

## ABNORMAL TEST RESULT

OF MODEL CBS20024

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)
C11	Open	Normal operation.	
	Short	See 23 Page.	
C12	Open	Normal operation.	
	Short	See 23 Page.	
C13	Open	Normal operation. (Excluding 3.3V, 5V)	
	Short	See 23 Page. (Excluding 3.3V, 5V)	
C14	Open	Normal operation.	
	Short	See 23 Page.	
C15	Open	Normal operation.	
	Short	See 23 Page.	
C16	Open	Normal operation.	
	Short	See 23 Page.	
C18	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C19	Open	Normal operation.	
	Short	Normal operation.	
C20	Open	Normal operation.	
	Short	Normal operation.	
C21	Open	Normal operation.	
	Short	Normal operation.	
C51	Open	Normal operation.	
	Short	Normal operation.	
C52	Open	Normal operation.	
	Short	Normal operation.	

## F M E A

Component	Mode	Comment	Output Voltage (V)
C53	Open	Normal operation.	
	Short	Normal operation.	
C54	Open	Normal operation.	
	Short	Normal operation.	
C55	Open	Normal operation.	
	Short	Normal operation.	
C56	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C57	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C59	Open	Normal operation. (Only 3.3V, 5V)	
	Short	No Hazard. (Only 3.3V, 5V)	Decreased
C102	Open	Normal operation.	
	Short	Normal operation.	
C103	Open	See 23 Page.	
	Short	See 23 Page.	
C104	Open	No Hazard.	0 [V]
	Short	No Hazard.	0 [V]
C105	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C106	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C107	Open	Normal operation.	
	Short	No Hazard.	0 [V]

F M E A

Component	Mode	Comment	Output Voltage (V)
C108	Open	Normal operation.	
	Short	Normal operation.	
C109	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C110	Open	Normal operation.	
	Short	Normal operation.	
C111	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C112	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C113	Open	Normal operation.	
	Short	Normal operation.	
C114	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C115	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C116	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C117	Open	Normal operation.	
	Short	Normal operation.	
C118	Open	See 23 Page.	
	Short	No Hazard.	0 [V]
C119	Open	Normal operation.	
	Short	Normal operation.	

## F M E A

Component	Mode	Comment	Output Voltage (V)
C120	Open	Normal operation.	
	Short	Normal operation.	
C121	Open	Normal operation.	
	Short	Normal operation.	
C122	Open	Normal operation.	
	Short	Normal operation.	
C123	Open	Normal operation.	
	Short	Normal operation.	
C124	Open	No Hazard.	Decreased
	Short	Normal operation.	
C125	Open	Normal operation.	
	Short	See 23 Page.	
C126	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C501	Open	Normal operation.	
	Short	Normal operation.	
C502	Open	Normal operation.	
	Short	Normal operation.	
C503	Open	No Hazard.	
	Short	No Hazard.	Decreased
C504	Open	No Hazard.	
	Short	No Hazard.	Decreased
C505	Open	Normal operation.	
	Short	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
C506	Open	Normal operation.	
	Short	Normal operation.	
C507	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C508	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C509	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C510	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C511	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C512	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C513	Open	Normal operation.	
	Short	Normal operation.	
C514	Open	Normal operation.	
	Short	Normal operation.	
C515	Open	Normal operation. (Excluding 3.3V, 5V)	
	Short	No Hazard. (Excluding 3.3V, 5V)	0 [V]
C516	Open	Normal operation.	
	Short	No Hazard.	Decreased
C517	Open	Normal operation. (Excluding 3.3V, 5V)	
	Short	No Hazard. (Excluding 3.3V, 5V)	Decreased

## F M E A

Component	Mode	Comment	Output Voltage (V)
C519	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C520	Open	No Hazard. (Only 3.3V, 5V)	
	Short	No Hazard. (Only 3.3V, 5V)	Decreased
C521	Open	Normal operation.	
	Short	No Hazard.	0 [V]
C522	Open	Normal operation.	
	Short	No Hazard.	0 [V]
D51	Open	No Hazard. (Only 3.3V, 5V)	0 [V]
	Short	See 23 Page. (Only 3.3V, 5V)	
D101	Open	See 23 Page.	
	Short	See 23 Page.	
D102	Open	Normal operation.	
	Short	No Hazard.	0 [V]
D103	Open	No Hazard.	0 [V]
	Short	See 23 Page.	
D104	Open	No Hazard.	0 [V]
	Short	Normal operation.	
D105	Open	Normal operation.	
	Short	Normal operation.	
D106	Open	Normal operation.	
	Short	Normal operation.	
D107	Open	Normal operation. (Only 3.3V, 5V)	
	Short	Normal operation. (Only 3.3V, 5V)	

## F M E A

Component	Mode		Comment	Output Voltage (V)
D108	Open		Normal operation.	
	Short		Normal operation.	
D109	Open		No Hazard.	Decreased
	Short		No Hazard.	Decreased
D110	Open		Normal operation.	
	Short		Normal operation.	
D111	Open		Normal operation.	
	Short		Normal operation.	
D112	Open		Normal operation.	
	Short		Normal operation.	
D113	Open		See 23 Page.	
	Short		Normal operation.	
D501	Open		Normal operation.	
	Short		No Hazard.	
D502	Open		Normal operation.	
	Short		No Hazard.	
D503	Open		No Hazard. (Only 3.3V, 5V)	0 [V]
	Short		Normal operation. (Only 3.3V, 5V)	
IC101	Open	1	No Hazard.	0 [V]
		2	No Hazard.	0 [V]
		3	L11 opend, No Hazard.	0 [V]
		4	Normal operation.	
		5	Normal operation.	
		6	Normal operation.	



F M E A

Component	Mode		Comment	Output Voltage (V)
IC101	Open	7	No Hazard.	0 [V]
		8	Normal operation.	
		9	Normal operation.	
		10	No Hazard.	0 [V]
		11	No Hazard.	0 [V]
		12	See 23 Page.	
		13	No Hazard.	Decreased
		14	Normal operation.	
		15	Normal operation.	
		16	Normal operation.	
		17	No Hazard.	Decreased
		18	No Hazard.	0 [V]
		19	No Hazard.	0 [V]
		20	No Hazard.	0 [V]
	Short	1-2	No Hazard.	0 [V]
		2-3	No Hazard.	0 [V]
		3-4	Normal operation.	
		4-5	Normal operation.	
		5-6	Normal operation.	
		6-7	Normal operation.	
		7-8	Normal operation.	
		8-9	Normal operation.	
		9-10	No Hazard.	0 [V]
		11-12	No Hazard.	0 [V]

## F M E A

Component	Mode		Comment	Output Voltage (V)
IC101	Short	12-13	No Hazard.	0 [V]
		13-14	Normal operation.	
		14-15	Normal operation.	
		15-16	Normal operation.	
		16-17	Normal operation.	
		17-18	Normal operation.	
		18-19	Normal operation.	
		19-20	No Hazard.	0 [V]
IC501	Open	K	No Hazard.	0 [V]
		A	No Hazard.	0 [V]
		R	No Hazard.	0 [V]
	Short	A-K	No Hazard.	Decreased
		K-R	Normal operation.	
		R-A	No Hazard.	0 [V]
IC502	Open	K	Normal operation.	
		A	Normal operation.	
		R	Normal operation.	
	Short	A-K	No Hazard.	0 [V]
		K-R	No Hazard.	0 [V]
		R-A	Normal operation.	
IC503	Open	1	No Hazard.	0 [V]
		2	No Hazard.	0 [V]
		3	No Hazard.	0 [V]
		4	No Hazard.	0 [V]

## F M E A

Component	Mode		Comment	Output Voltage (V)
IC503	Open	5	Normal operation.	
		6	Normal operation.	
		7	Normal operation.	
		8	No Hazard.	0 [V]
	Short	1-2	No Hazard.	0 [V]
		2-3	No Hazard.	0 [V]
		3-4	No Hazard.	Decreased
		5-6	Normal operation.	
		6-7	Normal operation.	
		7-8	Normal operation.	
L11	Open		No Hazard.	0 [V]
	Short		Normal operation.	
L51	Open	1, 2	No Hazard.	0 [V]
		3, 4	No Hazard. (Only 3.3V, 5V)	0 [V]
	Short	1-2	No Hazard.	Decreased
		3-4	No Hazard. (Only 3.3V, 5V)	0 [V]
		2-4	No Hazard. (Only 3.3V, 5V)	Decreased
		3-1	No Hazard. (Only 3.3V, 5V)	0 [V]
PC101	Open	LED. A, K	Normal operation.	
		LED. C, E	Normal operation.	
	Short	TR. A-K	Normal operation.	
		TR. C-E	No Hazard.	0 [V]
PC102	Open	LED. A, K	No Hazard.	0 [V]
		TR. Vo, GND	No Hazard.	0 [V]

## F M E A

Component	Mode		Comment	Output Voltage (V)
PC102	Open	TR. Vcc	No Hazard.	0 [V]
	Short	TR. A-K	No Hazard.	0 [V]
		TR. Vo-GND	No Hazard.	0 [V]
		TR. Vcc-GND	No Hazard.	0 [V]
R11	Open		Normal operation.	
R12	Open		No Hazard.	0 [V]
R13	Open		Normal operation.	
R14	Open		Normal operation.	
R51	Open		Normal operation.	
R52	Open		Normal operation.	
R53	Open		Normal operation.	
R54	Open		Normal operation.	
R55	Open		Normal operation.	
R57	Open		Normal operation.	
R58	Open		Normal operation. (Only 12V, 24V, 28V)	
R59	Open		Normal operation. (Only 12V, 24V, 28V)	
R101	Open		Normal operation.	
R102	Open		Normal operation.	
R104	Open		Normal operation.	
R105	Open		Normal operation.	
R106	Open		Normal operation.	
R107	Open		No Hazard.	0 [V]
R108	Open		Normal operation.	
R109	Open		Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R110	Open	Normal operation.	
R111	Open	Normal operation.	
R112	Open	Normal operation.	
R113	Open	Normal operation.	
R114	Open	Normal operation.	
R115	Open	No Hazard.	0 [V]
R116	Open	See 23 Page.	
R117	Open	See 23 Page.	
R118	Open	See 23 Page.	
R119	Open	No Hazard.	0 [V]
R120	Open	Normal operation.	
R121	Open	Normal operation.	
R122	Open	Normal operation.	
R123	Open	Normal operation.	
R124	Open	No Hazard.	0 [V]
R125	Open	No Hazard.	0 [V]
R126	Open	Normal operation.	
R127	Open	Normal operation.	
R128	Open	Normal operation.	
R129	Open	No Hazard.	Decreased
R130	Open	Normal operation.	
R131	Open	Normal operation.	
R132	Open	No Hazard.	0 [V]
R133	Open	Normal operation.	

## F M E A

Component	Mode	Comment	Output Voltage (V)
R134	Open	Normal operation.	
R135	Open	Normal operation.	
R136	Open	Normal operation.	
R137	Open	No Hazard.	0 [V]
R138	Open	Normal operation.	
R139	Open	Normal operation.	
R140	Open	Normal operation.	
R141	Open	Normal operation.	
R142	Open	Normal operation.	
R143	Open	Normal operation.	
R144	Open	Normal operation.	
R145	Open	No Hazard.	0 [V]
R146	Open	Normal operation.	
R147	Open	No Hazard.	Decreased
R148	Open	Normal operation.	
R149	Open	Normal operation.	
R150	Open	Normal operation.	
R151	Open	No Hazard.	0 [V]
R152	Open	No Hazard.	Decreased
R153	Open	Normal operation.	
R154	Open	No Hazard.	Decreased
R155	Open	No Hazard.	0 [V]
R156	Open	Normal operation.	
R157	Open	Normal operation.	

F M E A

Component	Mode	Comment	Output Voltage (V)
R158	Open	No Hazard.	Decreased
R159	Open	No Hazard.	0 [V]
R160	Open	Normal operation. (Excluding 3.3V, 5V)	
R161	Open	Normal operation.	
R163	Open	Normal operation.	
R164	Open	No Hazard.	0 [V]
R165	Open	No Hazard.	0 [V]
R501	Open	No Hazard. (Only 12V, 15V)	0 [V]
R502	Open	No Hazard.	0 [V]
R503	Open	No Hazard.	0 [V]
R505	Open	No Hazard.	
R506	Open	No Hazard.	0 [V]
R507	Open	No Hazard.	0 [V]
R508	Open	No Hazard. (Excluding 24V)	0 [V]
R509	Open	No Hazard.	Decreased
R510	Open	No Hazard.	Decreased
R511	Open	No Hazard.	
R512	Open	No Hazard.	0 [V]
R513	Open	Normal operation. (Excluding 24V, 28V)	
R514	Open	Normal operation.	
R515	Open	Normal operation.	
R516	Open	Normal operation. (Only 24V, 28V)	
R517	Open	No Hazard.	0 [V]
R518	Open	Normal operation.	

## F M E A

Component	Mode		Comment	Output Voltage (V)
R519	Open		Normal operation.	
R520	Open		Normal operation.	
R521	Open		No Hazard.	0 [V]
R522	Open		No Hazard.	Decreased
R523	Open		No Hazard.	0 [V]
R524	Open		Normal operation.	
R525	Open		No Hazard.	Decreased
R526	Open		No Hazard.	0 [V]
R527	Open		Normal operation.	
R528	Open		No Hazard. (Excluding 3.3V, 5V)	0 [V]
SS51	Open	Both-Side	No Hazard.	0 [V]
		One-Side	Normal operation.	
	Short		No Hazard.	Decreased
SS52	Open	Both-Side	No Hazard.	0 [V]
		One-Side	Normal operation.	
	Short		No Hazard.	Decreased
T11	Open	1, 2	No Hazard.	0 [V]
		3, 4	No Hazard.	0 [V]
	Short	1-2	See 23 Page.	
		3-4	See 23 Page.	
T12	Open	7, 8	No Hazard.	0 [V]
		1, 3	Normal operation.	
	Short	1-3	Normal operation.	
		7-8	Normal operation.	



F M E A

Component	Mode		Comment	Output Voltage (V)
T101	Open	1, 2	No Hazard.	0 [V]
		3, 4	Normal operation.	
		5, 6	No Hazard.	0 [V]
		7, 8	No Hazard.	0 [V]
	Short	1-2	No Hazard.	0 [V]
		2-3	See 23 Page.	
		3-4	No Hazard.	0 [V]
		5-6	No Hazard.	0 [V]
		6-7	See 23 Page.	
		7-8	No Hazard.	0 [V]
TH11	Open		Normal operation.	
	Short		No Hazard.	0 [V]
TR11	Open	D	See 23 Page.	
		S	See 24 Page.	
		G	See 24 Page.	
	Short	D-S	See 24 Page.	
		S-G	See 24 Page.	
		G-D	See 24 Page.	
TR12	Open	C	Normal operation.	
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]

## F M E A

Component	Mode		Comment	Output Voltage (V)
TR13	Open	C	Normal operation.	
		E	L11 opend, No Hazard.	0 [V]
		B	L11 opend, No Hazard.	0 [V]
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]
TR101	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]
TR102	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]
TR103	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	Normal operation.	

F M E A

Component	Mode		Comment	Output Voltage (V)
TR104	Open	C	No Hazard.	0 [V]
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	No Hazard.	0 [V]
		E-B	No Hazard.	0 [V]
		B-C	No Hazard.	0 [V]
TR105	Open	C	No Hazard.	0 [V]
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	No Hazard.	0 [V]
		E-B	No Hazard.	0 [V]
		B-C	No Hazard.	0 [V]
TR106	Open	C	No Hazard.	0 [V]
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	Normal operation.	
		E-B	No Hazard.	0 [V]
		B-C	Normal operation.	
TR107	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]

## F M E A

Component	Mode		Comment	Output Voltage (V)
TR108	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	No Hazard.	Decreased
		E-B	Normal operation.	
		B-C	No Hazard.	Decreased
TR109	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	Normal operation.	
TR110	Open	C	No Hazard.	0 [V]
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	Normal operation.	
		E-B	No Hazard.	0 [V]
		B-C	Normal operation.	
TR112	Open	C	Normal operation.	
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	Normal operation.	
		E-B	Normal operation.	
		B-C	Normal operation.	

## F M E A

Component	Mode		Comment	Output Voltage (V)
TR113	Open	C	Normal operation.	
		E	Normal operation.	
		B	Normal operation.	
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]
TR501	Open	C	No Hazard.	0 [V]
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	No Hazard.	
		E-B	No Hazard.	0 [V]
		B-C	See 24 Page.	
TR502	Open	C	No Hazard.	0 [V]
		E	No Hazard.	0 [V]
		B	No Hazard.	0 [V]
	Short	C-E	No Hazard.	0 [V]
		E-B	Normal operation.	
		B-C	No Hazard.	0 [V]
ZD11	Open		Normal operation.	
	Short		Normal operation.	
ZD101	Open		Normal operation.	
	Short		Normal operation.	
ZD102	Open		See 24 Page.	
	Short		No Hazard.	0 [V]

F M E A

Component	Mode	Comment	Output Voltage (V)
ZD103	Open	See 24 Page.	
	Short	See 24 Page.	
ZD104	Open	Normal operation.	
	Short	No Hazard.	0 [V]
ZD105	Open	Normal operation.	
	Short	Normal operation.	
ZD106	Open	Normal operation.	
	Short	Normal operation.	
ZD107	Open	No Hazard.	0 [V]
	Short	Normal operation.	
ZD108	Open	Normal operation.	
	Short	No Hazard.	Decreased
ZD109	Open	Normal operation.	
	Short	Normal operation.	
ZD501	Open	Normal operation.	
	Short	No Hazard.	0 [V]
ZD502	Open	Normal operation. (Only 24V, 28V)	
	Short	Normal operation. (Only 24V, 28V)	
ZD504	Open	No Hazard. (Only 24V, 48V)	0 [V]
	Short	Normal operation. (Only 24V, 28V)	

ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
C11	Short		No Hazard.	0 [V]
C12	Short		L11 opened.	0 [V]
C13	Short		L11 opened. (Excluding 3.3V, 5V)	0 [V]
C14	Short		L11 opened.	0 [V]
C15	Short		L11 opened.	0 [V]
C16	Short		L11 opened.	0 [V]
C103	Open		R115 opened and TR104 shorted, No hazard.	0 [V]
	Short		Normal operation.	
C118	Open		No Hazard.	Decreased
C125	Short		No Hazard.	0 [V]
D51	Short		No Hazard. (Only 3.3V, 5V)	Decreased
D101	Open		Normal operation.	
	Short		Normal operation.	
D103	Short		R115 opened and TR104 shorted, No hazard.	0 [V]
D113	Open		R115 opened, No hazard.	0 [V]
IC101	Open	12	No Hazard.	Decreased
R116	Open		Normal operation.	
R117	Open		R115 opened, No hazard.	0 [V]
R118	Open		Normal operation.	
T11	Short	1-2	L11 opened.	0 [V]
		3-4	No Hazard.	0 [V]
T101	Short	2-3	R115 opened, No hazard.	0 [V]
		6-7	R115 opened, No hazard.	0 [V]
TR11	Open	D	No Hazard.	0 [V]

ABNORMAL TEST RESULT

Component	Mode		Comment	Output Voltage (V)
TR11	Open	S	No Hazard.	0 [V]
		G	No Hazard.	0 [V]
	Short	D-S	L11 opened.	0 [V]
		S-G	No Hazard.	0 [V]
		G-D	L11 opened.	0 [V]
TR501	Short	B-C	ZD501 opend, No Hazard.	Decreased
ZD102	Open		R115 opened, No hazard.	0 [V]
ZD103	Open		Normal operation.	
	Short		Normal operation.	