



## ABNORMAL TEST RESULT

OF MODEL WDA90F

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 : 2/13 ~ 12/13)

( Abnormal Test Result: 13/13 ~ 13/13)

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 open.No Hazard. | AVR1:0             |
| C102      | Open  | Normal operation.    | AVR1:*             |
|           | Short | Fuse open.No Hazard. | AVR1:0             |
| C103      | Open  | Normal operation.    | AVR1:*             |
|           | Short | Normal operation.    | AVR1:*             |
| C104      | Open  | Normal operation.    | AVR1:*             |
|           | Short | Normal operation.    | AVR1:*             |
| C109      | Open  | No Hazard.           | AVR1:decreased     |
|           | Short | Fuse open.No Hazard. | AVR1:0             |
| C110      | Open  | No Hazard.           | AVR1:decreased     |
|           | Short | Fuse open.No Hazard. | AVR1:0             |
| C111      | Open  | Normal operation.    | AVR1:*             |
|           | Short | No Hazard.           | AVR1:decreased     |
| C114      | Open  | Normal operation.    | AVR1:*             |
|           | Short | Normal operation.    | AVR1:*             |
| C201      | Open  | Normal operation.    | AVR1:*             |
|           | Short | No Hazard.           | AVR1:decreased     |
| C202      | Open  | Normal operation.    | AVR1:*             |
|           | Short | No Hazard.           | AVR1:decreased     |
| C203      | Open  | Normal operation.    | AVR1:*             |
|           | Short | No Hazard.           | AVR1:decreased     |
| C204      | Open  | Normal operation.    | AVR1:*             |
|           | Short | No Hazard.           | AVR1:decreased     |



## F M E A

| Component         | Mode  | Comment               | Output Voltage (V) |
|-------------------|-------|-----------------------|--------------------|
| C205              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | Fuse opend.No Hazard. | AVR1:0             |
| C206              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | Normal operation.     | AVR1:*             |
| C207              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | Normal operation.     | AVR1:*             |
| C212              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | Normal operation.     | AVR1:*             |
| C213              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C501              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C502              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C503              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C505 (Only -12)   | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C506              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C507              | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |
| C508 (Except:-48) | Open  | Normal operation.     | AVR1:*             |
|                   | Short | No Hazard.            | AVR1:decreased     |



## F M E A

| Component | Mode  | Comment           | Output Voltage (V) |
|-----------|-------|-------------------|--------------------|
| C512      | Open  | Normal operation. | AVR1:*             |
|           | Short | No Hazard.        | AVR1:decreased     |
| C515      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| C516      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| C601      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| C602      | Open  | Normal operation. | AVR1:*             |
|           | Short | No Hazard.        | AVR1:0             |
| C603      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| D101      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| D201      | Open  | Normal operation. | AVR1:*             |
|           | Short | No Hazard.        | AVR1:decreased     |
| D202      | Open  | Normal operation. | AVR1:*             |
|           | Short | No Hazard.        | AVR1:decreased     |
| D203      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| D204      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |
| D205      | Open  | Normal operation. | AVR1:*             |
|           | Short | Normal operation. | AVR1:*             |



## F M E A

| Component | Mode  |     | Comment               | Output Voltage (V) |
|-----------|-------|-----|-----------------------|--------------------|
| D206      | Open  |     | Normal operation.     | AVR1:*             |
|           | Short |     | Normal operation.     | AVR1:*             |
| D207      | Open  |     | Normal operation.     | AVR1:*             |
|           | Short |     | Normal operation.     | AVR1:*             |
| IC201     | 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   | Normal operation.     | AVR1:*             |
|           |       | 7   | Normal operation.     | AVR1:*             |
|           |       | 8   | No Hazard.            | AVR1:0             |
|           | Short | 1-2 | No Hazard.            | AVR1:decreased     |
|           |       | 2-3 | No Hazard.            | AVR1:decreased     |
|           |       | 3-4 | Fuse opend.No Hazard. | AVR1:0             |
|           |       | 5-6 | Fuse opend.No Hazard. | AVR1:0             |
|           |       | 6-7 | Normal operation.     | AVR1:*             |
|           |       | 7-8 | Normal operation.     | AVR1:*             |
| IC601     | Open  | 1   | Normal operation.     | AVR1:*             |
|           |       | 2   | Normal operation.     | AVR1:*             |
|           |       | 3   | No Hazard.            | AVR1:0             |
|           |       | 4   | No Hazard.            | AVR1:0             |
|           |       | 5   | No Hazard.            | AVR1:0             |
|           | Short | 1-2 | Normal operation.     | AVR1:*             |



## F M E A

| Component | Mode  |      | Comment               | Output Voltage (V) |
|-----------|-------|------|-----------------------|--------------------|
| IC601     |       | 2-3  | 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             |
|           |       | 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:*             |
| L501      | Open  |      | No Hazard.            | AVR1:0             |
|           | Short |      | Normal operation.     | AVR1:*             |
| LED501    | Open  |      | Normal operation.     | AVR1:*             |
|           | 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             |



## F M E A

| Component | Mode | Comment           | Output Voltage (V) |
|-----------|------|-------------------|--------------------|
| R101      | Open | Normal operation. | AVR1:*             |
| R102      | Open | Normal operation. | AVR1:*             |
| R103      | Open | Normal operation. | AVR1:*             |
| R110      | Open | Normal operation. | AVR1:*             |
| R111      | Open | Normal operation. | AVR1:*             |
| R112      | Open | Normal operation. | AVR1:*             |
| R113      | Open | Normal operation. | AVR1:*             |
| R114      | Open | Normal operation. | AVR1:*             |
| R115      | Open | Normal operation. | AVR1:*             |
| R116      | Open | No Hazard.        | AVR1:0             |
| R201      | Open | No Hazard.        | AVR1:0             |
| R202      | Open | Normal operation. | AVR1:*             |
| R203      | Open | No Hazard.        | AVR1:0             |
| R205      | Open | Normal operation. | AVR1:*             |
| R206      | Open | No Hazard.        | AVR1:decreased     |
| R208      | Open | No Hazard.        | AVR1:0             |
| R209      | Open | No Hazard.        | AVR1:0             |
| R210      | Open | Normal operation. | AVR1:*             |
| R212      | Open | No Hazard.        | AVR1:0             |
| R214      | Open | No Hazard.        | AVR1:decreased     |
| R215      | Open | No Hazard.        | AVR1:decreased     |
| R216      | Open | No Hazard.        | AVR1:decreased     |
| R217      | Open | No Hazard.        | AVR1:decreased     |
| R219      | Open | Normal operation. | AVR1:*             |
| R220      | Open | Normal operation. | AVR1:*             |



## F M E A

| Component       | Mode | Comment           | Output Voltage (V) |
|-----------------|------|-------------------|--------------------|
| R222            | Open | Normal operation. | AVR1:*             |
| R223            | Open | Normal operation. | AVR1:*             |
| R224            | Open | Normal operation. | AVR1:*             |
| R225            | Open | Normal operation. | AVR1:*             |
| R226            | Open | Normal operation. | AVR1:*             |
| R230            | Open | Normal operation. | AVR1:*             |
| R231            | Open | Normal operation. | AVR1:*             |
| R501            | Open | Normal operation. | AVR1:*             |
| R502 (Only -48) | Open | Normal operation. | AVR1:*             |
| R503            | Open | Normal operation. | AVR1:*             |
| R504 (Only -48) | Open | Normal operation. | AVR1:*             |
| R505            | Open | Normal operation. | AVR1:*             |
| R506            | Open | Normal operation. | AVR1:*             |
| R507            | Open | Normal operation. | AVR1:*             |
| R508            | Open | Normal operation. | AVR1:*             |
| R509            | Open | Normal operation. | AVR1:*             |
| R510            | Open | Normal operation. | AVR1:*             |
| R513            | Open | Normal operation. | AVR1:*             |
| R514 (Only -48) | Open | Normal operation. | AVR1:*             |
| R601            | Open | Normal operation. | AVR1:*             |
| R602            | Open | Normal operation. | AVR1:*             |
| R603            | Open | Normal operation. | AVR1:*             |
| R604            | Open | Normal operation. | AVR1:*             |
| R605            | Open | No Hazard.        | AVR1:0             |
| R606            | Open | No Hazard.        | AVR1:0             |





## F M E A

| Component         | Mode  |     | Comment              | Output Voltage (V) |
|-------------------|-------|-----|----------------------|--------------------|
| R607              | Open  |     | No Hazard.           | AVR1:decreased     |
| R608 (Except:-48) | Open  |     | Normal operation.    | AVR1:*             |
| R610              | Open  |     | Normal operation.    | AVR1:*             |
| SS101             | 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 open.No Hazard. | AVR1:0             |
|                   |       | 2-3 | Fuse open.No Hazard. | AVR1:0             |
|                   |       | 3-4 | Fuse open.No Hazard. | AVR1:0             |
| SS501             | Open  | 1   | Normal operation.    | AVR1:*             |
|                   |       | 2   | No Hazard.           | AVR1:decreased     |
|                   |       | 3   | Normal operation.    | AVR1:*             |
|                   | Short | 1-2 | No Hazard.           | AVR1:decreased     |
|                   |       | 2-3 | No Hazard.           | AVR1:decreased     |
| SS502 (Only -12)  | Open  | 1   | Normal operation.    | AVR1:*             |
|                   |       | 2   | No Hazard.           | AVR1:decreased     |
|                   |       | 3   | Normal operation.    | AVR1:*             |
|                   | Short | 1-2 | No Hazard.           | AVR1:decreased     |
|                   |       | 2-3 | No Hazard.           | AVR1:decreased     |
| T201              | Open  | 1   | No Hazard.           | AVR1:0             |
|                   |       | 2   | No Hazard.           | AVR1:0             |
|                   |       | 3   | No Hazard.           | AVR1:0             |
|                   |       | 4   | Normal operation.    | AVR1:*             |



## F M E A

| Component | Mode  |           | Comment               | Output Voltage (V) |
|-----------|-------|-----------|-----------------------|--------------------|
| T201      | Open  | 5         | Normal operation.     | AVR1:*             |
|           |       | 8         | Normal operation.     | AVR1:*             |
|           |       | 9         | Normal operation.     | AVR1:*             |
|           |       | 10        | Normal operation.     | AVR1:*             |
|           |       | 11        | Normal operation.     | AVR1:*             |
|           | Short | 1-2       | Fuse open. No Hazard. | AVR1:0             |
|           |       | 2-3       | Normal operation.     | AVR1:*             |
|           |       | 3-4       | Fuse open. No Hazard. | AVR1:0             |
|           |       | 4-5       | No Hazard.            | AVR1:decreased     |
|           |       | 8 9-10 11 | No Hazard.            | AVR1:decreased     |
| TH101     | Open  |           | No Hazard.            | AVR1:0             |
|           | Short |           | Normal operation.     | AVR1:*             |
| TR201     | Open  | D         | No Hazard.            | AVR1:0             |
|           |       | S         | No Hazard.            | AVR1:0             |
|           |       | G         | No Hazard.            | AVR1:0             |
|           | Short | D-S       | See page 13.          |                    |
|           |       | S-G       | No Hazard.            | AVR1:0             |
|           |       | G-D       | See page 13.          |                    |
| TR202     | Open  | C         | No Hazard.            | AVR1:decreased     |
|           |       | E         | No Hazard.            | AVR1:decreased     |
|           |       | B         | No Hazard.            | AVR1:decreased     |
|           | Short | C-E       | No Hazard.            | AVR1:0             |
|           |       | E-B       | Normal operation.     | AVR1:*             |
|           |       | B-C       | No Hazard.            | AVR1:0             |



## F M E A

| Component        | Mode  |       | Comment           | Output Voltage (V) |
|------------------|-------|-------|-------------------|--------------------|
| TR203            | Open  | C     | Normal operation. | AVR1:*             |
|                  |       | E     | Normal operation. | AVR1:*             |
|                  |       | B     | Normal operation. | AVR1:*             |
|                  | Short | C-E   | No Hazard.        | AVR1:decreased     |
|                  |       | E-B   | Normal operation. | AVR1:*             |
|                  |       | B-C   | No Hazard.        | AVR1:decreased     |
| TR601            | 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   | No Hazard.        | AVR1:0             |
| VR601            | Open  | brush | No Hazard.        | AVR1:decreased     |
|                  |       |       | No Hazard.        | AVR1:0             |
|                  | Short |       | Normal operation. | AVR1:increased     |
| ZD202            | Open  |       | Normal operation. | AVR1:*             |
|                  | Short |       | No Hazard.        | AVR1:0             |
| ZD203            | Open  |       | No Hazard.        | AVR1:0             |
|                  | Short |       | No Hazard.        | AVR1:decreased     |
| ZD601 (Only -48) | Open  |       | No Hazard.        | AVR1:0             |
|                  | Short |       | Normal operation. | AVR1:*             |
| ZD602            | Open  |       | Normal operation. | AVR1:*             |
|                  | Short |       | No Hazard.        | AVR1:0             |
| ZD603 (Only -48) | Open  |       | Normal operation. | AVR1:*             |



F M E A

| Component |            | Mode  |  | Comment    | Output Voltage (V) |
|-----------|------------|-------|--|------------|--------------------|
| ZD603     | (Only -48) | Short |  | No Hazard. | AVR1:0             |



ABNORMAL TEST RESULT

| Component | Mode  |     | Comment                 | Output Voltage (V) |
|-----------|-------|-----|-------------------------|--------------------|
| TR201     | Short | D-S | Fuse opened, No hazard. | AVR1:0             |
|           |       | G-D | Fuse opened, No hazard. | AVR1:0             |