



ABNORMAL TEST RESULT

OF MODEL UMHA120F

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 : 2/19 ~ 18/19)

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

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.	AVR1:*
	Short	Fuse opend. No Hazard.	AVR1:0
C102	Open	Normal operation.	AVR1:*
	Short	Fuse opend. No Hazard.	AVR1:0
C104	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C105	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C107	Open	See page 19.	
	Short	Fuse opend. No Hazard.	AVR1:0
C111	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C112	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C115	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C116	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C119	Open	Fuse opend. No Hazard.	AVR1:0
	Short	Fuse opend. No Hazard.	AVR1:0
C131	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C132	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0



F M E A

Component	Mode	Comment	Output Voltage (V)
C133	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C135	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C136	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C137	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C151	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C161	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C162	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C201	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0
C222	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0
C231	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C241	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C242	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0



F M E A

Component	Mode	Comment	Output Voltage (V)
C243	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C244	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C250	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C261	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C262	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C263	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0
C264	Open	Normal operation.	AVR1:*
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C265	Open	Normal operation.	AVR1:*
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C266	Open	Normal operation.	AVR1:*
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C267	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Normal operation.	AVR1:*
C268	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Normal operation.	AVR1:*
C271	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Normal operation.	AVR1:*



F M E A

Component	Mode	Comment	Output Voltage (V)
C272	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Normal operation.	AVR1:*
C501	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C502	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C503	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C505 (Except:-48)	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C506 (Except:-48)	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
C601	Open	Normal operation.	AVR1:*
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C603	Open	Output voltage decreased. No hazard.	AVR1:decreased
	Short	Output voltage decreased. No hazard.	AVR1:decreased
C604	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
C605	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
D101	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
D111	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0



F M E A

Component	Mode	Comment	Output Voltage (V)
D112	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0
D113	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
D114	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
D131	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
D132	Open	No Hazard.	AVR1:0
	Short	Normal operation.	AVR1:*
D201	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
D202	Open	Normal operation.	AVR1:*
	Short	Normal operation.	AVR1:*
D221	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0
D231	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
D251	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
D271	Open	No Hazard.	AVR1:0
	Short	See page 19.	
D501 (Only -48)	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0



F M E A

Component	Mode		Comment	Output Voltage (V)
D502 (Only -48)	Open		No Hazard.	AVR1:0
	Short		No Hazard.	AVR1:0
IC101	Open	1	Normal operation.	AVR1:*
		2	No Hazard.	AVR1:0
		3	Normal operation.	AVR1:*
		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	No Hazard.	AVR1:0
		2-3	No Hazard.	AVR1:0
		3-4	No Hazard.	AVR1:0
		4-5	Normal operation.	AVR1:*
		5-6	No Hazard.	AVR1:0
		6-7	Fuse opend. No Hazard.	AVR1:0
		7-8	No Hazard.	AVR1:0
IC201	Open	1	Normal operation.	AVR1:*
		3	No Hazard.	AVR1:0
		4	No Hazard.	AVR1:0
		5	No Hazard.	AVR1:0
		6	No Hazard.	AVR1:0
		7	Output voltage decreased. No hazard.	AVR1:decreased
		8	Normal operation.	AVR1:*



F M E A

Component	Mode		Comment	Output Voltage (V)
IC201	Open	9	Normal operation.	AVR1:*
		10	No Hazard.	AVR1:0
		11	No Hazard.	AVR1:0
		12	No Hazard.	AVR1:0
		14	No Hazard.	AVR1:0
		15	No Hazard.	AVR1:0
		16	No Hazard.	AVR1:0
	Short	3-4	No Hazard.	AVR1:0
		4-5	No Hazard.	AVR1:0
		5-6	No Hazard.	AVR1:0
		6-7	No Hazard.	AVR1:0
		7-8	Output voltage decreased. No hazard.	AVR1:decreased
		9-10	Output voltage decreased. No hazard.	AVR1:decreased
		10-11	No Hazard.	AVR1:0
		11-12	No Hazard.	AVR1:0
		14-15	No Hazard.	AVR1:0
		15-16	No Hazard.	AVR1:0
IC501 (Except:-48)	Open	1	Normal operation.	AVR1:*
		2	Normal operation.	AVR1:*
		3	Normal operation.	AVR1:*
		4	Normal operation.	AVR1:*
		5	Normal operation.	AVR1:*
		6	Normal operation.	AVR1:*
		7	Normal operation.	AVR1:*



F M E A

Component	Mode		Comment	Output Voltage (V)
IC501 (Except:-48)	Open	8	Normal operation.	AVR1:*
	Short	1-2	Normal operation.	AVR1:*
		2-3	Normal operation.	AVR1:*
		3-4	Normal operation.	AVR1:*
		5-6	Normal operation.	AVR1:*
		6-7	No Hazard.	AVR1:0
		7-8	Output voltage decreased. No hazard.	AVR1:decreased
IC601	Open	1	Normal operation.	AVR1:*
		2	Normal operation.	AVR1:*
		3	No Hazard.	AVR1:0
		4	No Hazard.	AVR1:0
		5	Normal operation.	AVR1:*
	Short	1-2	Normal operation.	AVR1:*
		2-3	No Hazard.	AVR1:0
		3-4	No Hazard.	AVR1:0
		4-5	No Hazard.	AVR1:0
L101	Open	1	No Hazard.	AVR1:0
		2	No Hazard.	AVR1:0
		3	No Hazard.	AVR1:0
		4	No Hazard.	AVR1:0
	Short	1-2	Normal operation.	AVR1:*
		2-3	Fuse opend. No Hazard.	AVR1:0
		3-4	Normal operation.	AVR1:*
L102	Open	1	No Hazard.	AVR1:0



F M E A

Component	Mode		Comment	Output Voltage (V)
L102	Open	2	No Hazard.	AVR1:0
		3	No Hazard.	AVR1:0
		4	No Hazard.	AVR1:0
	Short	1-2	Normal operation.	AVR1:*
		2-3	Fuse opend. No Hazard.	AVR1:0
		3-4	Normal operation.	AVR1:*
L103	Open	1	No Hazard.	AVR1:0
		2	No Hazard.	AVR1:0
		3	No Hazard.	AVR1:0
		4	No Hazard.	AVR1:0
	Short	1-2	Fuse opend. No Hazard.	AVR1:0
		3-4	No Hazard.	AVR1:0
L501	Open		No Hazard.	AVR1:0
	Short		Normal operation.	AVR1:*
PC201	Open	A, K	No Hazard.	AVR1:0
		C, E	No Hazard.	AVR1:0
	Short	A-K	No Hazard.	AVR1:0
		C-E	No Hazard.	AVR1:0
PC202	Open	A, K	Normal operation.	AVR1:*
		C, E	Normal operation.	AVR1:*
	Short	A-K	Normal operation.	AVR1:*
		C-E	No Hazard.	AVR1:0
R101	Open		Normal operation.	AVR1:*
R102	Open		Normal operation.	AVR1:*



F M E A

Component	Mode	Comment	Output Voltage (V)
R103	Open	Normal operation.	AVR1:*
R111	Open	Normal operation.	AVR1:*
R112	Open	Normal operation.	AVR1:*
R113	Open	No Hazard.	AVR1:0
R114	Open	No Hazard.	AVR1:0
R115	Open	Normal operation.	AVR1:*
R116	Open	Normal operation.	AVR1:*
R117	Open	Normal operation.	AVR1:*
R118	Open	No Hazard.	AVR1:0
R131	Open	No Hazard.	AVR1:0
R132	Open	No Hazard.	AVR1:0
R133	Open	No Hazard.	AVR1:0
R134	Open	No Hazard.	AVR1:0
R135	Open	Normal operation.	AVR1:*
R136	Open	Normal operation.	AVR1:*
R137	Open	Normal operation.	AVR1:*
R138	Open	Normal operation.	AVR1:*
R139	Open	Normal operation.	AVR1:*
R140	Open	Normal operation.	AVR1:*
R141	Open	No Hazard.	AVR1:0
R142	Open	Normal operation.	AVR1:*
R151	Open	No Hazard.	AVR1:0
R152	Open	No Hazard.	AVR1:0
R153	Open	No Hazard.	AVR1:0



F M E A

Component	Mode	Comment	Output Voltage (V)
R154	Open	No Hazard.	AVR1:0
R155	Open	No Hazard.	AVR1:0
R156	Open	No Hazard.	AVR1:0
R201	Open	No Hazard.	AVR1:0
R202	Open	No Hazard.	AVR1:0
R203	Open	Normal operation.	AVR1:*
R206	Open	No Hazard.	AVR1:0
R207	Open	No Hazard.	AVR1:0
R208	Open	Normal operation.	AVR1:*
R221	Open	No Hazard.	AVR1:0
R231	Open	Normal operation.	AVR1:*
R232	Open	Normal operation.	AVR1:*
R233	Open	Normal operation.	AVR1:*
R234	Open	Normal operation.	AVR1:*
R241	Open	No Hazard.	AVR1:0
R242	Open	No Hazard.	AVR1:0
R243	Open	No Hazard.	AVR1:0
R244	Open	No Hazard.	AVR1:0
R245	Open	No Hazard.	AVR1:0
R246	Open	No Hazard.	AVR1:0
R247	Open	Normal operation.	AVR1:*
R248	Open	Normal operation.	AVR1:*
R249	Open	Normal operation.	AVR1:*
R251	Open	Normal operation.	AVR1:*



F M E A

Component	Mode	Comment	Output Voltage (V)
R252	Open	Normal operation.	AVR1:*
R253	Open	Normal operation.	AVR1:*
R254	Open	No Hazard.	AVR1:0
R255	Open	Normal operation.	AVR1:*
R256	Open	Normal operation.	AVR1:*
R261	Open	No Hazard.	AVR1:0
R262	Open	Normal operation.	AVR1:*
R263	Open	No Hazard.	AVR1:0
R264	Open	Output voltage decreased. No hazard.	AVR1:decreased
R265	Open	Output voltage decreased. No hazard.	AVR1:decreased
R266	Open	Normal operation.	AVR1:*
R267	Open	Normal operation.	AVR1:*
R268	Open	Normal operation.	AVR1:*
R269	Open	No Hazard.	AVR1:0
R271	Open	No Hazard.	AVR1:0
R281	Open	No Hazard.	AVR1:0
R501 (Except:-48)	Open	Normal operation.	AVR1:*
R502 (Except:-48)	Open	No Hazard.	AVR1:0
R503 (Except:-48)	Open	Normal operation.	AVR1:*
R504 (Except:-48)	Open	Normal operation.	AVR1:*
R505 (Except:-48)	Open	No Hazard.	AVR1:0
R506 (Except:-48)	Open	Normal operation.	AVR1:*
R507 (Except:-48)	Open	Normal operation.	AVR1:*
R508 (Except:-48)	Open	Normal operation.	AVR1:*



F M E A

Component	Mode		Comment	Output Voltage (V)
R531 (Only -12, -15)	Open		Normal operation.	AVR1:*
R532	Open		Normal operation.	AVR1:*
R533	Open		Normal operation.	AVR1:*
R534	Open		Normal operation.	AVR1:*
R535	Open		Normal operation.	AVR1:*
R601	Open		Normal operation.	AVR1:*
R602	Open		Normal operation.	AVR1:*
R603	Open		Normal operation.	AVR1:*
R604	Open		No Hazard.	AVR1:0
R606	Open		Output voltage decreased. No hazard.	AVR1:decreased
R607 (Except:-48)	Open		No Hazard.	AVR1:0
R610	Open		No Hazard.	AVR1:0
R611	Open		No Hazard.	AVR1:0
R612	Open		Output voltage decreased. No hazard.	AVR1:decreased
SS101	Open		No Hazard.	AVR1:0
	Short		See page 19.	
T201	Open	2	No Hazard.	AVR1:0
		3	No Hazard.	AVR1:0
		5	No Hazard.	AVR1:0
		6	No Hazard.	AVR1:0
		7	Normal operation.	AVR1:*
		8	Normal operation.	AVR1:*
		9	No Hazard.	AVR1:0
	Short	2-3	No Hazard.	AVR1:0



F M E A

Component	Mode		Comment	Output Voltage (V)
T201	Short	5-6	No Hazard.	AVR1:0
		7-8	No Hazard.	AVR1:0
		8-9	No Hazard.	AVR1:0
TH101	Open		No Hazard.	AVR1:0
	Short		Normal operation.	AVR1:*
TR111	Open	D	No Hazard.	AVR1:0
		S	No Hazard.	AVR1:0
		G	No Hazard.	AVR1:0
	Short	D-S	See page 19.	
		S-G	No Hazard.	AVR1:0
		G-D	Fuse opend. No Hazard.	AVR1:0
TR201	Open	D	No Hazard.	AVR1:0
		S	No Hazard.	AVR1:0
		G	No Hazard.	AVR1:0
	Short	D-S	See page 19.	
		S-G	No Hazard.	AVR1:0
		G-D	Fuse opend. No Hazard.	AVR1:0
TR202	Open	D	No Hazard.	AVR1:0
		S	No Hazard.	AVR1:0
		G	No Hazard.	AVR1:0
	Short	D-S	See page 19.	
		S-G	No Hazard.	AVR1:0
		G-D	Fuse opend. No Hazard.	AVR1:0
TR231	Open	C	Normal operation.	AVR1:*



F M E A

Component	Mode		Comment	Output Voltage (V)
TR231	Open	E	Normal operation.	AVR1:*
		B	Normal operation.	AVR1:*
	Short	C-E	Normal operation.	AVR1:0
		E-B	Normal operation.	AVR1:*
		B-C	Normal operation.	AVR1:0
TR232	Open	D	Normal operation.	AVR1:*
		S	Normal operation.	AVR1:*
		G	Normal operation.	AVR1:*
	Short	D-S	No Hazard.	AVR1:0
		S-G	Normal operation.	AVR1:*
		G-D	Normal operation.	AVR1:0
TR233	Open	D	Normal operation.	AVR1:*
		S	Normal operation.	AVR1:*
		G	Normal operation.	AVR1:*
	Short	D-S	No Hazard.	AVR1:0
		S-G	Normal operation.	AVR1:*
		G-D	Normal operation.	AVR1:*
TR250	Open	C	Normal operation.	AVR1:*
		E	Normal operation.	AVR1:*
		B	Normal operation.	AVR1:*
	Short	C-E	No Hazard.	AVR1:0
		E-B	Normal operation.	AVR1:*
		B-C	No Hazard.	AVR1:0
TR261	Open	1 (1)	Normal operation.	AVR1:*



F M E A

Component	Mode		Comment	Output Voltage (V)
TR261	Open	1 (2)	Normal operation.	AVR1:*
		2 (3)	Normal operation.	AVR1:*
		2 (4)	Normal operation.	AVR1:*
		2 (5)	Normal operation.	AVR1:*
		1 (6)	Normal operation.	AVR1:*
	Short	1-1 (1-2)	No Hazard.	AVR1:0
		1-2 (2-3)	Output voltage decreased. No hazard.	AVR1:decreased
		2-2 (4-5)	Normal operation.	AVR1:*
		2-1 (5-6)	Output voltage decreased. No hazard.	AVR1:decreased
TR501 (Except:-48)	Open	D	Normal operation.	AVR1:*
		S	Normal operation.	AVR1:*
		G	Normal operation.	AVR1:*
	Short	D-S	Output voltage decreased. No hazard.	AVR1:decreased
		S-G	Output voltage decreased. No hazard.	AVR1:decreased
		G-D	Output voltage decreased. No hazard.	AVR1:decreased
TR502 (Except:-48)	Open	D	Normal operation.	AVR1:*
		S	Normal operation.	AVR1:*
		G	Normal operation.	AVR1:*
	Short	D-S	Output voltage decreased. No hazard.	AVR1:decreased
		S-G	Output voltage decreased. No hazard.	AVR1:decreased
		G-D	Output voltage decreased. No hazard.	AVR1:decreased
VR601	Open	brush	Output voltage decreased. No hazard.	AVR1:decreased
			Output voltage decreased. No hazard.	AVR1:decreased
	Short		No Hazard.	AVR1:0



F M E A

Component	Mode	Comment	Output Voltage (V)
ZD531	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
ZD532 (Except:12,-15)	Open	Normal operation.	AVR1:*
	Short	No Hazard.	AVR1:0
ZD601 (Only -48)	Open	No Hazard.	AVR1:0
	Short	No Hazard.	AVR1:0



ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
C107	Open		Normal operation.	AVR1:*
D271	Short		Fuse opend. No Hazard.	AVR1:0
SS101	Short		Fuse opend. No Hazard.	AVR1:0
TR111	Short	D-S	Fuse opend. No Hazard.	AVR1:0
TR201	Short	D-S	Fuse opend. No Hazard.	AVR1:0
TR202	Short	D-S	Fuse opend. No Hazard.	AVR1:0