazard.	AVR1:0
		3	Normal operation.	
		4	Normal operation.	
	Short	1-2	Normal operation.	
		2-3	No Hazard.	AVR1:0
		3-4	Normal operation.	
		1-4	F101 opened, No hazard.	AVR1:0
T191	Open	1	Output voltage decreased. No hazard.	AVR1:decreased
		2	Output voltage decreased. No hazard.	AVR1:decreased
		3	Output voltage decreased. No hazard.	AVR1:decreased
		4	Output voltage decreased. No hazard.	AVR1:decreased
	Short	1-2	Output voltage decreased. No hazard.	AVR1:decreased
		2-3	Output voltage decreased. No hazard.	AVR1:decreased
		3-4	Output voltage decreased. No hazard.	AVR1:decreased
		1-4	Normal operation.	
TH141	Open		Normal operation.	
	Short		No Hazard.	AVR1:0
TR101	Open	D	See 20 Page.	
		S	See 20 Page.	



F M E A

Component	Mode		Comment	Output Voltage (V)
TR101	Open	G	See 20 Page.	
	Short	D-S	See 20 Page.	
		S-G	See 20 Page.	
		G-D	See 20 Page.	
TR102	Open	C	Normal operation.	
		E	No Hazard.	AVR1:0
		B	No Hazard.	AVR1:0
	Short	C-E	See 20 Page.	
		E-B	Normal operation.	
		B-C	F101 opened, No hazard.	AVR1:0
TR103	Open	C	See 20 Page.	
		E	F101 opened, No hazard.	AVR1:0
		B	F101 opened, No hazard.	AVR1:0
	Short	C-E	No Hazard.	AVR1:0
		E-B	See 20 Page.	
		B-C	No Hazard.	AVR1:0
TR111	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	Normal operation.	
TR112	Open	C	Normal operation.	
		E	Normal operation.	



F M E A

Component	Mode		Comment	Output Voltage (V)
TR112	Open	B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	Normal operation.	
TR113	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	Normal operation.	
TR131	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
TR132	Open	C	No Hazard.	AVR1:0
		E	No Hazard.	AVR1:0
		B	No Hazard.	AVR1:0
	Short	C-E	Normal operation.	
		E-B	No Hazard.	AVR1:0
		B-C	Normal operation.	
TR133	Open	C(6)	Normal operation.	
		E(1)	Normal operation.	

F M E A

Component	Mode		Comment	Output Voltage (V)	
TR133	Open	B(2)	Normal operation.		
		Short	C(6)-E(1)	No Hazard.	AVR1:0
			E(1)-B(2)	Normal operation.	
	B(2)-C(6)		Normal operation.		
	Open	C(3)	Normal operation.		
		E(4)	Normal operation.		
		B(5)	Normal operation.		
	Short	C(3)-E(4)	Normal operation.		
		E(4)-B(5)	Normal operation.		
		B(5)-C(3)	Normal operation.		
	TR141	Open	C(6)	Normal operation.	
			E(1)	Normal operation.	
B(2)			Normal operation.		
Short		C(6)-E(1)	No Hazard.	AVR1:0	
		E(1)-B(2)	Normal operation.		
		B(2)-C(6)	No Hazard.	AVR1:0	
Open		C(3)	Normal operation.		
		E(4)	Normal operation.		
		B(5)	Normal operation.		
Short		C(3)-E(4)	No Hazard.	AVR1:0	
		E(4)-B(5)	Normal operation.		
		B(5)-C(3)	No Hazard.	AVR1:0	
TR151	Open	C(6)	Output voltage decreased. No hazard.	AVR1:decreased	
		E(1)	Output voltage decreased. No hazard.	AVR1:decreased	

F M E A

Component	Mode		Comment	Output Voltage (V)	
TR151	Open	B(2)	Output voltage decreased. No hazard.	AVR1:decreased	
		Short	C(6)-E(1)	Normal operation.	
			E(1)-B(2)	Output voltage decreased. No hazard.	AVR1:decreased
	B(2)-C(6)		Normal operation.		
	Open	C(3)	Normal operation.		
		E(4)	Normal operation.		
		B(5)	Normal operation.		
	Short	C(3)-E(4)	No Hazard.	AVR1:0	
		E(4)-B(5)	Normal operation.		
		B(5)-C(3)	No Hazard.	AVR1:0	
	TR171	Open	C(6)	Normal operation.	
			E(1)	Normal operation.	
B(2)			No Hazard.	AVR1:0	
Short		C(6)-E(1)	No Hazard.	AVR1:0	
		E(1)-B(2)	Normal operation.		
		B(2)-C(6)	No Hazard.	AVR1:0	
Open		C(3)	Normal operation.		
		E(4)	No Hazard.	AVR1:0	
		B(5)	Normal operation.		
Short		C(3)-E(4)	Normal operation.		
		E(4)-B(5)	Normal operation.		
		B(5)-C(3)	No Hazard.	AVR1:0	
TR172	Open	C(6)	Normal operation.		
		E(1)	Normal operation.		

F M E A

Component	Mode		Comment	Output Voltage (V)	
TR172	Open	B(2)	Normal operation.		
		Short	C(6)-E(1)	Normal operation.	
			E(1)-B(2)	Normal operation.	
	B(2)-C(6)		Normal operation.		
	Open	C(3)	Normal operation.		
		E(4)	Normal operation.		
		B(5)	Normal operation.		
	Short	C(3)-E(4)	Normal operation.		
		E(4)-B(5)	Normal operation.		
		B(5)-C(3)	Normal operation.		
TR191	Open	C	Output voltage decreased. No hazard.	AVR1:decreased	
		E	Output voltage decreased. No hazard.	AVR1:decreased	
		B	Output voltage decreased. No hazard.	AVR1:decreased	
	Short	C-E	F101 opened, No hazard.	AVR1:0	
		E-B	Output voltage decreased. No hazard.	AVR1:decreased	
		B-C	Output voltage decreased. No hazard.	AVR1:decreased	
TR211	Open	D	No Hazard.	AVR1:0	
		S	No Hazard.	AVR1:0	
		G	Output voltage decreased. No hazard.	AVR1:decreased	
	Short	D-S	Output voltage decreased. No hazard.	AVR1:decreased	
		S-G	See 20 Page.		
		G-D	Output voltage decreased. No hazard.	AVR1:decreased	
TR212	Open	D(6)	Normal operation.		
		S(1)	Normal operation.		

F M E A

Component	Mode		Comment	Output Voltage (V)	
TR212	Open	G(2)	See 20 Page.		
	Short	D(6)-S(1)	Normal operation.		
		S(1)-G(2)	Output voltage decreased. No hazard.	AVR1:decreased	
		G(2)-D(6)	Output voltage decreased. No hazard.	AVR1:decreased	
	Open	D(3)	Normal operation.		
		S(4)	Normal operation.		
		G(5)	Normal operation.		
	Short	D(3)-S(4)	Normal operation.		
		S(4)-G(5)	Output voltage decreased. No hazard.	AVR1:decreased	
		G(5)-D(3)	Output voltage decreased. No hazard.	AVR1:decreased	
	TR221	Open	D	Output voltage decreased. No hazard.	AVR1:decreased
			S	Output voltage decreased. No hazard.	AVR1:decreased
G			Normal operation.		
Short		D-S	No Hazard.	AVR1:0	
		S-G	Output voltage decreased. No hazard.	AVR1:decreased	
		G-D	Output voltage decreased. No hazard.	AVR1:decreased	
TR222	Open	D(6)	Normal operation.		
		S(1)	Normal operation.		
		G(2)	Normal operation.		
	Short	D(6)-S(1)	Output voltage decreased. No hazard.	AVR1:decreased	
		S(1)-G(2)	Output voltage decreased. No hazard.	AVR1:decreased	
		G(2)-D(6)	Output voltage decreased. No hazard.	AVR1:decreased	
	Open	D(3)	Normal operation.		
		S(4)	Normal operation.		

F M E A

Component	Mode		Comment	Output Voltage (V)
TR222	Open	G(5)	Normal operation.	
	Short	D(3)-S(4)	Output voltage decreased. No hazard.	AVR1:decreased
		S(4)-G(5)	Output voltage decreased. No hazard.	AVR1:decreased
		G(5)-D(3)	Output voltage decreased. No hazard.	AVR1:decreased
ZD111	Open		Normal operation.	
	Short		Normal operation.	
ZD112	Open		Normal operation.	
	Short		Normal operation.	
ZD211	Open		See 20 Page.	
	Short		See 20 Page.	
ZD223	Open		Output voltage decreased. No hazard.	AVR1:decreased
	Short		Output voltage decreased. No hazard.	AVR1:decreased
ZD231	Open		No Hazard.	AVR1:0
	Short		Normal operation.	
ZD251	Open		Normal operation.	
	Short		No Hazard.	AVR1:0
R101	Open		No Hazard.	AVR1:0
R102	Open		F101 opened, No hazard.	AVR1:0
R103	Open		Normal operation.	
R104	Open		No Hazard.	AVR1:0
R105	Open		Normal operation.	
R106	Open		Normal operation.	
R107	Open		Normal operation.	
R108	Open		Normal operation.	



F M E A

Component	Mode	Comment	Output Voltage (V)
R111	Open	Normal operation.	
R112	Open	Normal operation.	
R121	Open	No Hazard.	AVR1:0
R122	Open	No Hazard.	AVR1:0
R123	Open	Normal operation.	
R124	Open	Normal operation.	
R125	Open	Normal operation.	
R131	Open	Normal operation.	
R132	Open	Normal operation.	
R133	Open	Normal operation.	
R134	Open	No Hazard.	AVR1:0
R135	Open	Normal operation.	
R136	Open	Normal operation.	
R137	Open	Normal operation.	
R138	Open	Normal operation.	
R139	Open	Normal operation.	
R141	Open	Normal operation.	
R142	Open	Normal operation.	
R143	Open	Normal operation.	
R144	Open	No Hazard.	AVR1:0
R151	Open	Normal operation.	
R152	Open	Normal operation.	
R153	Open	Normal operation.	
R154	Open	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R155	Open	Normal operation.	
R156	Open	Output voltage decreased. No hazard.	AVR1:decreased
R161	Open	No Hazard.	AVR1:0
R162	Open	No Hazard.	AVR1:0
R170	Open	Normal operation.	
R171	Open	Normal operation.	
R172	Open	Normal operation.	
R173	Open	Normal operation.	
R174	Open	Normal operation.	
R175	Open	Output voltage decreased. No hazard.	AVR1:decreased
R176	Open	Output voltage decreased. No hazard.	AVR1:decreased
R177	Open	Output voltage decreased. No hazard.	AVR1:decreased
R178	Open	Normal operation.	
R181	Open	Normal operation.	
R182	Open	Normal operation.	
R191	Open	Normal operation.	
R211	Open	Normal operation.	
R212	Open	Normal operation.	
R213	Open	Normal operation.	
R221	Open	Normal operation.	
R222	Open	Normal operation.	
R223	Open	Normal operation.	
R224	Open	Normal operation.	
R225	Open	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R226	Open	Normal operation.	
R227	Open	Normal operation.	
R228	Open	Normal operation.	
R229	Open	Normal operation.	
R230	Open	Normal operation.	
R231	Open	No Hazard.	AVR1:0
R232	Open	Output voltage decreased. No hazard.	AVR1:decreased
R233	Open	Output voltage decreased. No hazard.	AVR1:decreased
R234	Open	Output voltage decreased. No hazard.	AVR1:decreased
R235	Open	No Hazard.	AVR1:0
R236	Open	No Hazard.	AVR1:0
R237	Open	No Hazard.	AVR1:0
R239	Open	Output voltage decreased. No hazard.	AVR1:decreased
R240	Open	Normal operation.	
R241	Open	Output voltage decreased. No hazard.	AVR1:decreased
R251	Open	Normal operation.	
R252	Open	Normal operation.	
R261	Open	Normal operation.	



ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
C211	Open		Normal operation.	
D211	Short		Normal operation.	
D212	Open		Normal operation.	
IC161	Short	5-6	Output voltage decreased. No hazard.	AVR1:decreased
L181	Open		Normal operation.	
	Short		Normal operation.	
T101	Open	1	Normal operation.	
		6	Normal operation.	
		7	Normal operation.	
		12	Normal operation.	
	Short	5-6	F101 opened, No hazard.	AVR1:0
TR101	Open	D	No Hazard.	AVR1:0
		S	No Hazard.	AVR1:0
		G	F101 opened, No hazard.	AVR1:0
	Short	D-S	F101 opened, No hazard.	AVR1:0
		S-G	No Hazard.	AVR1:0
		G-D	F101 opened, No hazard.	AVR1:0
TR102	Short	C-E	No Hazard.	AVR1:0
TR103	Open	C	Normal operation.	
	Short	E-B	Normal operation.	
TR211	Short	S-G	Normal operation.	
TR212	Open	G(2)	Normal operation.	
ZD211	Open		Normal operation.	
	Short		Normal operation.	