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LG GR-J303TG Owner's Manual

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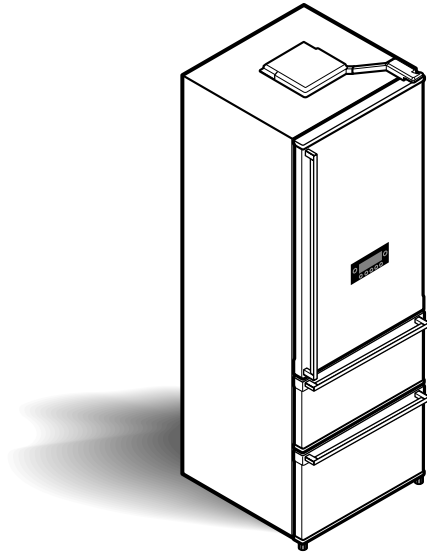
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KIMCHI REFRIGERATOR

SERVICE MANUAL

CAUTION

PLEASE READ CAREFULLY THE SAFETY PRECAUTIONS OF THIS MANUAL
BEFORE CHECKING OR OPERATING THE REFRIGERATOR.



MODEL : GR-J303T*

SAFETY INSTRUCTIONS

1. Firstly check that there is electrical leakage in the main body of the product.
2. Perform work always after removing the power plugs in handling with the part where electricity conducts through.
3. Wear a rubber gloves(insulation gloves) for preventing electrical shock accident in case of testing with power on.
4. Always check rated current, voltage and capacity in using the instruments.
5. Exercise care so that water does not enter into electrical parts around the machine room.
6. Take care so that things should not fall down by removing them cleanly on the product when leaning the product forward or backward. Especially, take care of thin things (glass panels, books).
7. Ensure to consult the repair and maintenance center shop when the cold storage cycle is damaged (to prevent that gas inside of the cycle gets a room dirty).

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1. PRODUCT SPECIFICATIONS

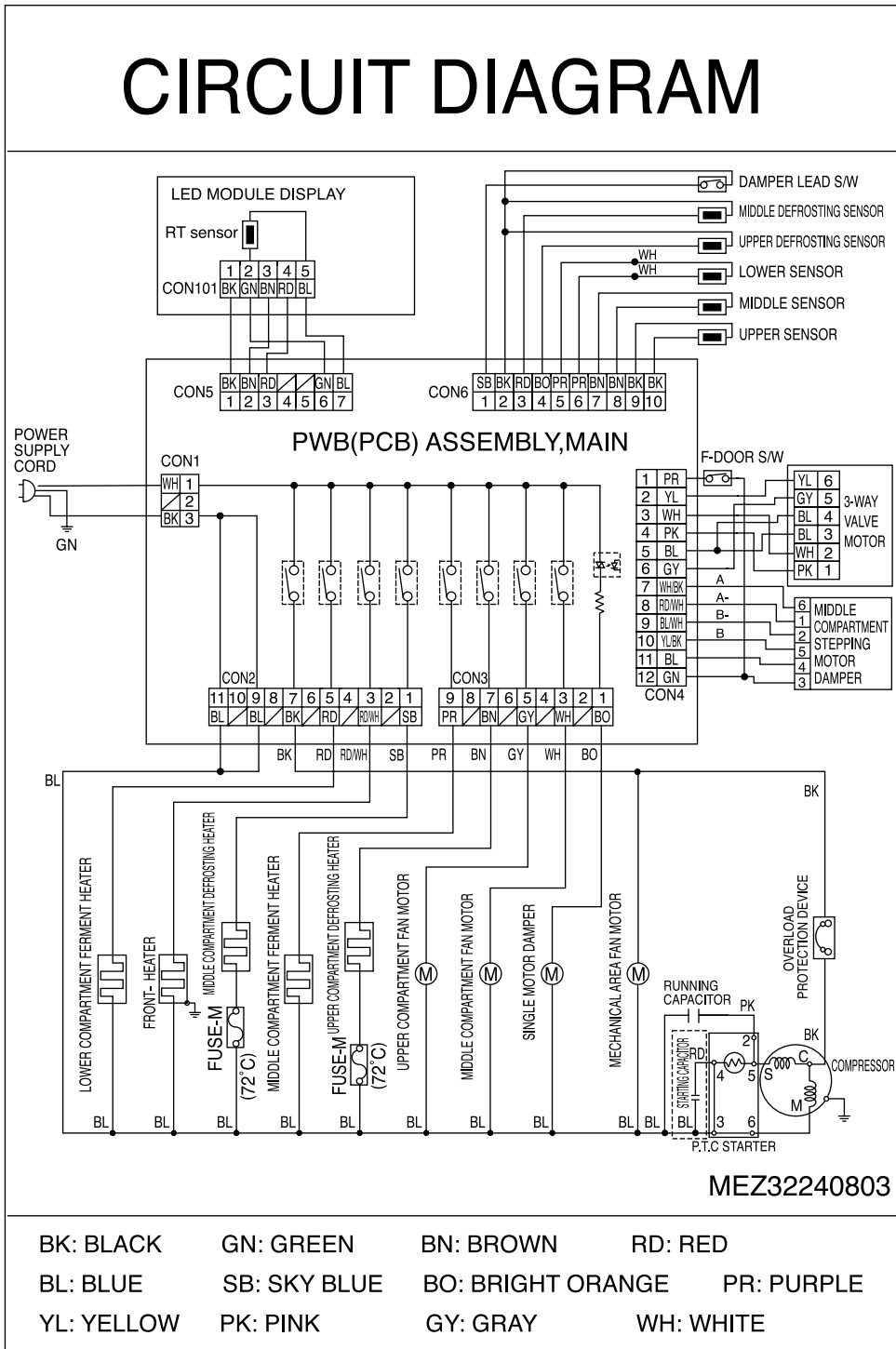
1-1. GR-J303T*

MODEL		GR-J303TG	GR-J303TS
ITEMS		SPEC	SPEC
Rating		115V/60Hz	115V/60Hz
Capacity	Net Capacity	300 L	300 L
	Top Compartment	156 L	156 L
	Middle/Bottom Compartment	144 L	144 L
Dimensions (mm)		667(W) X 670.4(D) 1775(H)mm	667(W) X 670.4(D) 1775(H)mm
Net Weight		113 Kg	103 Kg
Motor Power Consumption		138W	138W
Cooling Method		Indirect Cooling System	
Defrosting System	Method	Force	
	Start	Automation	
	End	Automation	
	Evaporation	Force	
Insulation		Light Polyurethane Foam	
Evaporation Dish		1 EA (Behind)	
Basket		2 EA	
Storage Container		14 EA	8 EA
Drawer		1 EA	3 EA
Shelf		3 EA	1 EA
Flap Door		1 EA	
Low temperature Catalyst Deodorization		2 EA	
Cooling Cycle	Compressor	LC62LBCM	
	Evaporator of Top Compartment	Fin Tube Type	
	Evaporator of Middle Compartment	Fin Tube Type	
	Condenser 2 EA	Wire Condenser, Back Plate Condenser	
	Refrigerant	R134a (160 g)	R134a (160 g)
	Refrigerant Oil	α10G 310cc	α10G 311cc
Defrosting Device		Heater, Sheath	

ITEMS		SPEC	SPEC	
Electrical System Rating	P.T.C	P6R8MD	P6R8MD	
	Overload Protector	4TM314TFB	4TM314TFB	
	Fan Motor(Top)	Ø110 Fan	Ø110 Fan	
	Fan Motor(Middle)	Ø110 Fan	Ø110 Fan	
	Condenser Cooling Fan Motor	Ø110 Fan	Ø110 Fan	
	Defrosting Heater	Top	115 V 140 W	115 V 140 W
		Middle	115 V 180 W(Half wave 90 W)	115 V 180 W(Half wave 90 W)
	Front-C Heater	120 V(UL) 7 W	120 V(UL) 7 W	
	Fuse-M(Top)	Cuttet at 70 °C	Cuttet at 70 °C	
	Fuse-M(Middle)	Cuttet at 70 °C	Cuttet at 70 °C	
	Protection Fuse	250 V 9 A	250 V 9 A	
	Capacitor, R	14µF / 250Vac	14µF / 250Vac	

2. CIRCUIT DIAGRAM

CIRCUIT DIAGRAM



3. MICOM FUNCTION AND EXPLANATIONS OF CIRCUITS

3-1. EXPLANATION OF FUNCTION

3-1-1. DISPLAY PART

(1) BEST MODEL(GR-J303TG)



(2) BETTER MODEL(GR-J303TS)



NOTCH	Cabbage/Radish/ Mul Kimchi			Vegetble/ Fruit			Light Freezing			Frozen Food				Chilled Food		
	Min	Mid	Max	Min	Mid	Max	Min	Mid	Max	Min	Mid	Max	Max	Min	Mid	Max
Temperature setting	1.0°C	-0.5°C	-2.0°C	4.5°C	3.5°C	2.5°C	-4.0°C	-5.0°C	-6.0°C	-15°C	-18°C	-21°C	-25°C	5.0°C	2.0°C	0.0°C







1. MICOM becomes "Lock" status in initial application of power, and the upper room is indicated as "Freezing Food." "Mid", the middle room as "Cabbage" "Mid", and the lower room as "Cabbage" "Mid".
2. MICOM maintains the previous display status in power failure and re-application of power. But in case of a power-shut or power reconnection during rhythm fermenting, the temperature returns to "Mid" for the applicable food type.
3. Buzzer sound neither ring ever pressing the button in "Lock" status, nor performs function.

3-1-2. Food storage/seasoning function

(1) When selecting food type and storage temperature

1. Press the "Lock/Unlock" button for more than 2 seconds to "Unlock" the refrigerator.
2. When you press the "Upper compartment", "Store" button in this condition, the storage temperature level changes from "Mid" → "Max" → "Min" → "Mid", and the food type changes as follows when the storage temperature level changes from "Min" → "Mid". ("Freeze" → "Refrigerate" → "Kimchi")
3. When you press the "Middle compartment", "Storage" button, the storage temperature level changes from "Mid" → "Max" → "Min" → "Mid", and the food type changes as follows when the storage temperature level changes from "Min" → "Mid". ("Cabbage Kimchi" → "Old Kimchi" → "Light freezing" → "Vegetable/fruit")
4. When you press the "Lower compartment", "Storage" button, the storage temperature level changes from "Mid" → "Max" → "Min" → "Mid", and the food type changes as follows when the storage temperature level changes from "Min" → "Mid". ("Cabbage Kimchi" → "Old Kimchi" → "Broth Kimchi" → "Vegetable/fruit")
5. Press the "Lock/Unlock" button to end the food storage and storage temperature selection. At this time, if no button is selected for 1 minute without the "Lock/Unlock" button pressed, the unit will automatically switch to the Lock condition and end the selection.

(2) When selecting food type and rhythm fermenting (seasoning)

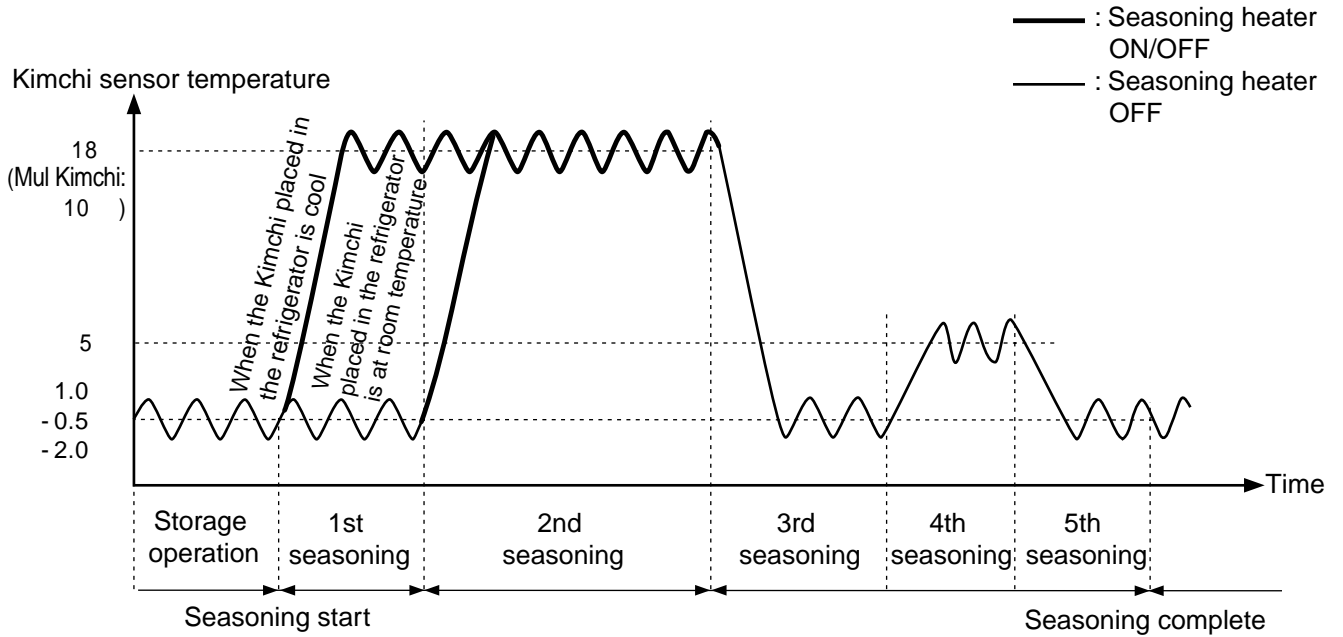
1. Press the "Lock/Unlock" button for more than 2 seconds to "Unlock" the refrigerator.
2. When you press the "Ferment" button at this condition, the rhythm fermenting (seasoning) changes from "Fermented 1 ()" → "Fermented 2 ()" → "More fermented ()" → "Underground fermented ()" → "Less fermented 1 ()" → "Less fermented 2 ()" , and the food type changes from Middle compartment: "Cabbage Kimchi" → "Old Kimchi" → "Cabbage Kimchi", Lower compartment: "Cabbage Kimchi" → "Radish Kimchi" → "Broth Kimchi" → "Cabbage Kimchi" when the Rhythm Ferment (Seasoning) changes to "Less fermented 2" or "Fermented 1". (But, the upper compartment only has the underground fermenting function.)
3. When you press the Ferment button when the food type is "Vegetable/fruit", "Light freezing", it is set to "Cabbage Kimchi – Fermented 1".
4. Press the "Lock/Unlock" button to end the food storage and storage temperature selection. At this time, if no button is selected for 1 minute without the "Lock/Unlock" button pressed, the unit will automatically switch to the Lock condition and end the selection.

(3) When selecting Flavor Keeping

1. Press the "Lock/Unlock" button for more than 2 seconds to "Unlock" the refrigerator.
2. The Flavor Keeping function can only be selected when the food type of "Cabbage Kimchi", "Old Kimchi", "Radish Kimchi" or "Broth Kimchi" is selected.
3. When you press the "Flavor Keeping" button at this condition, the Flavor Keeping function will toggle between selected and canceled. (But if both the middle compartment and the lower compartment has food type that can use Flavor Keeping, operate in the order of Middle compartment Flavor Keeping ON → Lower compartment Flavor Keeping ON → Middle/Lower compartment Flavor Keeping ON → Middle/Lower compartment Flavor Keeping OFF → Middle compartment Flavor Keeping ON.
4. Press the "Lock/Unlock" button to end the Flavor Keeping. At this time, if no button is selected for 1 minute without the "Lock/Unlock" button pressed, the unit will automatically switch to the Lock condition and end the Flavor Keeping.
5. When you select the Flavor Keeping during the fermenting process, the fermenting will immediately end and the Flavor Keeping function will start. AT this time, the storage temperature is automatically set to "Mid".
6. When you select the Flavor Keeping, it controls at lower temperature to keep the current taste of Kimchi longer. (-1 deg for "Min", -0.5deg for "Mid" and 0 deg for "Max".)
7. During the Flavor Keeping operation, the unit runs a cold shock operation every 12 hours.
8. When you select the rhythm fermenting while executing the Flavor Keeping, the Flavor Keeping function will be canceled.

3-1-3. Rhythm fermenting control pattern diagram

1. The fermenting control pattern varies, depending on the temperature of the Kimchi when it is placed into the storage, the type of Kimchi being made and the degree of the seasoning selected.
2. In the 1st seasoning cycle, if the Kimchi is at room temperature, the cold control operates.
3. During the seasoning cycle, if the Kimchi is cold, the seasoning heater is turned on and if the Kimchi is warm, the seasoning heater is turned off.
4. If a failure occurs, such as a sensor error during seasoning, the storage will default to Cabbage Kimchi storage status.
5. The 2nd seasoning is not included in the underground fermenting, in the 3rd seasoning, Perform the Low temperature mature keeping the Temperature is 3°C



3-1-4. TEMPERATURE CONTROL AT UPPER, MIDDLE AND LOWER COMPARTMENT

(1) Temperature control at upper compartment

1. Turn COMP, upper compartment fan motor depending on temperature of the upper compartment sensor and cool them by opening the 3-way valve to the upper compartment.
2. However, cooling of the upper compartment starts after cooling of the Middle/lower compartment is completed while the middle/lower compartment is cooling (Max 25 min).

(2) Temperature control at middle/lower compartment

1. Turn COMP, middle compartment fan motor depending on temperature of the middle/lower compartment sensor and cool them by opening the 3-way valve to the middle/lower compartment, and opening the middle/lower damper.
2. However, cooling of the middle/lower compartment starts after cooling of the upper compartment is completed while the upper compartment is cooling (Max 35 min).

(3) Operation conditions of COMP

1. COMP turns on by the upper compartment sensor and lower compartment sensor.
2. COMP turns off by the upper compartment sensor, middle compartment sensor and lower compartment sensor.

(4) Operation conditions of 3-way valve

1. Open the upper, middle and lower compartment valve by the upper, middle or lower compartment sensor.
2. Perform operation for minimum 25 minutes (for 35 minutes at middle, lower compartment) upon request of "open" (unsatisfactory temperature) at the other side while COMP operates with the valve opened in one side, and then cutoff the valve to other side. In this case, immediately cutoff the valve if temperature is met even if 25 minutes (35 minutes for middle, lower compartment) have not passed.
3. In input of initial power, cool from the upper compartment where the upper compartment is Data Frz. (Deep Frz), Frz. when all upper/middle/lower compartment is not satisfactory, and firstly cool from the middle, lower compartment for the other case.

3-1-5. LCD BACK LIGHT CONTROL (LIMITED TO LCD MODEL)

1. To make the LCD display easy to see, the LCD back light is turned on for 1 minute for the initial power connection or for 20 seconds for the final button operation.
2. When you press any display button when the back light is turned off, the button command will not be executed nor the buzzer sound generated. Only the back light will be turned on. But only the "Lock/Unlock" button will operate normally. (When you press the button when the LCD back light is turned off, only the command to turn on the back light will be executed.)
3. When you press the "Storage" button of the upper compartment and the "Storage" button of the lower compartment simultaneously for more than 1 second, the back light will be turned on and all the graphics on the LCD will be turned on. When you release the buttons, the LCD graphics will return to the prior condition and the back light turned off. (LCD graphic and back light ON/OFF check)

3-1-6. LOCK FUNCTION (DISPLAY BUTTON LOCK/UNLOCK)

1. The "Lock" LED is turned on in the Lock status in application of refrigerator power.
2. Turn the "Unlock" LED by pressing the Lock/Unlock button for 2 seconds or more to allow operation of the display button.
3. Buzzer sound neither rings ever by pressing any button other than the Lock/Unlock button, nor performs function with the "Lock" LED turned on.
4. The "Lock" LED automatically turns on and becomes lock status unless operating the display button for more than a minute with the "Unlock" LED turned on.

3-1-7. FRONT-C HEATER CONTROL

1. A heater for prevention of dewing is installed on the FRONT-C part between the middle compartment and the lower compartment, and turns on at the time of COMP ON and for 20 minutes after COMP OFF.
2. It turns off in the test mode (turn on after power off for normal operation).

3-1-8. BUZZER RINGING

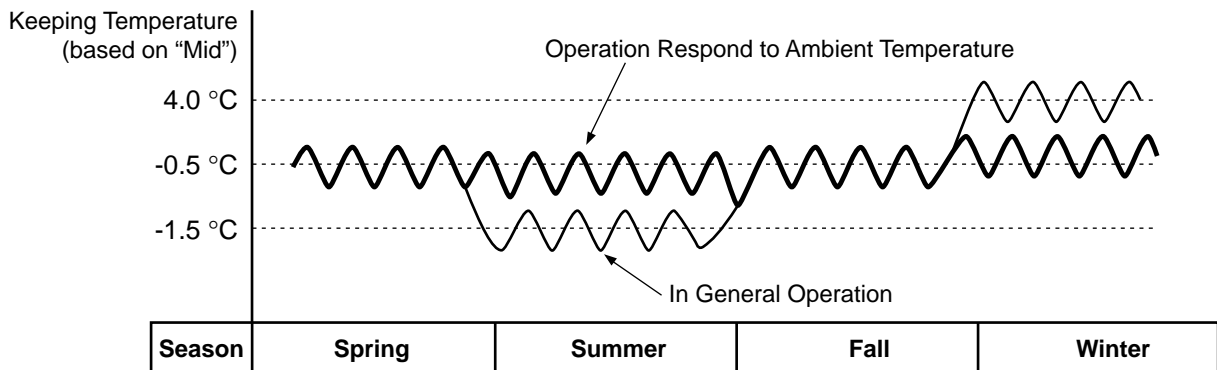
1. "Ding~Dong~" sound rings when pressing the front display button.
2. No buzzer rings if pressing the button not according to the operation order.

3-1-9. POWER FAILURE COMPENSATION FUNCTION

1. Previous operation is performed even applying power again after power failure. However, error status or test mode status is excluded.

3-1-10. OPERATION RESPOND TO AMBIENT TEMPERATURE

1. This is function of maintaining keeping temperature constantly irrespective of season by compensating for the in-refrigerator temperature through ambient temperature of the refrigerator to prevent that the in-refrigerator temperature changes according to ambient temperature (weak cold in winter, excess cold in summer).



3-1-11. DEFROSTING (REMOVAL OF FROST)

1. Defrosting is simultaneously performed by using the defrosting heater at the upper compartment and the middle compartment whenever sum of compressor operation time reaches to 6 hours.
2. Defrosting is started if sum of compressor operation time reaches to 4 hours in input of initial power (or in returning from power failure).
3. Complete defrosting function where defrosting sensor temperature of each room reaches to 7°C (16°C for GR-J213) for the upper compartment, 16°C for the middle compartment respectively, after starting defrost work.
However, poor defrost is indicated if not reaching to 7°C (16°C for GR-J213) for the upper compartment, 16°C for the middle compartment respectively 2 hours after starting defrost (See 3-1-11 Failure Diagnosis Function).
4. Poor defrost is indicated if the defrosting sensor is poor, and defrosting of the relevant room is not done.

3-1-12. SEQUENTIAL OPERATION OF ELECTRICAL PARTS

Electrical parts such as COMP, defrosting heater at the upper & middle compartment, fan motor at the upper & middle compartment, single motor damper and FRONT-C heater sequentially operate as follows for preventing noise and damage of parts occurred by that various parts operate at the same time in input of initial power on and after test closing (including temporary power failure, either):

Function	Operation Sequence	Remarks
<p>When defrosting sensor temperature at the upper compartment is more than 45°C (In purchasing, movement)</p>	<pre> graph TD PO[POWER ON] -- 0.5 sec --> SMD[SINGLE MOTOR DAMPER ON] SMD -- 0.3 sec --> CO[COMP ON] CO -- 0.3 sec --> FCH[FRONT-C HEATER ON] FCH -- 10 sec --> FFAN[F-FAN ON] FFAN -- 4-5 sec --> SMDOFF[SINGLE MOTOR DAMPER OFF] PO -- 0.5 sec --> 3VON[3-WAY VALVE ON] 3VON -- 5-6 sec --> 3VOFF[3-WAY VALVE OFF] PO -- 0.5 sec --> SMDAMPON[STEPPING MOTOR DAMPER ON] SMDAMPON -- 3-6 sec --> SMDAMPOFF[STEPPING MOTOR DAMPER OFF] SMDOFF --- 3VOFF SMDAMPOFF --- 3VOFF </pre>	
<p>In initial power on</p> <p>When defrosting sensor temperature at the upper compartment is less than 45°C (In power failure, service)</p>	<pre> graph TD PO[POWER ON] -- 0.5 sec --> DHC[DEFROSTING HEATER AT UPPER COMPARTMENT ON] DHC -- 0.3 sec --> DMC[DEFROSTING HEATER AT MIDDLE COMPARTMENT ON] DMC -- 4 sec --> DUC[DEFROSTING HEATER AT UPPER COMPARTMENT OFF] DUC -- 0.3 sec --> DMC[DEFROSTING HEATER AT MIDDLE COMPARTMENT OFF] DMC -- 0.3 sec --> FCH[FRONT-C HEATER ON] PO -- 0.5 sec --> FCHO[FRONT-C HEATER OFF] FCHO -- 4 sec --> SMDON[SINGLE MOTOR DAMPER ON] SMDON -- 4 sec --> CO[COMP ON] CO -- 0.3 sec --> FCH PO -- 0.5 sec --> UCF[UPPER COMPARTMENT FAN ON] UCF -- 10 sec --> SMDOFF[SINGLE MOTOR DAMPER OFF] PO -- 0.5 sec --> 3VON[3-WAY VALVE ON] 3VON -- 5-6 sec --> 3VOFF[3-WAY VALVE OFF] PO -- 0.5 sec --> SMDAMPON[STEPPING MOTOR DAMPER ON] SMDAMPON -- 3-6 sec --> SMDAMPOFF[STEPPING MOTOR DAMPER OFF] SMDOFF --- 3VOFF SMDAMPOFF --- 3VOFF </pre>	<p>No initial operation is done if error occurs during operation.</p>

3-1-13. FAILURE DIAGNOSIS FUNCTION

(1) Failure Mode

1. Failure diagnosis function is intended in order that service is easily done when failure to affect performance of the product during use occurs.
2. Function is neither done, nor buzzer sound rings even when pressing the button in occurrence of failure.
3. The product returns to normal operation if failure is released during display of failure code in occurrence of failure (RESET).
4. LEDs other than failure code turn off in occurrence of failure.

BEST MODEL (GR-J303TG)



BETTER MODEL (GR-J303TS)



"Failure CODE Display"

NO	Item	Failure Display (Food LED) F1 F2 F3 F4 F5	Failures	Remarks
1	Failure of upper compartment (K1) sensor	F5	Upper compartment sensor is disconnected or shorted	* Check wiring of respective relevant sensor.
2	Failure of middle compartment (K2) sensor	F5	Middle compartment sensor is disconnected or shorted	
3	Failure of lower compartment (K3) sensor	F5	Lower compartment sensor is disconnected or shorted	
4	Failure of upper compartment defrosting sensor	d1	Upper compartment defrosting sensor is disconnected or shorted	
5	Failure of middle compartment defrosting sensor	d2	Middle compartment defrosting sensor is disconnected or shorted	
6	sensor Failure of ambient temperature sensor	Note 1)	Ambient temperature sensor is disconnected or shorted	
7	Failure of single motor damper	dP	When ON/OFF of the reed-S/W is not detected even when driving the single motor damper for 2 minutes	Damper motor damaged, frozen, coil damaged, driving IC(photo coupler) failure
8	Poor defrosting at upper compartment	H1	When defrosting sensor at the upper compartment does not reach to more than 7°C even when two hours have passed after starting defrost	Short of temperature fuse, short of heater, clogging of drain, poor heater driving relay
9	Poor defrosting at middle compartment	H2	When defrost sensor at the middle compartment does not reach to more than 16°C even when two hours have passed after starting defrost	Short of temperature fuse, short of heater, clogging of drain, poor heater driving relay
10	Poor communication	CO	When no communication is consecutively done for 30 seconds	Taking out of connector, Poor TR on communication part

Note 1) All LEDs except for failure display LED (F1, F2, F3, F4, F5) turn on if simultaneously pressing both upper "Store" button and middle "Store" button for a second where poor ambient temperature sensor exists.

(2) Load Operation in Failure

NO	ITEM	Classification								
		COMP	UPPER COMPARTMENT FAN	MIDDLE COMPARTMENT FAN	DEFROSTING HEATER OF UPPER COMPARTMENT	DEFROSTING HEATER OF MIDDLE COMPARTMENT	STEPPING MOTOR DAMPER	SINGLE MOTOR DAMPER	3-WAY VALVE	FRONT-C HEATER
1	Normal	○	○	○	○	○	○	○		
2	Failure of Upper compartment (K1) sensor	15 min ON/ 15 min OFF	○	○	○	○	○	○		
3	Failure of Middle compartment (K1) sensor	○	○	○	○	○	15 min OPEN/ 15 min CLOSE	○		
4	Failure of Upper compartment (K1) sensor	○	○	○	○	○	○	10 min OPEN/ 15 min CLOSE		
5	Failure of Upper compartment defrosting sensor	○	○	○	Don't defrost (immediately return)	○	○	○		○ (Linked with COMP. However, FRONT-C heater turns off for 15 minutes and turn on again if the heater turn on time continues for more than 40 minutes)
6	Failure of Middle compartment defrosting sensor	○	○	○	○	Don't defrost (immediately return)	○	○	○	
7	Failure of ambient Temperature sensor	○	○	○	○	○	(No compensation of ambient temperature)	(No compensation of ambient temperature)		
8	Poor defrosting at upper compartment	○	○	○	○	○	○	○		
9	Poor defrosting at middle compartment	○	○	○	○	○	○	○		
10	Failure of single motor damper	○	○	○	○	○	○	○	Perform normal initialization by checking operation in the cycle of 1 hour	
11	Poor communication	○	○	○	○	○	○	○		

3-1-14. TEST FUNCTION

1. Test function is intended to check function of PCB and the product and find a failure part with failure status.
2. The test S/W exists on the main PCB, and ends the test mode after 2 hours irrespective of the test mode, and then returns to normal status.
3. Function button is neither detected, nor button recognition sound comes out during the test mode.
4. Ensure to take the power cords out in completion of the test mode so that normal status will be arrived.
5. Release the test mode and display the failure mode if failure such as sensor failure during the test mode.
6. No test mode is performed even when pressing the test button during display of failure code.

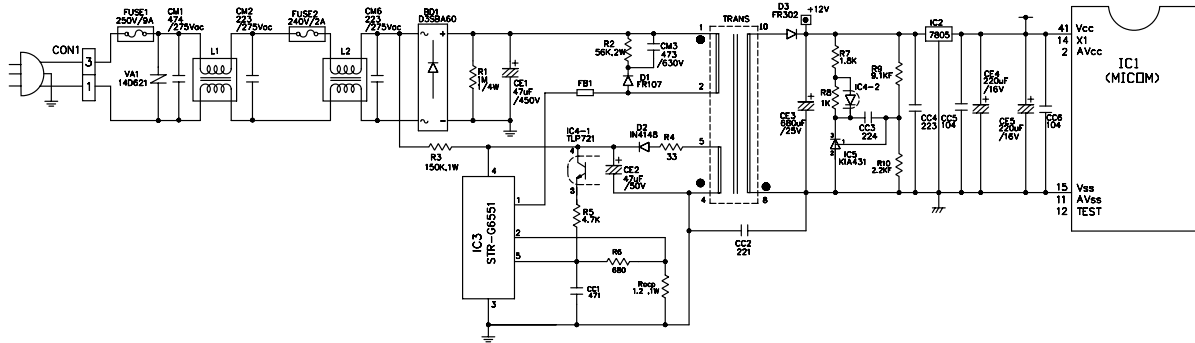
MODE	OPERATION	DETAILS	REMARKS
TEST1	Press the test S/W once	<ol style="list-style-type: none"> 1. COMP (* Fan motor at machine room) ON 2. Defrost heater OFF at upper, middle compartment. 3. FRONT-C heater OFF 4. Fan motor at upper/middle compartment, damper at middle/lower compartment and 3-way valve operates to cool the upper/middle&lower compartment in interval of 16/24 minute. 5. For display, the only "Min" LED of the upper room turns on. 	Returns to normal status when maximum 2 hours have passed.
TEST2	Press the test SW once in the test mode 1	<ol style="list-style-type: none"> 1. COMP (* Fan motor at machine room) OFF 2. Fan motor OFF at upper, middle compartment 3. Defrost heater ON at upper, middle compartment 4. FRONT-C heater ON 5. All dampers at middle, lower compartment are closed. 6. 3-way valve maintains previous status. 7. For display, the only "MIN" LED of the upper room turns on. 	Defrost sensor at the upper compartment performs initialization at more than 7 °C, and middle defrost sensor at more than 16 °C (COMP delay for 7 minutes)
Normal status	Press the test S/W 3 times in the test mode 2	Returns to initial status	COMP operates after delay for 7 minutes

- LED check function
All LEDs turn on if pressing both upper "Store" button and middle "Store" button at the same time for 1 second or more, and display the previous status if releasing the button.
- FRONT-C Heater touching inspection mode
The FRONT-C heater consecutively turns on for 5 minutes and is then released if pressing both upper "Store" button and lower "Ferment" button for 5 seconds or more. It is released if pressing them again for 5 seconds or more.
 - Release check: LED on the remainder time display part of the lower compartment turns on with pressing for 5 seconds or more.
 - Input check: LED on the flavor keeping part turns on with pressing for 5 seconds or more.

3-2. EXPLANATION OF CIRCUITS

3-2-1. POWER CIRCUIT

Power circuits consist of SMPS (Switching Mode Power Supply) power, and the SMPS consists of the rectification part (BD1, CE1) to convert AC voltage to DC voltage, the switching part (IC3) to switch the converted DC voltage, a transformer to transfer energy of the primary side on the switching terminal, secondary side power to supply power to the MICOM and IC and the feed back part (IC4, IC5) to feedback the secondary side voltage to the primary side of transformer in order to maintain it uniformly.



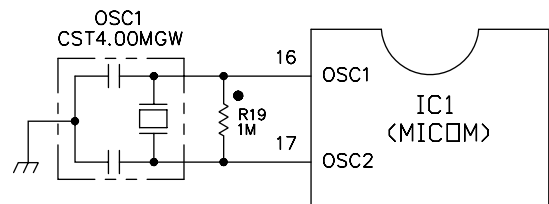
Caution.: Take a measure after more than 3 minutes have passed after removing the power cords in abnormal operation of circuits since high voltage (DC310V) is maintained at the power terminal. Otherwise, it may cause electric shock.

Part	Both ends of VA1	Both ends of CE1	Both ends of CE2	Both ends of CE3	Both ends of CE4
Voltage	220 Vac	310 Vdc	16 Vdc	12.5 Vdc	5 Vdc

Voltage of each part is as follows:

3-2-2. OSCILLATION CIRCUIT

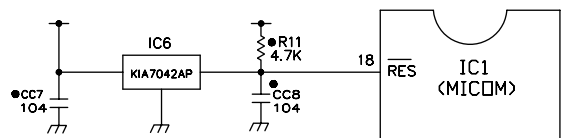
Oscillation circuits are intended to generate clock for synchronization for information transmission/receipt of logic elements inside of the IC1 (MICOM) and generate basic time for time calculation. Rated parts must be used since the OSC1 does not operate or time calculated at the IC1 changes where SPEC changes.



3-2-3. RESET CIRCUIT

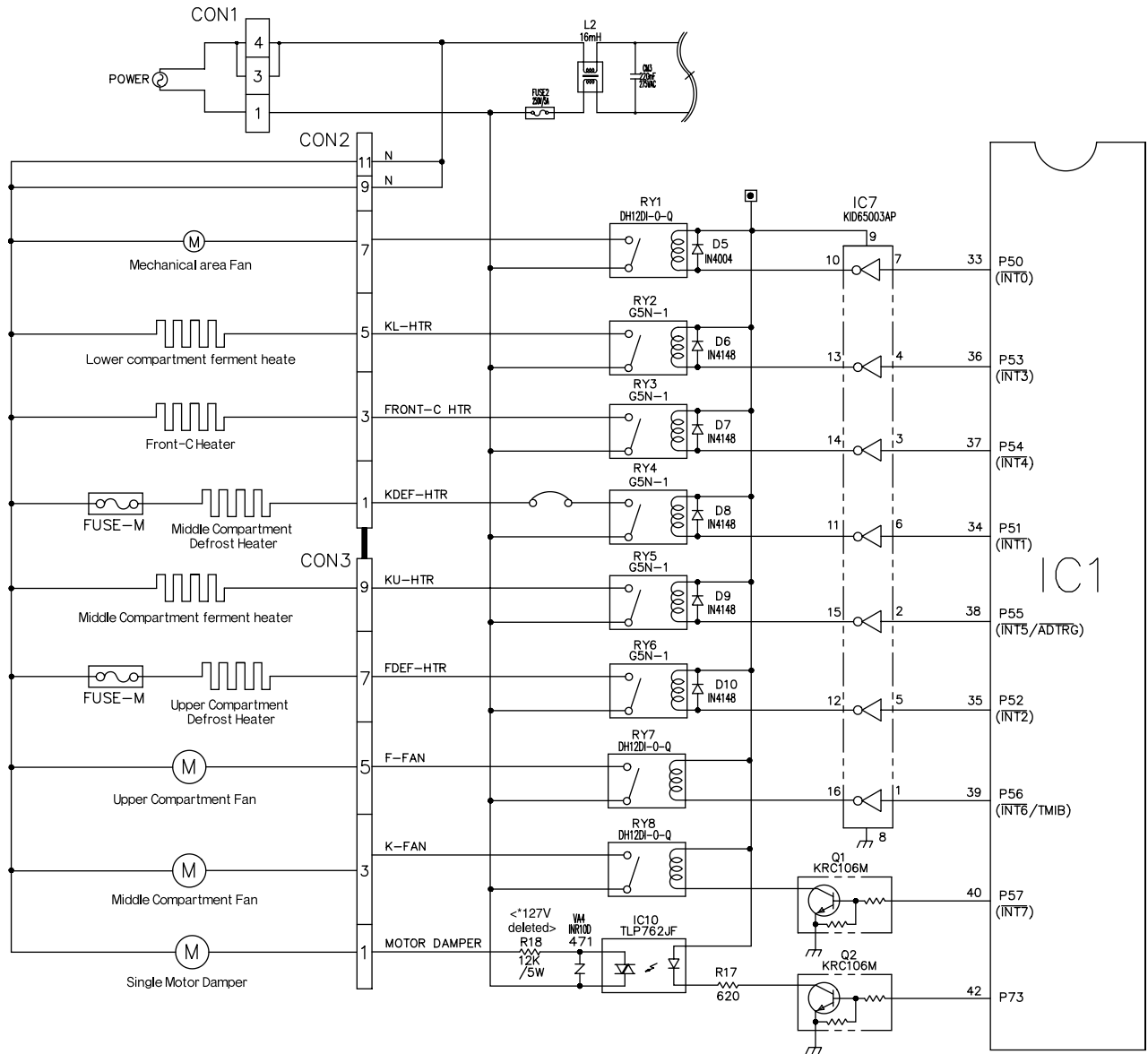
The reset circuits are intended so that the whole of function is started at the initial status by initializing various parts such as ram inside of the MICOM (IC1) when power is applied to MICOM again in input of initial power or by temporary power failure. "LOW" voltage is applied to the reset terminal of MICOM for the fixed time (10ms) at the start of power input.

During general operation, the reset terminal is at 5V (No MICOM operates in case of poor reset IC).



3-2-4. LOAD/BUZZER DRIVE CRICUIT

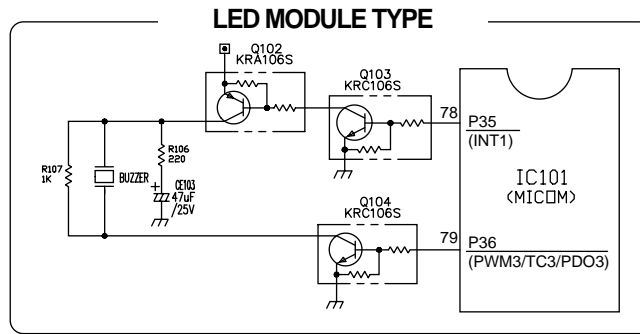
(1) Load Drive Circuit



Type of Load	COMP, Mechanical Area FAN	UPPER FAN MOTOR	UPPER DEFROST HEATER	MIDDLE FAN MOTOR	MIDDLE DEFROST HEATER	MIDDLE FERMENT HEATER	LOWER FERMENT HEATER	SINGLE MOTOR DAMPER	FRONT-C HEATER
Measuring Point(IC7)	No.10	No.16	No.12	Q1 Collector	No.11	No.15	No.13	Q2 Colletor	No.14
Status	ON	Within 1V							
	OFF	11 ~ 13 V							

(2) Buzzer driving circuit (located on display PCB)

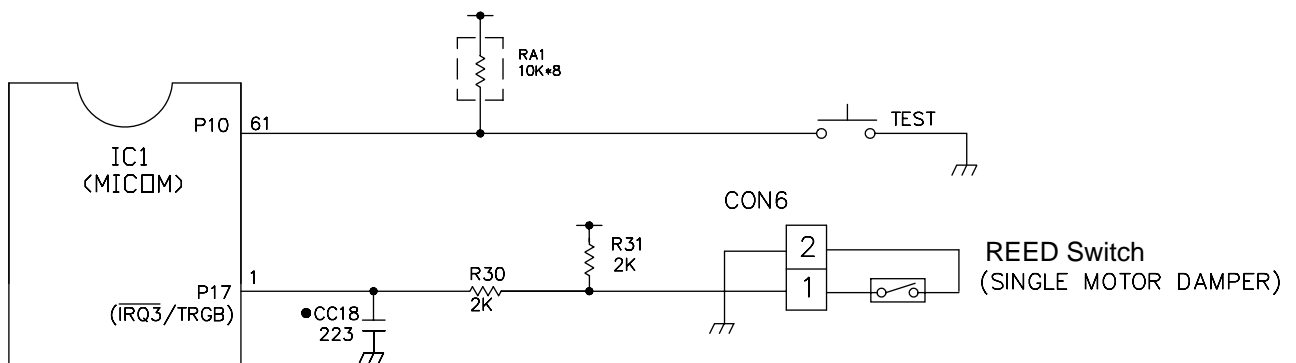
* Only the buzzer sound for the Lock/Unlock operation is shown in this SVC technical manual.



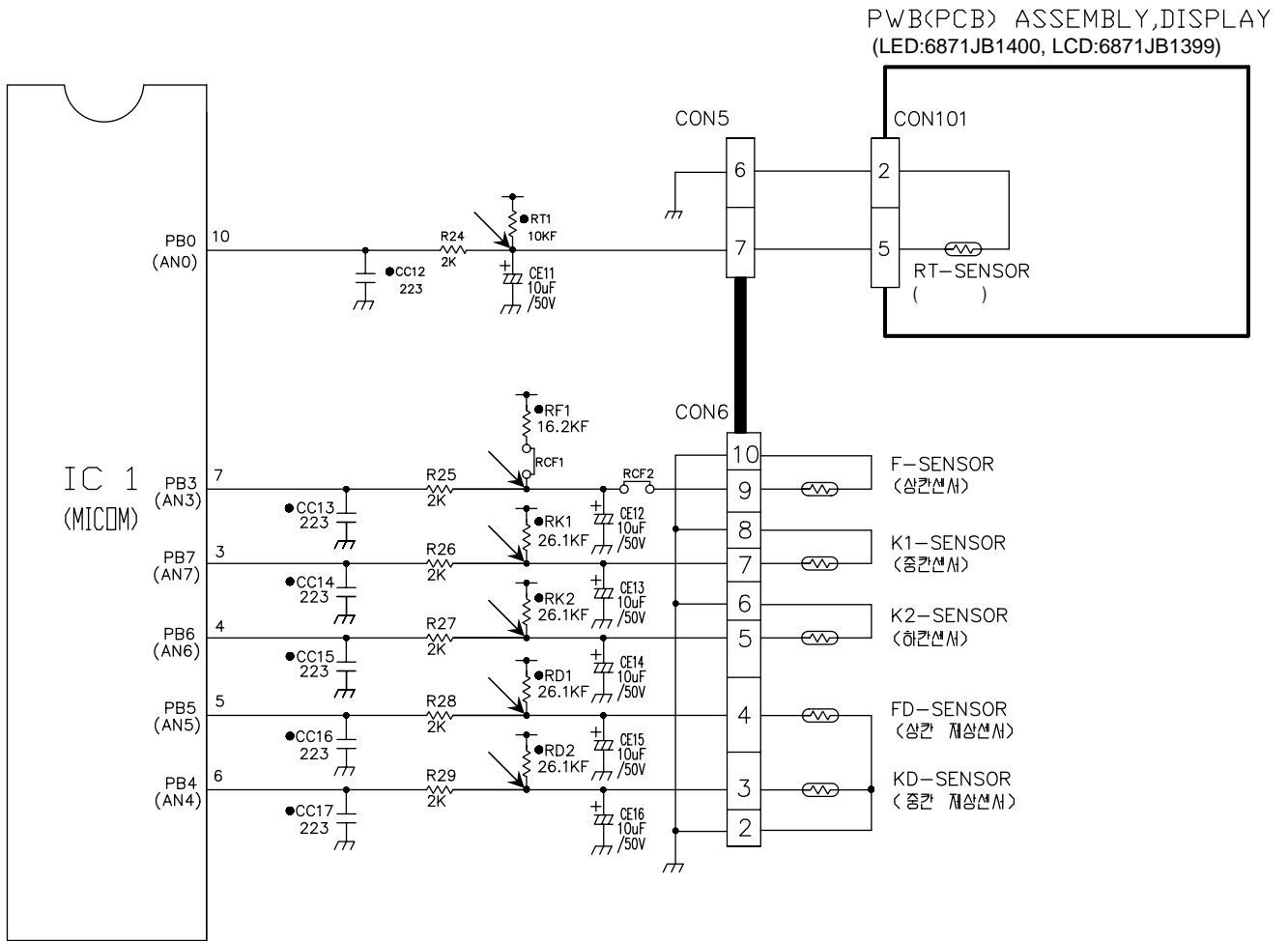
Status	Ex) Lock: "Ding-D-Dong" sound	Ex) Lock: "Ding-D-Dong" sound	Off
Measuring point			
IC101 (Pin 3/61)			5V
IC101 (Pin 2/62)			0V

3-2-5. SWITCH INPUT CIRCUIT

Following circuits are input circuits for detecting signal of the test switch for checking refrigerator or the reed switch of the single motor damper.



3-2-6. TEMPERATURE SENSING CIRCUIT

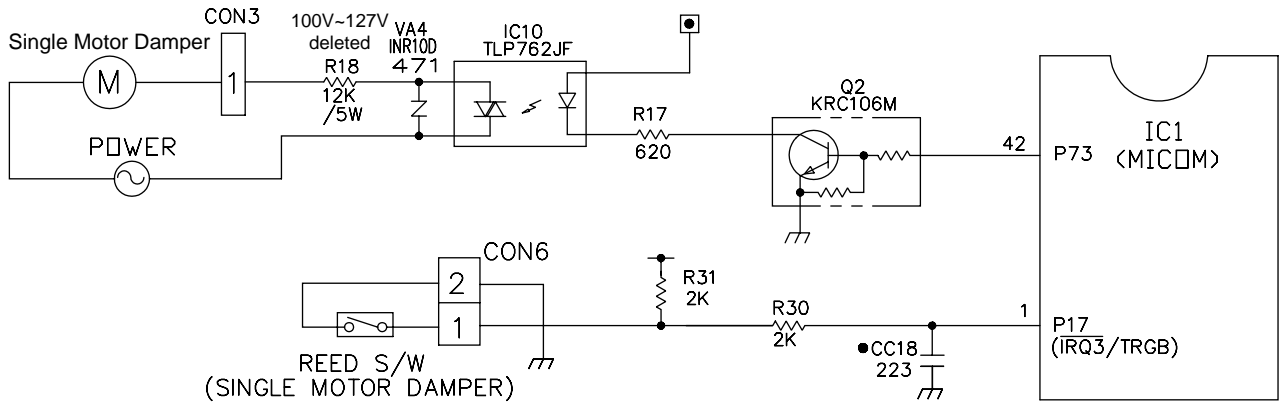


Above circuits consist of the upper sensor, middle sensor, lower sensor for adjusting setup temperature at the upper, middle and lower compartment, the ambient temperature sensor to detect ambient air temperature, the upper defrost sensor and the middle defrost sensor attached to the evaporator at the upper, middle compartment to detect the defrost return temperature. Status in short or open are as follows:

Sensor	Check points	Normal (-30 °C ~ 50 °C)	In Short	In Open
Ambient temp. Sensor	POINT Voltage	0.5V ~ 4.5V	0V	5V
Upper Sensor	POINT Voltage			
Middle Sensor	POINT Voltage			
Lower Sensor	POINT Voltage			
Upper Defrost Sensor	POINT Voltage			
Middle Defrost Sensor	POINT Voltage			

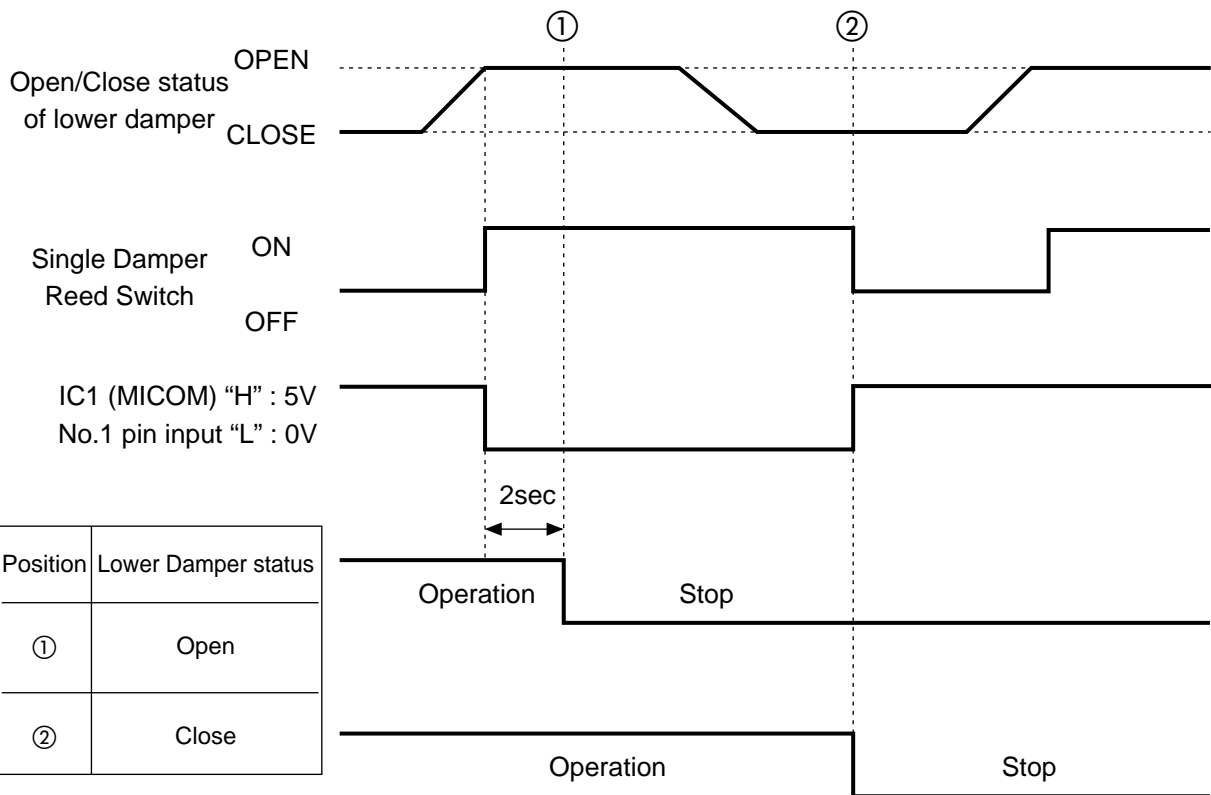
3-2-7. TEMPERATURE SENSING CIRCUIT

1. Temperature adjustment at the lower compartment consists of the circuit part for driving the damper, as electronic single motor damper, to open or close the baffle and the reed switch part to detect open/close status of the damper.
2. Drives the motor, and if there is no status change of the reed switch within 2 minutes, determines it as failure and displays as failure (See 3-1-11. Failure Diagnosis Function).
3. Rotates once for 15 seconds irrespective of temperature to detect damper status in input of initial power (initial drive inspection).



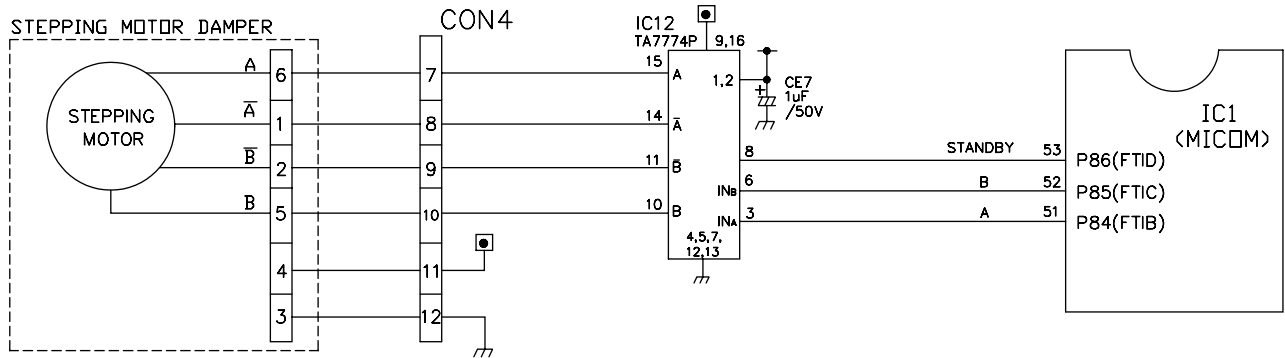
4. Open/Close of the damper, status of the reed switch and No.1 pin input of the IC1 (MICOM) are as follows:

<SINGLE MOTOR DAMPER>



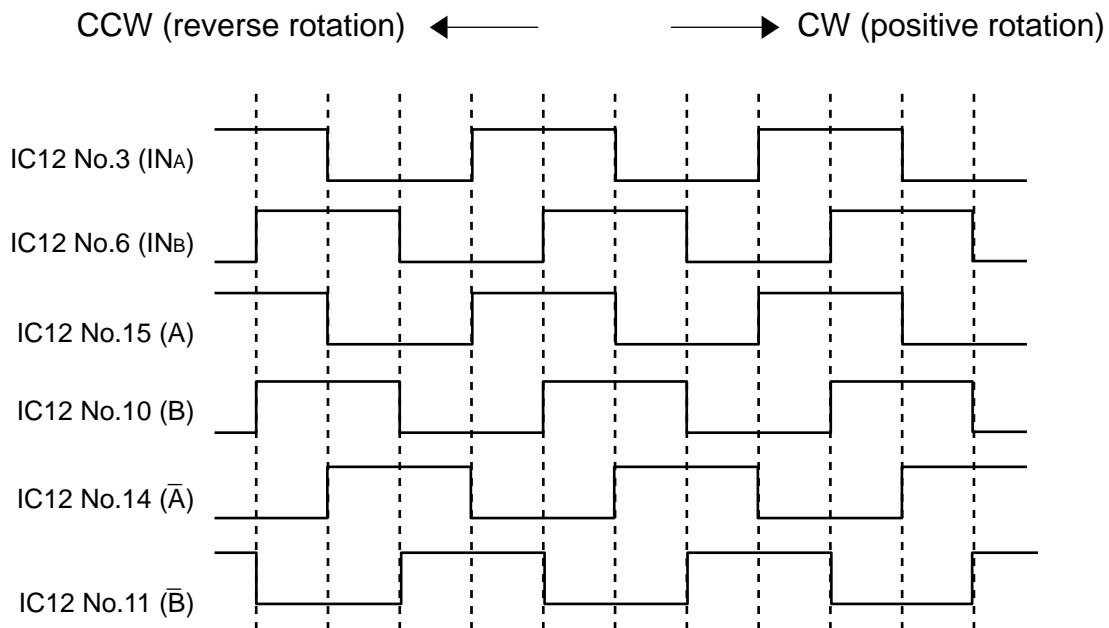
- The above time is time until the single motor stops after status change of the reed switch.

3-2-8. STEPPING MOTOR DAMPER DRIVE CIRCUIT (FOR TEMPERATURE CONTROL AT MIDDLE COMPARTMENT)

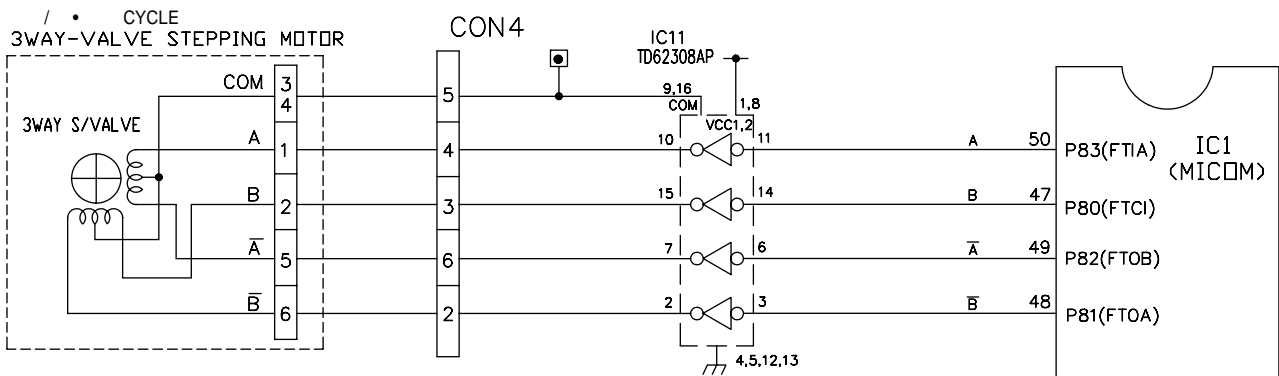


As for motor drive, the motor rotates since rotation magnetic force is formed at coils wound around each phase of the motor and the stator if outputting “High” “Low” signal as much as the fixed step numbers through the MICOM pin 51 and pin 52 after applying “High” signal to the IC 12 (TA7774P) from the MICOM pin 53.

Explanation) For driving method of the motor, send signal in the cycle of 3.33ms by using the terminal of the MICOM PIN53, 52 and 51 as shown in waveform of each part below. This signal is output to the output terminal No.10, 11, 14, 15 via the input terminal No.3, 6, 8 of the IC12 (TA7774P) as IC for motor drive. The motor rotates by which motor coils wound around each phase of the stator forms rotation magnetic field. The stepping motor damper rotates by which motor coils wound around each phase of the stator forms rotation magnetic field if inputting as figure to the input part (No.3 INA, No.6 INB) of the IC12 (TA7774P) for motor drive.



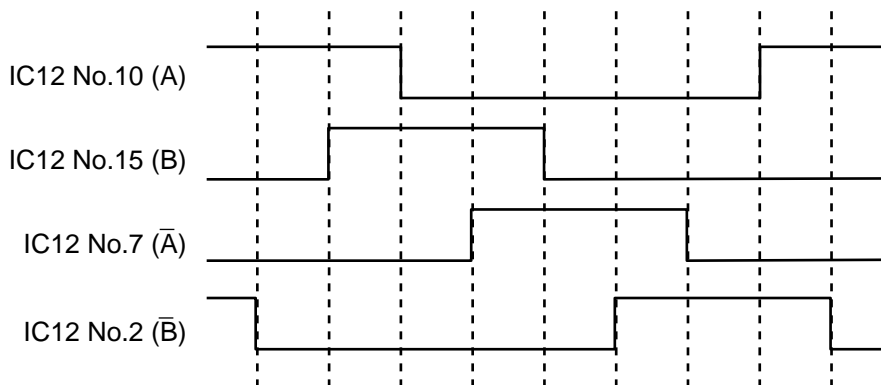
3-2-9. 3-WAY VALVE STEPPING MOTOR DRIVE CIRCUIT (FOR SWITCHING UPPER/MIDDLE/LOWER COMPARTMENT CYCLE)



As for motor drive, the motor rotates since rotation magnetic force is formed at coils wound around each phase of the motor and the stator via the IC11 (TD62308AP) as IC for motor drive if outputting "High" "Low" signal as much as the fixed step numbers from the MICOM pin 50, 47 and 48.

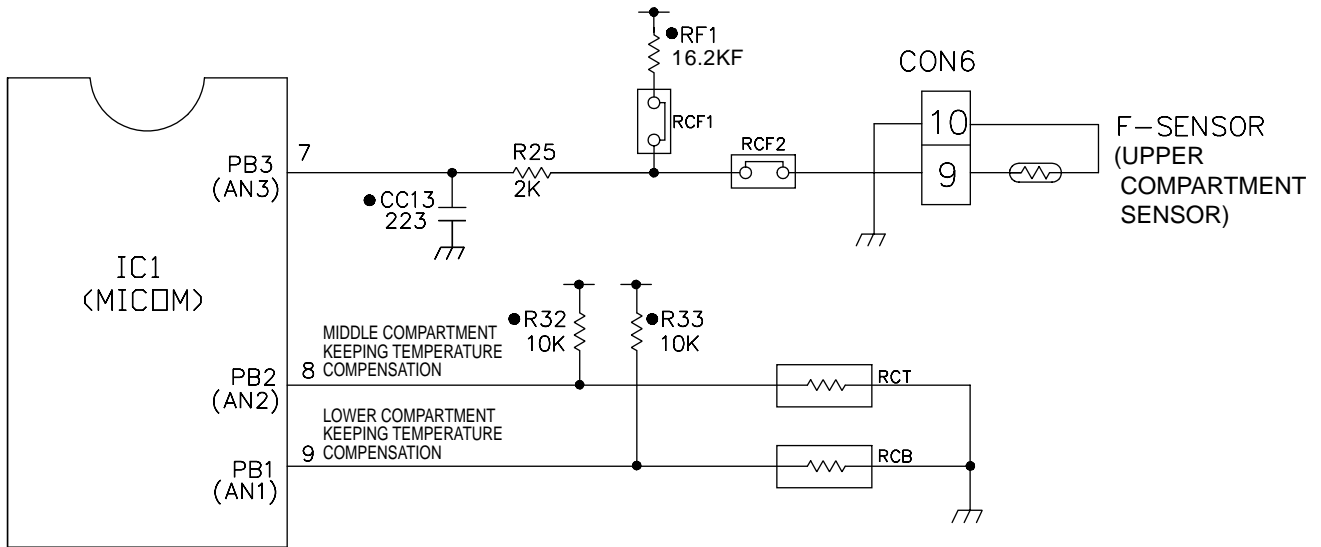
Explanation) For driving method of the motor, send signal in the cycle of 30ms by using the terminal of the MICOM PIN 50, 47, 49 and 48 as shown in waveform of each part below. This signal is output to the output terminal No.10, 15, 7, 2 via the input terminal No.11, 14, 6, 3 of the IC11 (TD62308AP) as IC for motor drive. The motor rotates by which motor coils wound around each phase of the stator forms rotation magnetic field.

CW (positive rotation) ← ————— ————— → CCW (reverse rotation)



3-2-10. KEEPING TEMPERATURE COMPENSATION AND TOO COLD/ TOO WARM CUT COMPENSATION CIRCUIT

(1) Keeping Temperature Compensation Circuit



► This circuit is used for entering the required level of temperature compensation into MICOM to adjust keeping temperature at the upper, middle and lower compartment.

Upper Compartment		Temperature Compensation	Middle/Lower Compartment		Remarks
Resistance Value	Temperature Compensation		Resistance Value	Temperature Compensation	
RCF1	RCF2		RCT(Middle)	RCB(Lower)	
	6.2 KΩ	+2.5 °C	180 KΩ	+2.5 °C	warmer
	5.1 KΩ	+2.0 °C	56 KΩ	+2.0 °C	
	3 KΩ	+1.5 °C	33 KΩ	+1.5 °C	
	2.4 KΩ	+1.0 °C	18 KΩ	+1.0 °C	
	1.2 KΩ	+0.5 °C	12 KΩ	+0.5 °C	
		0 °C	10 KΩ	0 °C	Standard temperature
620 Ω		-0.5 °C	8.2 KΩ	-0.5 °C	 Cooler
1.2 KΩ		-1.0 °C	5.6 KΩ	-1.0 °C	
1.8 KΩ		-1.5 °C	3.3 KΩ	-1.5 °C	
2.4 KΩ		-2.0 °C	2 KΩ	-2.0 °C	
3 KΩ		-2.5 °C	470 Ω	-2.5 °C	

► Temperature compensation table by adjustment of resistance value (difference value against current temperature).

Ex) Temperature at the middle compartment increases by +1°C if changing compensation resistance at the middle compartment (RCT) from 10K (current resistance) to 18K (corrected resistance).

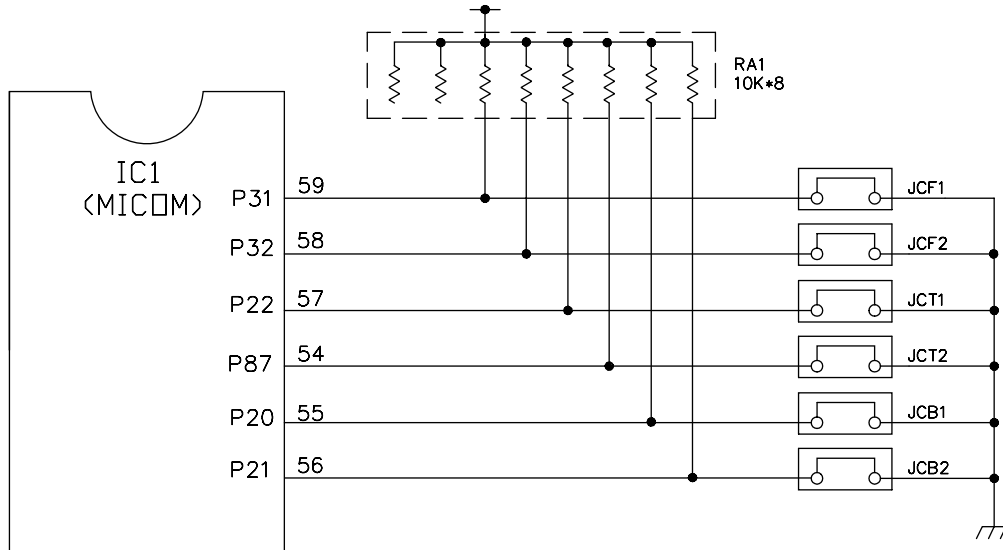
► Temperature compensation table at the upper compartment is as follows:

Division	Modification	RCF1:3 K Ω	RCF1:2.4 K Ω	RCF1:1.8 K Ω	RCF1:1.2 K Ω	RCF1:620 Ω	RCF1: δ δ	RCF1: δ δ	RCF1: δ δ	RCF1: δ δ	RCF1: δ δ	RCF1: δ δ
	Current	RCF2: δ δ	RCF2: δ δ	RCF2: δ δ	RCF2: δ δ	RCF2: δ δ	RCF2: δ δ	RCF2:1.2 K Ω	RCF2:2.4 K Ω	RCF2:3 K Ω	RCF2:5.1 K Ω	RCF2:6.2 K Ω
Upper Compartment (RCF1, RCF2)	RCF1:3 K Ω RCF2: δ δ	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up	4 °C up	4.5 °C up	5 °C up
	RCF1:2.4 K Ω RCF2: δ δ	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up	4 °C up	4.5 °C up
	RCF1:1.8 K Ω RCF2: δ δ	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up	4 °C up
	RCF1:1.2 K Ω RCF2: δ δ	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up
	RCF1:620 Ω RCF2: δ δ	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up
	RCF1: δ δ RCF2: δ δ	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up
	RCF1: δ δ RCF2:1.2 K Ω	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up
	RCF1: δ δ RCF2:2.4 K Ω	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up
	RCF1: δ δ RCF2:3 K Ω	4 °C down	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up
	RCF1: δ δ RCF2:5.1 K Ω	4.5 °C down	4 °C down	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up
RCF1: δ δ RCF2:6.2 K Ω	5 °C down	4.5 °C down	4 °C down	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	

► Temperature compensation table at the middle/ lower compartment is as follows:

Division	Modification	470 Ω	2 K Ω	3.3 K Ω	5.6 K Ω	8.2 K Ω	10 K Ω	12 K Ω	18 K Ω	33 K Ω	56 K Ω	180 K Ω
	Current											
Middle Compartment (RCT)	470 Ω	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up	4 °C up	4.5 °C up	5 °C up
	2 K Ω	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up	4 °C up	4.5 °C up
	3.3 K Ω	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up	4 °C up
	5.6 K Ω	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up	3.5 °C up
	8.2 K Ω	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up	3 °C up
-----	10 K Ω	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up	2.5 °C up
Lower Compartment (RCB)	12 K Ω	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up	2 °C up
	18 K Ω	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up	1.5 °C up
	33 K Ω	4 °C down	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up	1 °C up
	56 K Ω	4.5 °C down	4 °C down	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change	0.5 °C up
	180 K Ω	5 °C down	4.5 °C down	4 °C down	3.5 °C down	3 °C down	2.5 °C down	2 °C down	1.5 °C down	1 °C down	0.5 °C down	No change

(2) Too Cold/Too Warm Cut Compensation Circuit.



Upper compartment cut compensation		Upper compartment temperature compensation value		Middle compartment cut compensation		Middle compartment temperature compensation value	Lower compartment cut compensation		Lower compartment temperature compensation value
Too cold compensation	Too warm compensation	Frozen Food	The others	Too cold compensation	Too warm compensation		Too cold compensation	Too warm compensation	
JCF1	JCF2			JCT1	JCT2		JCB1	JCB2	
CUT		+2 °C	+1 °C	CUT		+1 °C	CUT		+1 °C
	CUT	-2 °C	-1 °C		CUT	-1 °C		CUT	-1 °C
CUT	CUT	0 °C	0 °C	CUT	CUT	0 °C	CUT	CUT	0 °C
		0 °C (When shipping from factory)				0 °C (When shipping from factory)			0 °C (When shipping from factory)

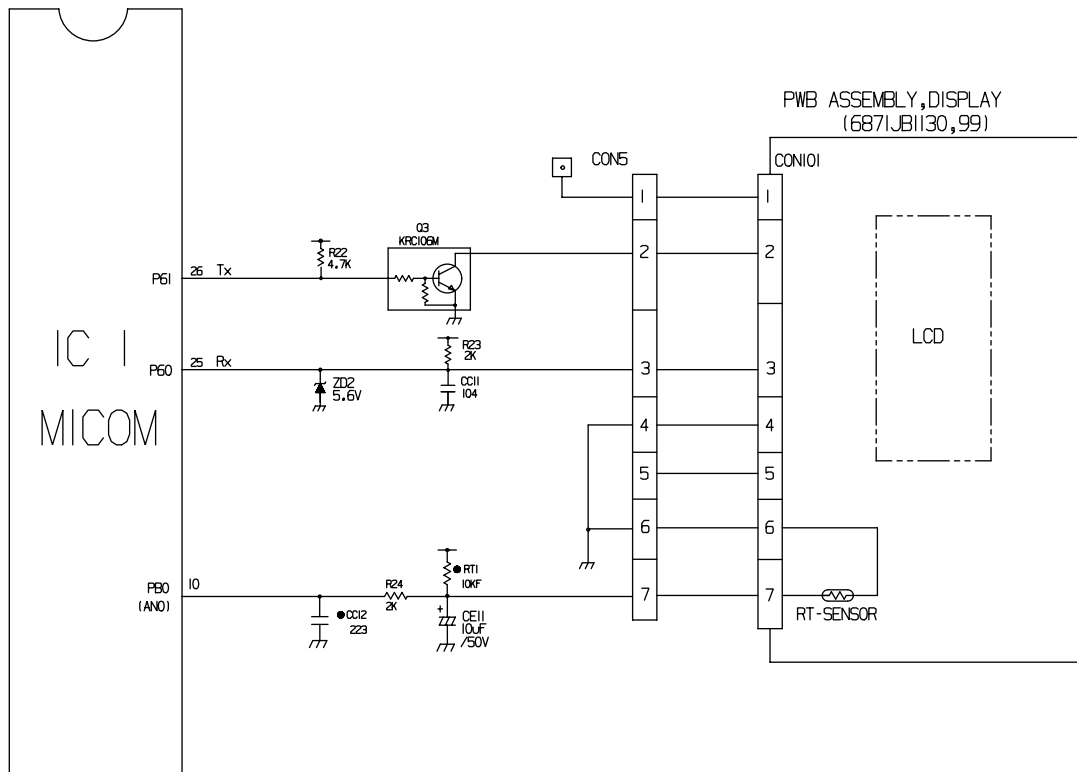
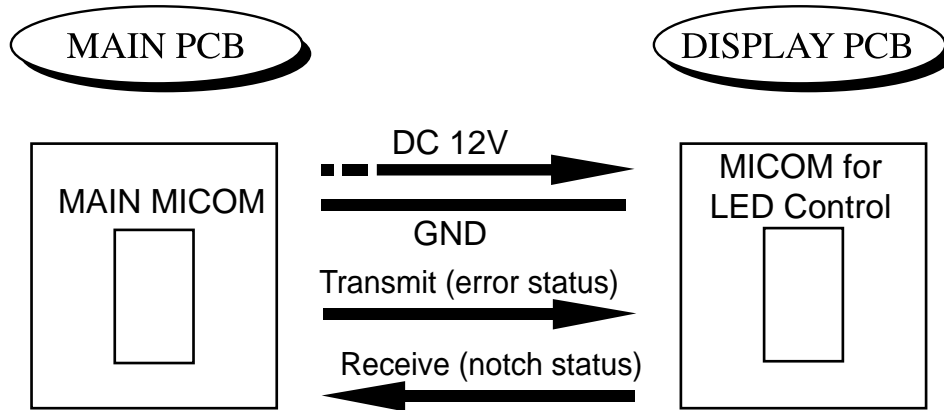
► The cut compensation circuit compensates the keeping temperature of the upper/middle/lower compartment by simply cutting it out of service for a brief period.

3-2-11. COMMUNICATION CIRCUIT BETWEEN MAIN PCB AND DISPLAY PCB

Following circuits as communication circuits are circuits for changing necessary information between the main MICOM of the main PCB and the MICOM for LED control of the display PCB.

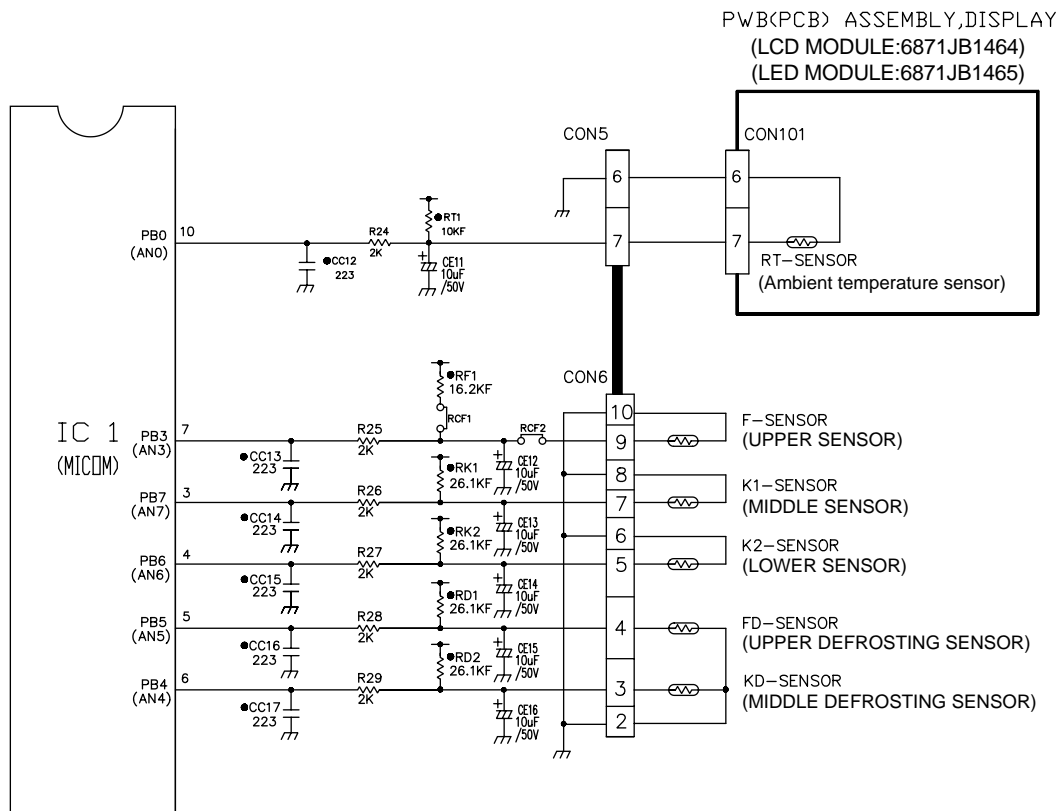
DC12V for driving the display PCB, transmit/receive circuits are required.

Poor communication occurs where continuing information change between the main MICOM of the main PCB and the MICOM for LED control of the display PCB is not done for more than 30 seconds.



3-3. SENSOR RESISTANCE CHARACTERISTICS TABLE

Measuring Temperature(°C)	Upper/Middle/Lower sensors, RT sensor, Upper/Middle defrosting sensors
-20 °C	77 KΩ
-15 °C	60 KΩ
-10 °C	47.3 KΩ
-5 °C	38.4 KΩ
0 °C	30 KΩ
+5 °C	24.1 KΩ
+10 °C	19.5 KΩ
+15 °C	15.9 KΩ
+20 °C	13 KΩ
+25 °C	11 KΩ
+30 °C	8.9 KΩ
+40 °C	6.2 KΩ
+50 °C	4.3 KΩ

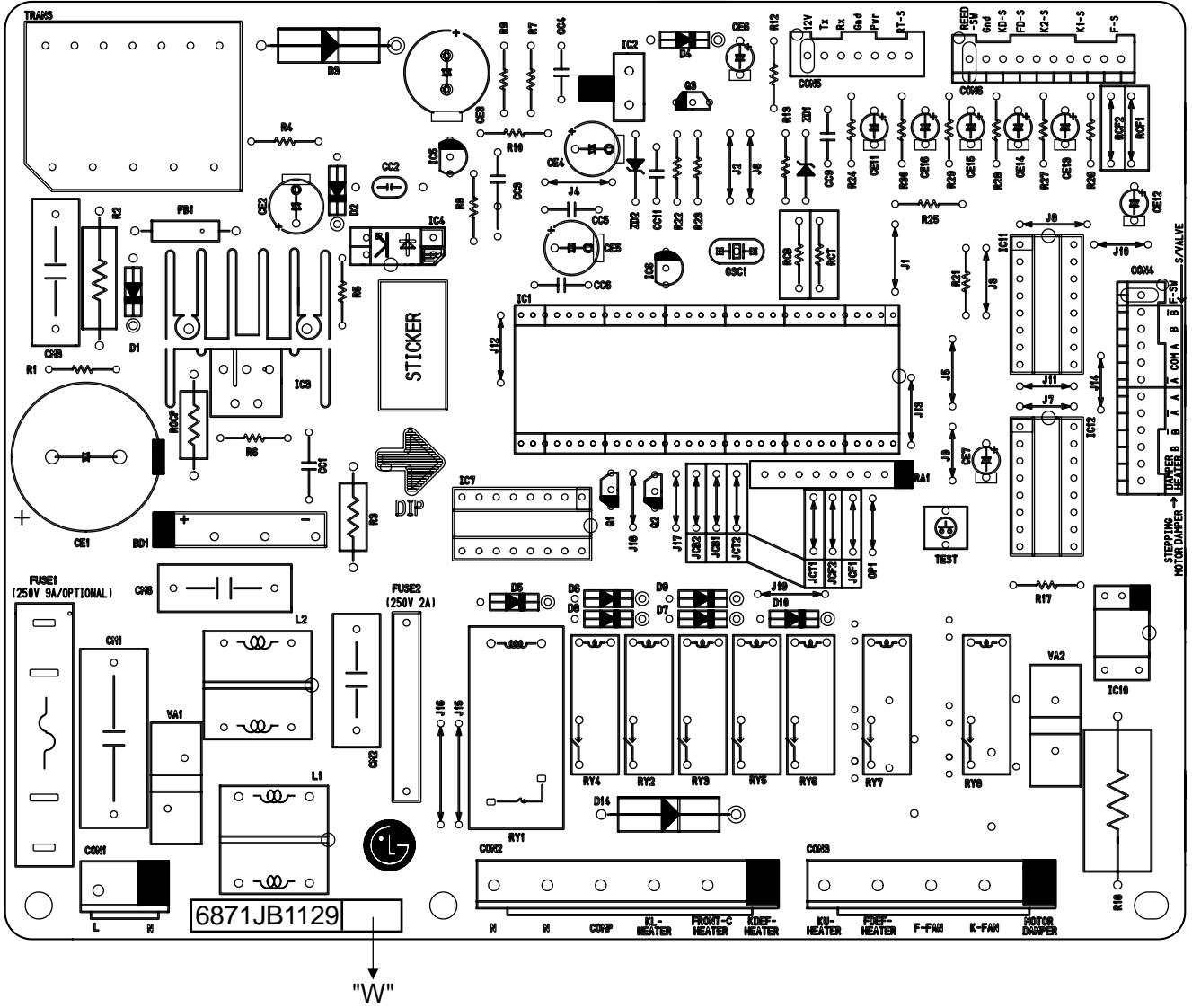


- ▶ Allowance of sensor resistance is 3%.
- ▶ Measure resistance value of sensor after leaving it for more than 3 minutes (delay is required due to sensing speed).
- ▶ Always use a digital tester! Analog testers have too great a margin of error.
- ▶ Measure resistance after separating PWB (PCB) assembly, the CON6 on the main part since the upper compartment sensor and the middle compartment sensor have no connector. Measure resistance at both ends of No.6, 7 of the CON5 for the RT-sensor. However, measure resistance at both ends of the sensor after separating barrier assembly between the middle compartment and the lower compartment for the lower compartment sensor.

3-4. PCB PARTS DIAGRAM AND LIST

3-4-1. PWB(PCB) ASSEMBLY, MAIN(LED MODULE TYPE)

(1) Parts diagram



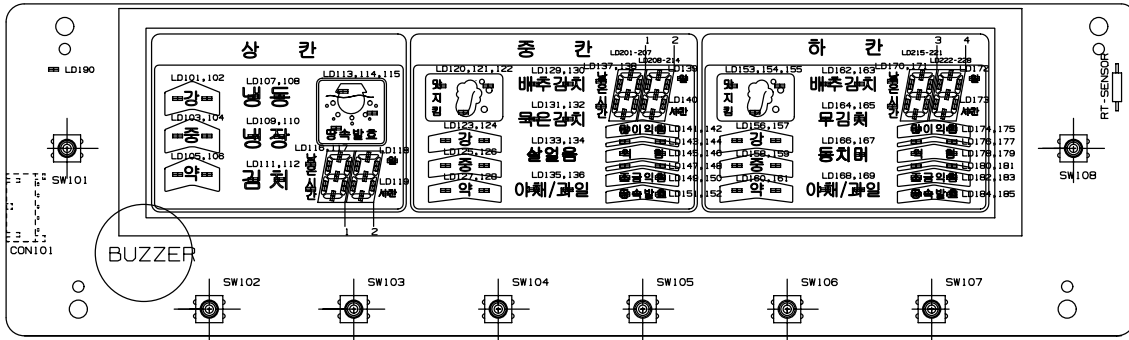
(2) Parts List

Qty	No	P/NO	DESCRIPTION	SPEC	MAKER	REMARK
1	1	6170JB2010A	TRANSFORMER,SMPSICDIL	A3-PJT 12.5V 1A	한영전자	TRANS
1	2	6870JB8020C	PWB(PCB)	GS-PJT MAIN VER3	DOOSAN	FR1,1.6T
1	3	6630JB8001A	CONNECTOR (CIRC),WAFE	JE202-1T-02(3P-2)	JAE EUN	CON1
1	4	6630JB8001E	CONNECTOR (CIRC),WAFE	JE202-1T-06(11P-2,4,6,	JAE EUN	CON2
1	5	6630JB8001D	CONNECTOR (CIRC),WAFE	JE202- 1T-05 JAE EUN 5	JAE EUN	CON3
1	6	6630JB8007L	CONNECTOR (CIRC),WAFE	917790-1 AMP 12PIN 2.5	AMP	CON4
1	7	6630JB8007F	CONNECTOR (CIRC),WAFE	917785-1 AMP 7PIN 2.5M	AMP	CON5
1	8	6630JB8007J	CONNECTOR (CIRC),WAFE	917788-1 AMP 10PIN 2.5	AMP	CON6
1	9	0IKE780500W	IC,KEC	KIA7805PI - - - -	KEC	IC2
1	10	0IKE704200A	IC,KEC	KIA7042P 3P BK RESET	KEC	IC6
1	11	0IKE650030B	IC,KEC	KID65003AP "18P,SDIP"	KEC	IC7
1	12	0IT0623080C	IC,DRAWING	62308 16PIN,SDIP BK DR	TOSHIBA	IC11
1	13	0IT0777400A	IC,TOSHIBA	TA77744P 16,SDIP BK DR	TOSHIBA	IC12
1	14	0IKE431000A	IC,KEC-	IC,KEC	KEC	IC5
1	15	0IPMGNE001A	IC,POWER MANAGEMENT	PS2561-1 NEC4P,DIP BK=TL	NEC	IC4
1	16	0IT0762000A	IC,TOSHIBA	TLP762JF 6P,DIP(LF2) B	TOSHIBA	IC10
1	17	6212AQ9002B	RESONATOR,CERAMIC	CST-4.00MGW,MURATA	MURATA	OSC1
1	18	6102JB8001B	VARISTOR	INR14D621 ILJIN 620V 1	IL JIN	VA1
-	19	6102W5V006A	VARISTOR	SVC271D-14A SAMWHA UL/	IL JIN	VA1
1	20	6102AQ9075E	VARISTOR	INR10D471K	IL JIN	VA2
1	21	6920000001A	RELAY	ALE15B12 MATSUSHITA 250V	MATSUSHITA	RY1
3	22	6920JB2003A	RELAY	G5N-1A OMRON (JAPAN)DC	OMRON	RY3,4,6
1	23	0ISK655100A	IC,SANKEN	STR-G6551 5PIN BK SMPS	SANKEN	IC3
3	24	0TR106009AF	TRANSISTOR	KRC 106M KEC	KEC	Q1,2,3
2	25	6920JB2003B	RELAY	ALD112 MATSUSHITA 250V	NAIS	RY7,8
1	25	0DB360000AA	DIODE,BRIDGE	D3SBA60 BK SHINDENGEN	SHINDENGEN	BD1
1	26	0DRDE00024A	DIODE,RECTIFIERS	FR304 DELTA TP52 D0201A-	DELTA	D3
1	26	0DR107009AA	DIODE,RECTIFIER	FR107 TP DELTA D041 10	DELTA	D1
1	27	0DR154080AA	DIODE,RECTIFIER	1N5408 BK DELTA D0201A	DELTA	D14
1	27	0DD400409AC	DIODE,RECTIFIER	RECT1N4004 TP	DELTA	D5
6	28	0DD414809AD	DIODE	1N4148 PNO NEC TP52 DON	ROHM	D2,6,7,8,9,10
1	28	0DZMR00029A	DIODE,ZENERS	1N5232B MOTORORA TP D0	DELTA	ZD2
-	29	0IPMGSK001A	IC,POWER MANAGEMENT	STR-G6351L SANKEN 5PIN	SANKEN	IC3
1	30	0CE476ZV6E0	CAPACITOR,FIXED ELECT	47UF HE 450V 20% BULK	SAM HWA	CE1
1	31	0CE687YH6E0	CAPACITOR,FIXED ELECT	680UF RX 25V 20% BULK	SAM HWA	CE3
2	32	0CE2276F638	CAPACITOR,FIXED ELECT	220UF SMS,SG 16V 20% F	RUBICON,SAMHWA	CE4,5
-	32	0CE226ZK638	CAPACITOR,FIXED ELECT	22UF YXA 50V 20% FM5 TP	RUBICON,SAMHWA	CE2
1	33	0CE4766K638	CAPACITOR,FIXED ELECT	47UF SMS,SG 50V 20% FM	RUBICON,SAMHWA	CE2
1	34	0CE1056K638	CAPACITOR,FIXED ELECT	1UF SMS,SG 50V 20% FM5	RUBICON,SAMHWA	CE7
6	35	0CE106AK638	CAPACITOR,AL.ELECTROL	10UF KM TYPE 50V M FM5	RUBICON,SAMHWA	CE11~16
1	36	0CQ47418670	CAPACITOR,POLYESTER	0.47UF D 275V M M/PP N	PILKO	CM1
1	35	0CQ22418670	CAPACITOR,FIXED FILM	0.22UF D 275V M M/PP N	PILKO	CM2
1	36	0CQ4732Y430	CAPACITOR,POLYESTER	47000PF S 630V J M/PE	SAM HWA	CM3
1	37	0CQ22418670	CAPACITOR,FIXED FILM	0.22UF D 275V M M/PP N	SAM HWA	CM6
8	38	0CK223DK96A	CAPACITOR,FIXED CERAM	22NF 2012 50V 80%,-20%	MURATA	CC10,CC12~18
1	39	0CK22102510	CAPACITOR,CERAMIC (HI	220P 2KV K B S	TAE YANG	CC2
3	40	0CK1040K949	CAPACITOR,FIXED CERAM	0.1UF D 50V 80%,-20% F	TAE YANG	CC5,6,11
1	41	0CK2230H908	CAPACITOR,CERAMIC (HI	22000PF D 25V 80%,-20%	TAE YANG	CC4
2	42	0CK104DK94A	CAPACITOR,FIXED CERAM	100NF 2012 50V 80%,-20	MURATA	CC7,8
1	43	0CK4710K519	CAPACITOR,CERAMIC (HI	470PF 50V K B TA52	TAE YANG	CC1
1	44	6104JB8001B	RESISTOR,DRAWING	RA 1/4W 9A 10K J	-	RA1
1	45	0CK1040K949	CAPACITOR,FIXED CERAM	0.1UF D 50V 80%,-20% F	SAM HWA	CC3
1	46	0RM1202N661	RESISTOR,FIXED CEMENT	12K OHM 5 W 5.00% A -	C.Y.OHM	R18
-	47	0RS3303J609	RESISTOR,FIXED METAL	330K OHM 1 W 5% TA52	SMART	R3
1	48	0RS5602K641	RESISTOR,FIXED METAL	56K OHM 2 W 5.00% F20	SMART	R2
1	49	0RS1503J609	RESISTOR,FIXED METAL	150K OHM 1 W 5.00% TA5	SMART	R3
-	50	-	-	-	-	-
1	51	0RS0121J609	RESISTOR,FIXED METAL	1.2 OHM 1 W 5% TA52	SMART	ROCP
1	52	0RN9101G409	RESISTOR,FIXED METAL	9.1K OHM 1/4 W 1.00% T	SMART	R9
1	53	0RN2201G409	RESISTOR,FIXED METAL	2.2K OHM 1/4 W 1.00% T	SMART	R10
1	54	0RD1002G609	RESISTOR,FIXED CARBON	10K OHM 1/4 W 5.00% TA	SMART	RCT
1	55	0RD1002G609	RESISTOR,FIXED CARBON	10K OHM 1/4 W 5.00% TA	SMART	RCB
-	56	0RD1000G609	RESISTOR,FIXED CARBON	100 OHM 1/4 W 5% TA52	SMART	R4
1	57	0RD0332G609	RESISTOR,FIXED CARBON	33 OHM 1/4 W 5.00% TA5	SMART	R4
1	58	0RD6200G609	RESISTOR,FIXED CARBON	620 OHM 1/4 W 5.00% TA	SMART	R17
1	59	0RD6800G609	RESISTOR,FIXED CARBON	680 OHM 1/4 W 5.00% TA	SMART	R6
1	60	0RD1001G609	RESISTOR,FIXED CARBON	1K OHM 1/4 W 5.00% TA5	SMART	R8

1	61	ORD1801G609	RESISTOR,FIXED CARBON	1.8K OHM 1/4 W 5.00% T	SMART	R7
9	62	ORD2001G609	RESISTOR,FIXED CARBON	2K OHM 1/4 W 5.00% TA5	SMART	R21,23~30
2	63	ORD4701G609	RESISTOR,FIXED CARBON	4.7K OHM 1/4 W 5.00% T	SMART	R5,22 (L,비락법은R5삭제)
1	64	ORD1004G609	RESISTOR,FIXED CARBON	1M OHM 1/4 W 5.00% TA5	SMART	R1
-	65	ORD6801G609	RESISTOR,FIXED CARBON	6.8K OHM 1/4 W 5.00% TA52	SMART	R5
-	66	ORD1501G609	RESISTOR,FIXED CARBON	1.5K OHM 1/4 W 5% TA52	SMART	R7
2	67	ORD2001E672	RESISTOR,FIXED CARBON	2K OHM 1/8 W 5% 2012 R	SMART,ROHM	R20,31
1	68	ORD4701E672	RESISTOR,FIXED CARBON	4.7K OHM 1/8 W 5% 2012	SMART,ROHM	R11
2	69	ORD1002E672	RESISTOR,FIXED CARBON	10K OHM 1/8 W 5% 2012	SMART,ROHM	R32,33
1	70	ORD1004E672	RESISTOR,FIXED CARBON	1M OHM 1/8 W 5% 2012 R	SMART,ROHM	R19
1	71	ORD1002E472	RESISTOR,FIXED CARBON	10K OHM 1/8 W 1% 2012	SMART,ROHM	RT1
4	72	ORD2612E472	RESISTOR,FIXED CARBON	26.1K OHM 1/8 W 1% 201	SMART,ROHM	RK1,2,RD1,2
1	73	ORD2612E472	RESISTOR,FIXED CARBON	26.1K OHM 1/8 W 1% 201	SMART,ROHM	RF1
-	74	ORD1501G609	RESISTOR,FIXED CARBON	1.5K OHM 1/4 W 5% TA52	SMART	R8
1	75	6210JB8001A	CORE (CIRC),BEAD	BFS3510A0 SAMWHA 35X10	SAM HWA	FB1
1	76	6600RRT001W	SWITCH,TACT	THVV502GAA POSTECH 12V	POSTEC	TEST
1	77	6200JB8003A	FILTER(CIRC),NOISE	3A 3MH 250V CV430030 A	TNC	L1
1	78	6200JB8007X	FILTER(CIRC),NOISE	UV11-05320 TNC BK 0.5A 32	TNC	L2
1	79	0FM9001B621	FUSE,NON TIME DELAY 1	9000MA 250 V 6.3X31.8	SAMJU	FUSE1
2	80	6901JB8001A	FUSE ASSY,HOLDER	KORE-PJT N/S	SAMJU	FUSE HOLDER
1	81	0FZZJB3001A	FUSE	250V 2A SLOW-BLOW LIT	SAMJU	FUSE2
-	82	6170JB2010B	TRANSFORMER,SMPS(COIL	A3-PJT 12.5V 1A	한영전자	TRANS
10	83	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	10MM	J1~6,8,12,13,20
1	84	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	10MM	RCF1
1	85	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	10MM	RCF2
7	86	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	8MM	J7,9,10,11,14,17,18
6	87	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	8MM	JCF1,2,JCT1,2,JCB1,2
1	88	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	8MM	OP1
2	89	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	15MM	J15,16
-	90	43607015	WIRE,JUMP	GC10 WHITE T0.6 L10 FO	25MM	R18
1	91	4920JB3007A	HEAT SINK	23.3*17*25 DRIVE IC ST	TAE SUNG	STR
2	92	1SBF0302418	SCREW TAP TITE(S),BIN	+ D3.0 L8.0 MSWR3/FZY	-	SRT ASSEM
309	93	49111001	SOLDER,SOLDERING	SOLDER(ROSIN WIRE)RSD	HUISUNG,DAEJIN	-
259	94	49111004	SOLDER,SOLDERING	H63A	-	-
159	95	59333105	FLUX	SG;0.825-0.830 KOREA F	KOKI	-
1	96	0IZZJB2039E	IC,DRAWING	HD6473644P 64P,SIDP BK	HITACHI	IC1
-	97	0IZZJB2039F	IC,DRAWING	HD6473644P 64P,SIDP BK	HITACHI	IC1
-	98	0IZZJB2039G	IC,DRAWING	HD6473644P 64P,SIDP BK	HITACHI	IC1
-	99	0IZZJB2039H	IC,DRAWING	HD6473644P 64P,SIDP BK	HITACHI	IC1

3-4-2. PWB(PCB) ASSEMBLY, DISPLAY [STANDARD]

(1) Parts diagram



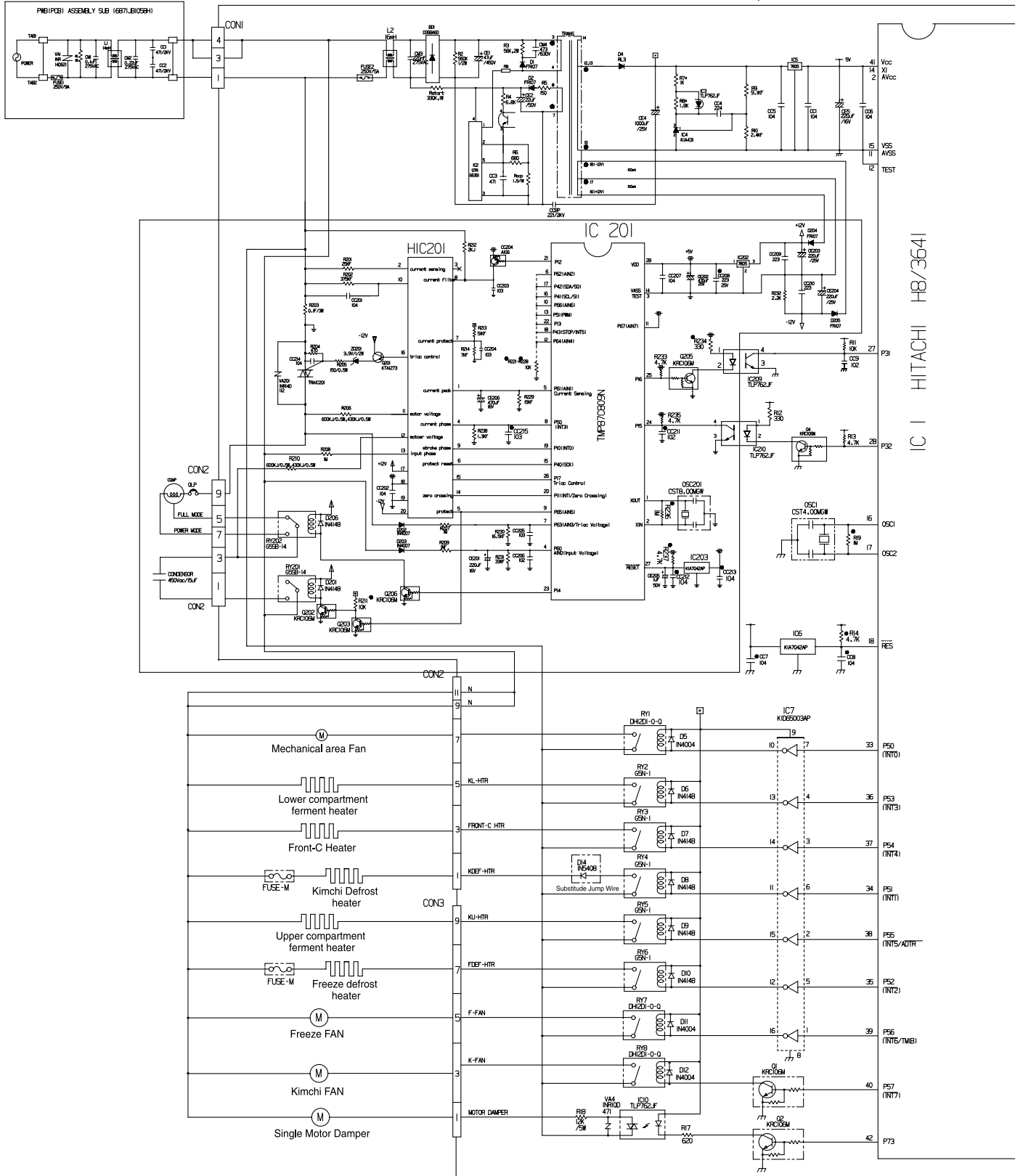
(2) Parts List

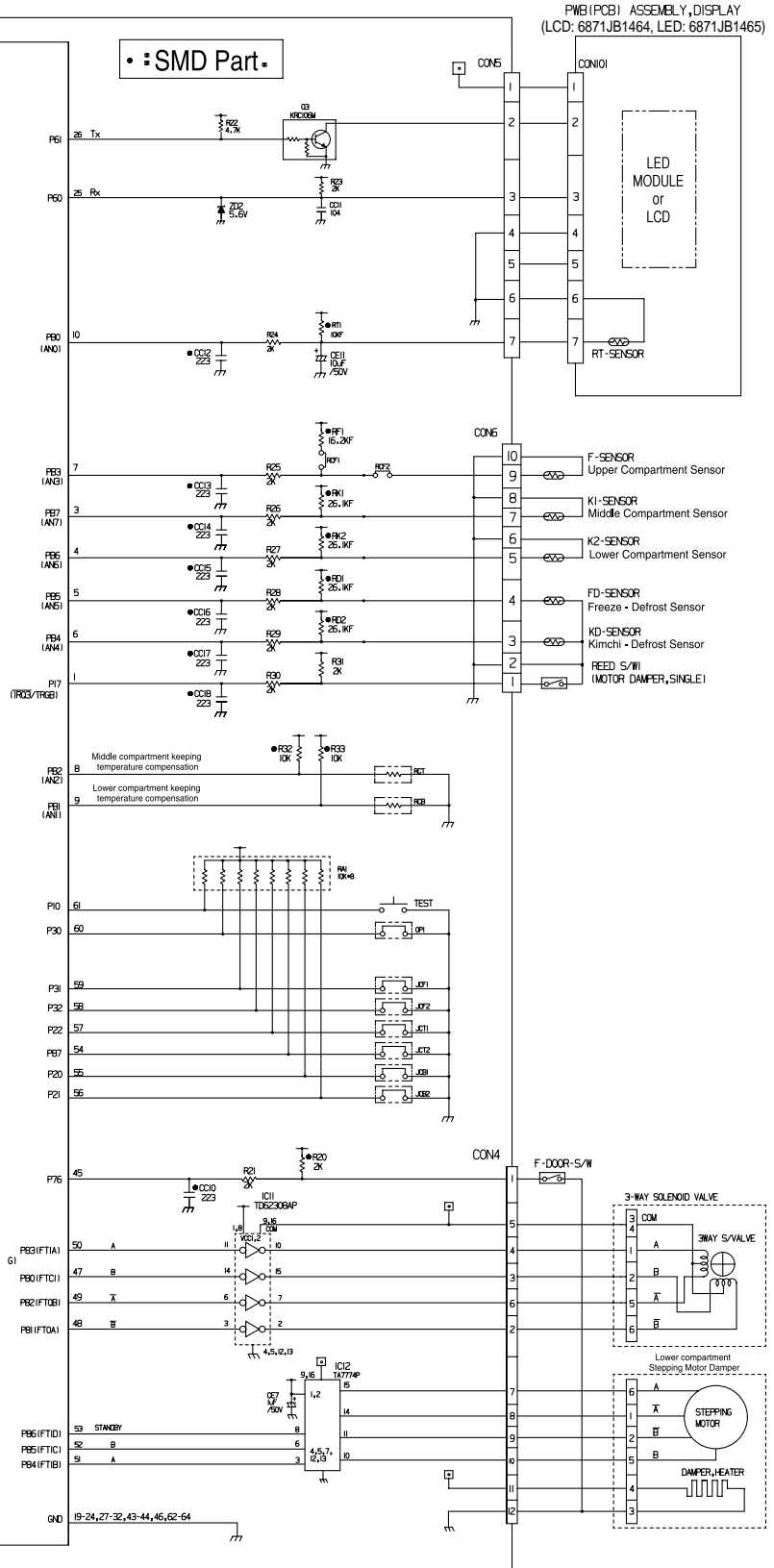
QTY	Part No.	P/N	DESCRIPTION	SPEC	MAKER	REMARK
1	1	EAX3051949/A02	PIB(PCB)	05 TRINITY3-PJT DIOS KIMCHI LCD QUANTUM A.Vic.2.1	SAHMO	FR4
1	2	EAX3051940	PIB(PCB)	06 TRINITY3-PJT DIOS KIMCHI LCD AD SEMICONDUCTOR	SAHMO	FR4
1	3	-----	REFLECTOR	HIPS	ILSAN	Color:WHITE
1	4	EAJ3230401	LCD,Panel-TN	T0064342BATP/HK004653 190X57.5mm LCD MONO	ILSAN	YES OPTO(KONECS) LCD Glass
1	7	6630A09950	CONNECTOR (CIRCUIT),WAFER	SWAK250-051BH1 YEONHO 2.5MM ANGLE TYPE	YEON HO	CON101
1	9	01STL00120A	IC,STANDARD LOGIC	01080-1548S QUANTUM 32P, SSSP TRAY TOUCH SENSOR IC	QUANTUM	IC20
8	10	EBD3252340	IC,SENSOR	TSO1 5 SMD BK	AD SEMICONDUCTOR	IC1-1 IC8-1
8	11	MAK30070501	BAR	CASTING STEEL S15 304 SILVER T3.0 LIS Bp1	AD	SW101-108
8	12	ADK30067803	Gasket Assembly	L218-299 none / 5.5x4.5(1T5)	AD	SW101-108(1T5)
8	13	MEG31736301	Holder,Bulbion	MOLD PP-PP SP2/WHITE 12.0 TRINITY3-PJT	ILSAN	SW101-108
1	17	01Z742075M	IC,DRAWING	MPR8027F6 BOP QFP TRAY QTP TRINITY3-PJT	TOSHIBA	IC101
2	18	0E107AF60C	CAPACITOR,FIXED ELECTR	100UF MV 16V 20% R/TP(SMD) SMD	SAMWHA RUBYCO	CE102
2	19	0E476VF60C	CAPACITOR,FIXED ELECTR	47UF MV 25V 20% R/TP(SMD) SMD	SAMWHA RUBYCO	CE101,103
1	20	0C105WJ60C	CAPACITOR,FIXED ELECTROLYTIC	10UF MV 50V 20% R/TP(SMD) SMD	SAMWHA RUBYCO	CE20
1	21	01E33305A	RESISTOR,CERAMIC	OSTORADQ53-R0 MURATA 4.0M Ω 1/4 0.5% 1/8 SMD	MURATA	IC5101
2	22	01M642628A	IC,STANDARD LOGIC	K1A781F4 KEC 5PIN SOP R/TP SW 50MA REGULATOR	KEC	IC102,105
1	23	01STLKE003A	IC,STANDARD LOGIC	K1A7042F KEC 50T-88 TP RESET IC	KEC	IC103
1	24	01RFB34600D	IC,ROM	BR93C46BF-W EPIN SOP BK EEPROM -	ROHM	IC104
1	25	01S5948600	IC,SS-THOMSON	ME3246-WMGT EPIN TP AUTO RESTART SMD	ST	
1	26	0C110K3566	CAPACITOR,FIXED CERAMIC(HIGH)	080503K500CT 10F 10% 50V X7R -55TO+125C 2012 TP	MURATA	CC302 A,CC301,308
1	27	0C1472466A	CAPACITOR,FIXED CERAMIC(HIGH)	C20127R2472KT 4700p 10% 250V X7R -55TO+125C 2012 TP	MURATA	CC307,304,305,306
1	28	0C112K3566	CAPACITOR,FIXED CERAMIC(HIGH)	C20127R1123KT 12000p 10% 50V X7R -55TO+125C 2012 TP	MURATA	
2	29	0C115K3566	CAPACITOR,FIXED CERAMIC(HIGH)	080503K500CT 15000p 10% 50V X7R -55TO+125C 2012 TP	MURATA	CC300,303
2	30	0C155K3566	CAPACITOR,FIXED CERAMIC(HIGH)	C20127R55472KT 5600p 10% 250V X7R -55TO+125C 2012 TP	MURATA	CC304,305
1	31	0C133K3566	CAPACITOR,FIXED CERAMIC(HIGH)	C20127R1333KT 3300p 10% 50V X7R -55TO+125C 2012 TP	MURATA	CC307
1	32	0C118K3566	CAPACITOR,FIXED CERAMIC(HIGH)	C20127R1183KT 1800p 10% 50V X7R -55TO+125C 2012 TP	MURATA	CC301
1	33	0C132K3566	CAPACITOR,FIXED CERAMIC(HIGH)	C20127R1323KT 3200F 10% 50V X7R -55TO+125C 2012 TP	MURATA	CC302
15	34	0C104K494A	CAPACITOR,FIXED CERAMIC	100NF 2012 50V 80%,-20% R/TP F(Y5V)	MURATA	CC101-III,123,201
14	35	0C104K494A	CAPACITOR,FIXED CERAMIC	100NF 2012 50V 80%,-20% R/TP F(Y5V)	MURATA	CC101-III,123,201,202
10	37	0C103K356A	CAPACITOR,FIXED CERAMIC(HIGH)	0.01UF 2012 50V 80%,-20% X7R R/TP	MURATA	CC114-122,124,125
8	38	0C102K356A	CAPACITOR,FIXED CERAMIC(HIGH)	0.01UF 2012 50V 80%,-20% X7R R/TP	MURATA	CC324-33,124,125
8	39	0C102K494B	CAPACITOR,FIXED CERAMIC(HIGH)	1000PF 2012 50V 80%,-20% R/TP F(Y5V)	MURATA	CC300-307
8	40	0C102K494A	CAPACITOR,FIXED CERAMIC(HIGH)	1UF -20TO+80% 50V Y5V -30TO+85C 2012 TP	MURATA	CC306,315
8	41	EC2H0025911	CAPACITOR,FIXED CERAMIC(HIGH)	12F 5% 5V 005 -55TO+125C 1608 R/TP	MURATA	CC316-323
8	42	ORJ503E472	Resistor,Chip	560K OHM 1/8 W 1% 2012 R/TP	SMART,ROHM	RC301-308
8	43	ORJ002E672	RESISTOR,METAL GLAZED(CHIP)	10K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RC309-335
1	44	ORJ200E672	RESISTOR,FIXED CARBON	220 OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI14
9	45	ORJ001E672	RESISTOR,FIXED CARBON	22K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI14,328-335
10	46	ORJ001E672	RESISTOR,FIXED CARBON	1K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI02,115
4	47	ORJ200E672	RESISTOR,FIXED CARBON	2K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI05,115,320-327
23	48	ORJ470E672	RESISTOR,FIXED CARBON	4.7K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI01,105,112,181
3	49	ORJ502E672	RESISTOR,METAL GLAZED	15K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI05,111,120
2	50	ORJ502E672	RESISTOR,METAL GLAZED	15K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI05,111
3	51	ORH270L622	RESISTOR,FIXED CARBON	2.7K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI08-110
1	52	ORJ01E472	RESISTOR,METAL GLAZED	10K OHM 1/8 W 1% 2012 R/TP	SMART,ROHM	RI03,305,306,309,310,313,315,317,319
1	53	ORJ303E672	Resistor,Chip	33K OHM 5% 1/8W 2012 R/TP	SMART,ROHM	RI71
18	54	ORJ4700E676	RESISTOR,FIXED CARBON	470 OHM 1/4 W 5% 3216 R/TP	ROHM	RI51-159,161-169
1	55	ORH470L622	RESISTOR,FIXED CARBON	910 OHM 1/8 W 5% 2012 5.0% D	SMART,ROHM	RI3,465 A
8	57	ORH470E672	RESISTOR,METAL GLAZED(CHIP)	470 OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI32-139
8	58	ORH270L622	RESISTOR,METAL GLAZED(CHIP)	2.7K OHM 1/8 W 5% 2012 5.0% D	SMART,ROHM	RI30-327
1	59	ORH270E672	RESISTOR,METAL GLAZED(CHIP)	27K OHM 1/8 W 5% 2012 R/TP	SMART,ROHM	RI21
2	60	ORJ200E672	RESISTOR,METAL GLAZED(CHIP)	680 OHM 1/8 W 5% 2012 R/TP	ROHM	RI65,RI66 A,RI336,337
1	61	ORJ100E676	RESISTOR,CHIP	910 OHM 5% 1/4W 3216 R/TP	SMART,ROHM	RI60
1	63	EAP30523601	INDUCTOR,CHIP	DUMISEN 222502	MURATA	DLW1-308
1	64	EAM0500501	FILTER,LINE NOISE	DB865022 2.0H 25 MAX x 23.5 MAX x 15.0MM MAX RIB-11.2-6 RADIAL BK	TNC	EM1 FILTER
1	65	0D7R00188A	DIODE,ZENERS	RL7 ROHM R/TP L18S(LL-341) 500M 5.6V 20MA .JF	DELTA,ROHM	ZD101
2	66	0D7R00188A	DIODE,ZENERS	RL7 ROHM R/TP L18S(LL-341) 500M 5.6V 20MA .JF	DELTA,ROHM	ZD101,102
1	67	01STLKE004A	IC,STANDARD LOGIC	KRA106S KEC 50T-23 TP TRANSISTOR	KEC	DI01
14	68	01STLKE006A	IC,STANDARD LOGIC	KRC106S KEC 50T-23 TP TRANSISTOR	KEC	DI01,103,105,106,108,109-117
2	70	01STLKE006A	IC,STANDARD LOGIC	KTA1238 KEC 50T-23 TP TRANSISTOR	KEC	DI02,104
73	72	0ULLE0038A	LED	LEDTECH ELECTRONICS LT8832-UR-191T R/TP AMBER	LEDTECH	LD101-173
25	73	0ULLE0038A	LED	LEDTECH ELECTRONICS LT8832-UR-191T R/TP AMBER	LEDTECH	LT1301-325
1	75	6506.B3003A	BUZZER,PIEZO CERAMIC	BM 208 BULEON PIEZO 4KHZ 80DB	BULEON	BUZZER
1	76	6506.B3002G	BUZZER,PIEZO CERAMIC	DBE22408P DAE YOUNG PIEZO 4KHZ 90DB(CHINA)	DAE YOUNG	BUZZER
1	77	6506.B3001A	SENSOR,TEMPERATURE	RT-SENSOR JAMES-TEC COMBI FOB	JAMES TECH	RT-SENSOR
29	78	SS0000008AA	SOLDER,SOLDERING	SR-34 PB FREE, LFH-48	HEESUNG	
59	79	SS0000019AA	METAL CREAM	LFH-48 IN-TLS PB FREE HEESUNG METAL PC941 SN601 3W-2.06G/15.03U	HEESUNG	

3-5. PCB CIRCUIT DIAGRAM – PCB CIRCUIT DIAGRAM MAY CHANGE DEPENDING ON SITUATION.

3-5-1. PWB (PCB) ASSEMBLY, MAIN CIRCUIT DIAGRAM (LED MODULE TYPE)

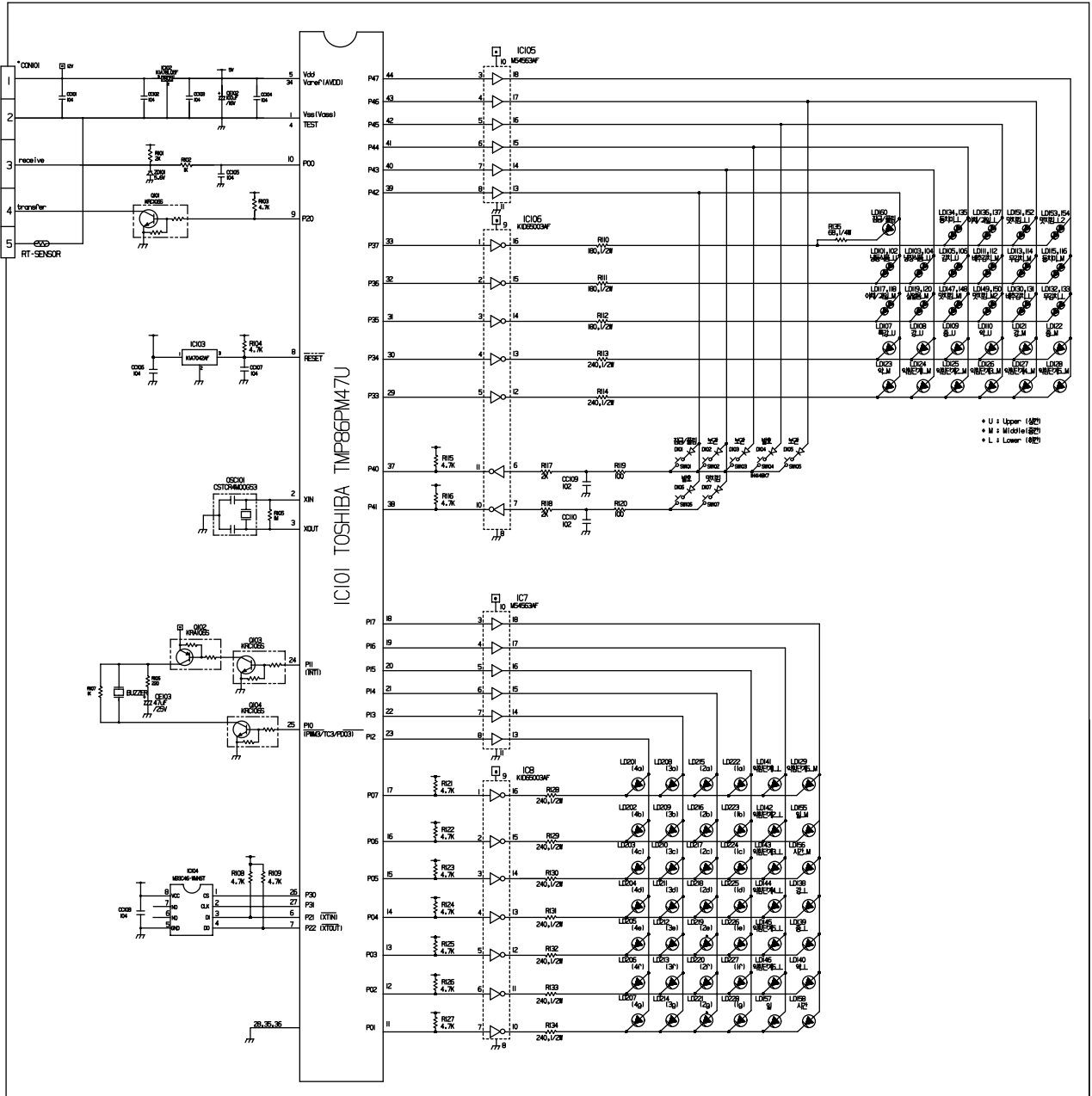
PWB (PCB) ASSEMBLY, MAIN 6877JB1129





3-5-2. PWB (PCB) ASSEMBLY, DISPLAY CIRCUIT DIAGRAM

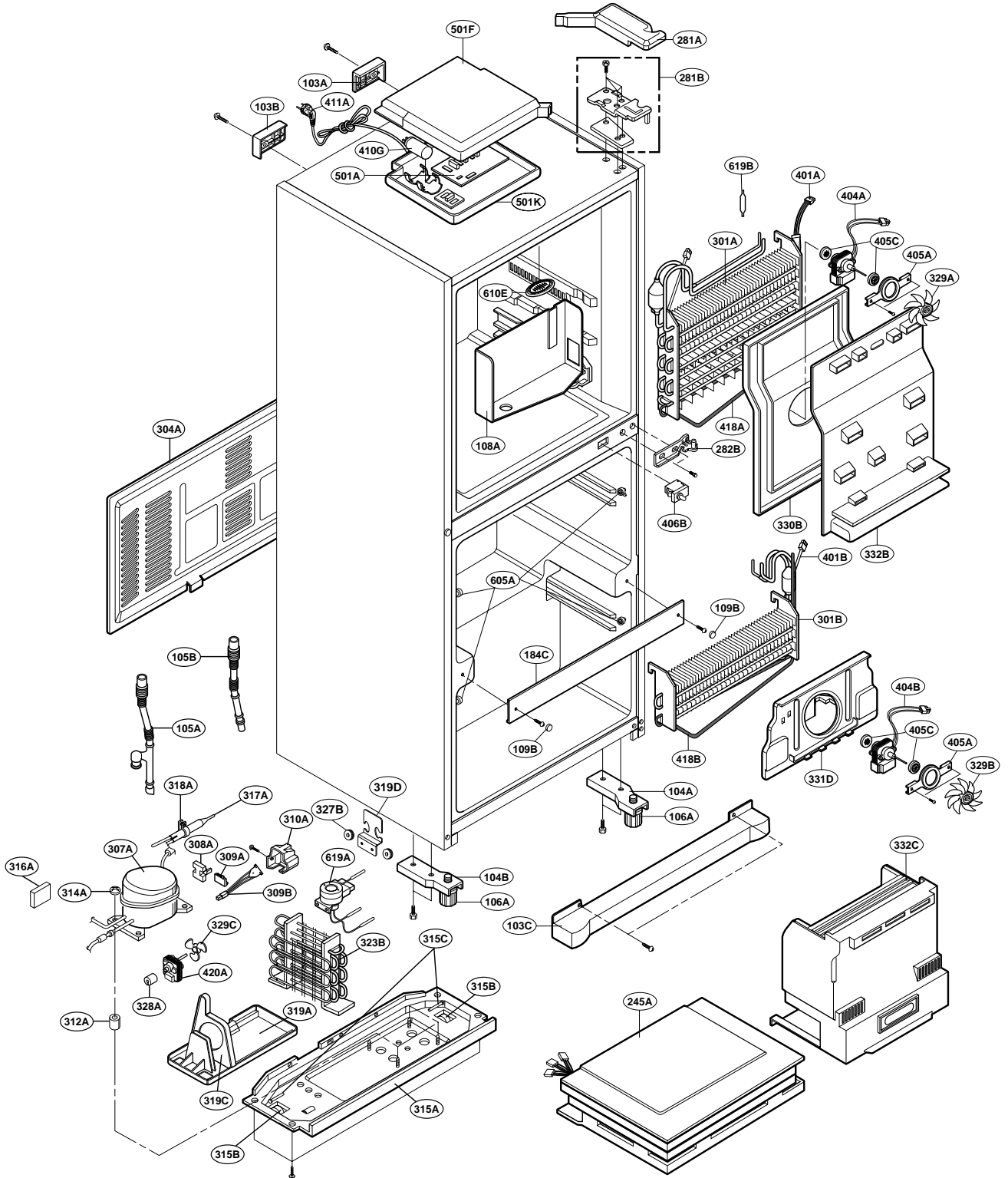
PWB (PCB) ASSEMBLY, DISPLAY (LCD: 6871JB1464, LED: 6871JB1465)



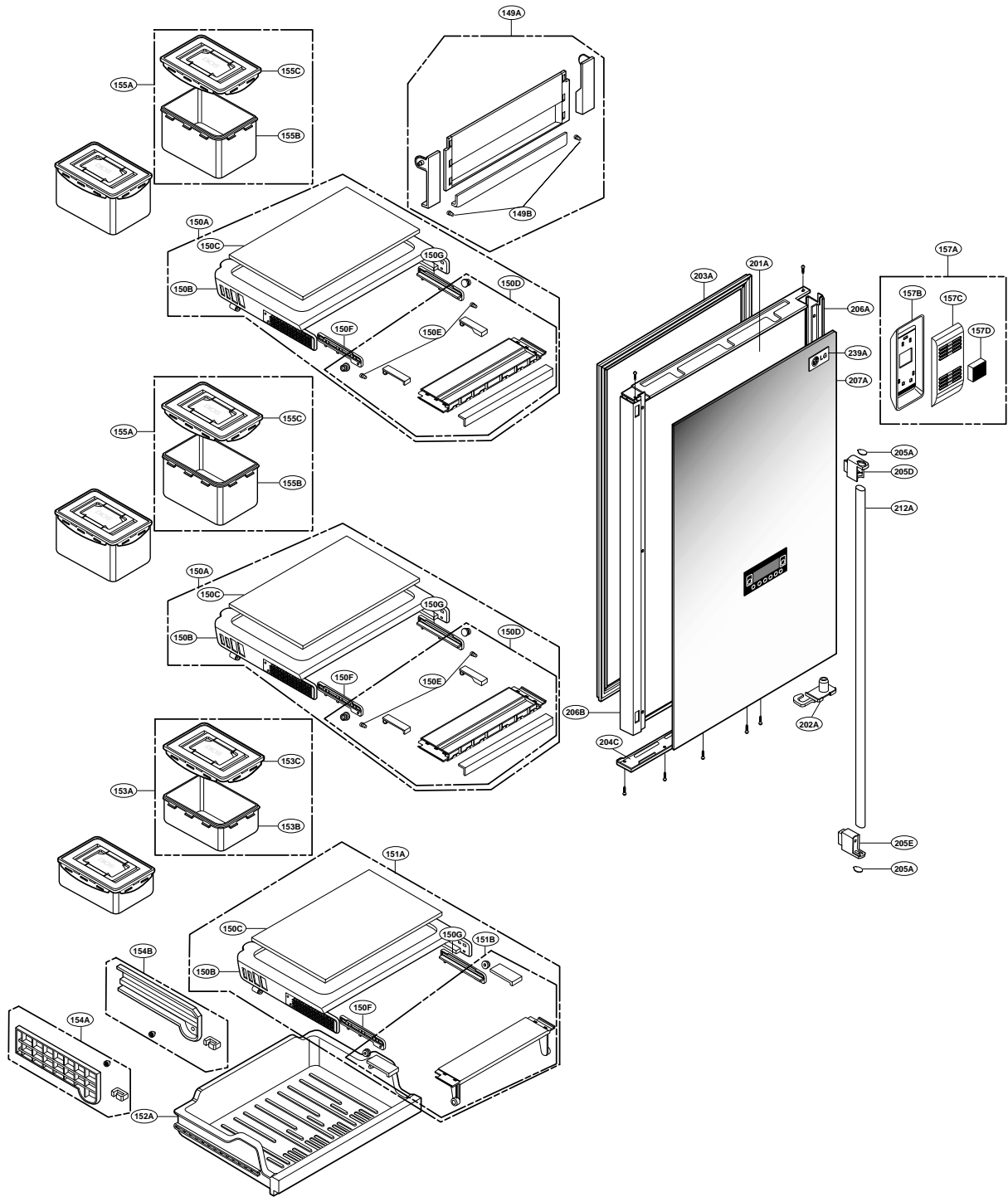
4. EXPLODED VIEW AND SERVICE PARTS LIST

4-1. EXPLODED VIEW

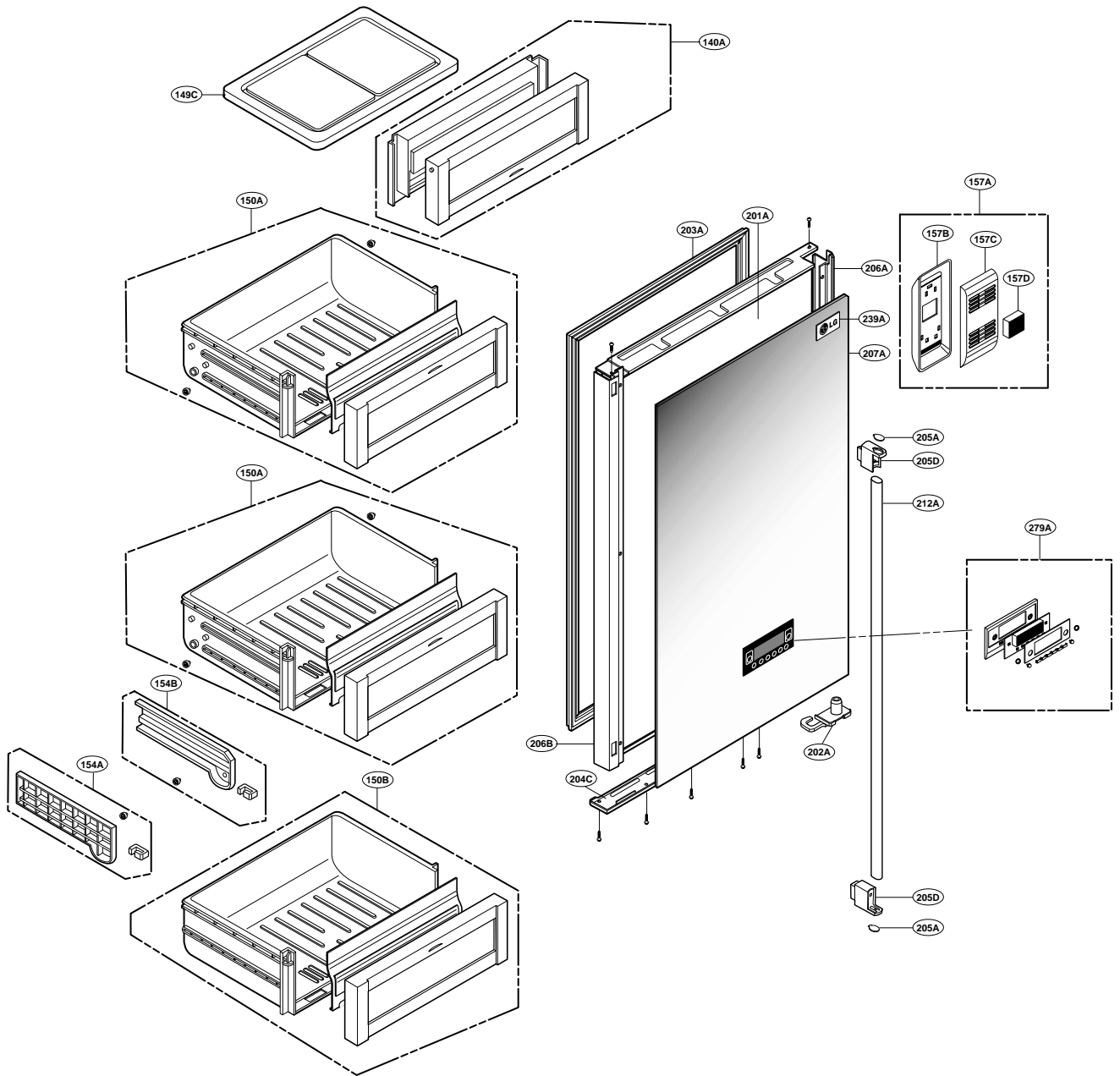
► GR-J303T*



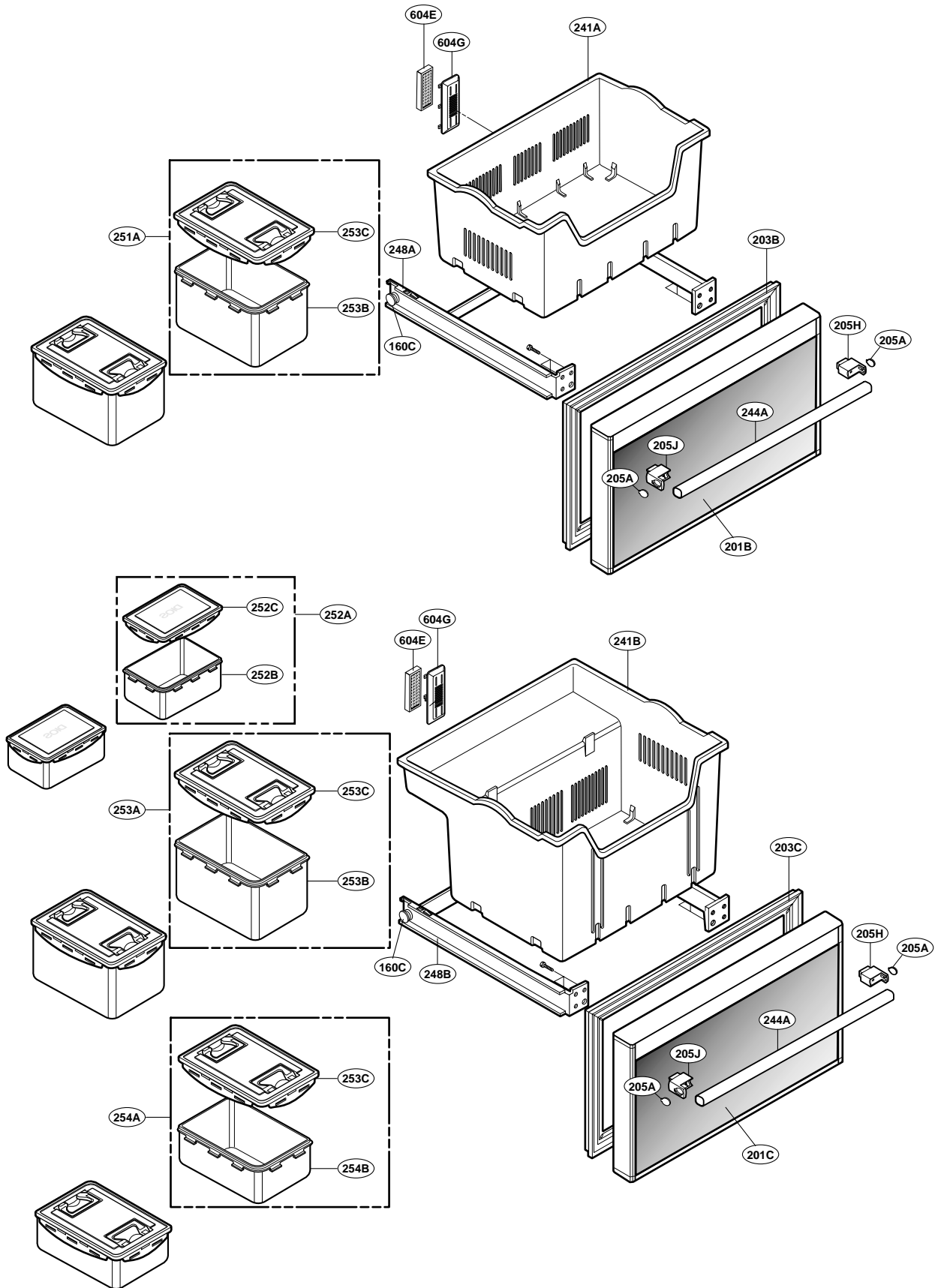
► GR-J303TG



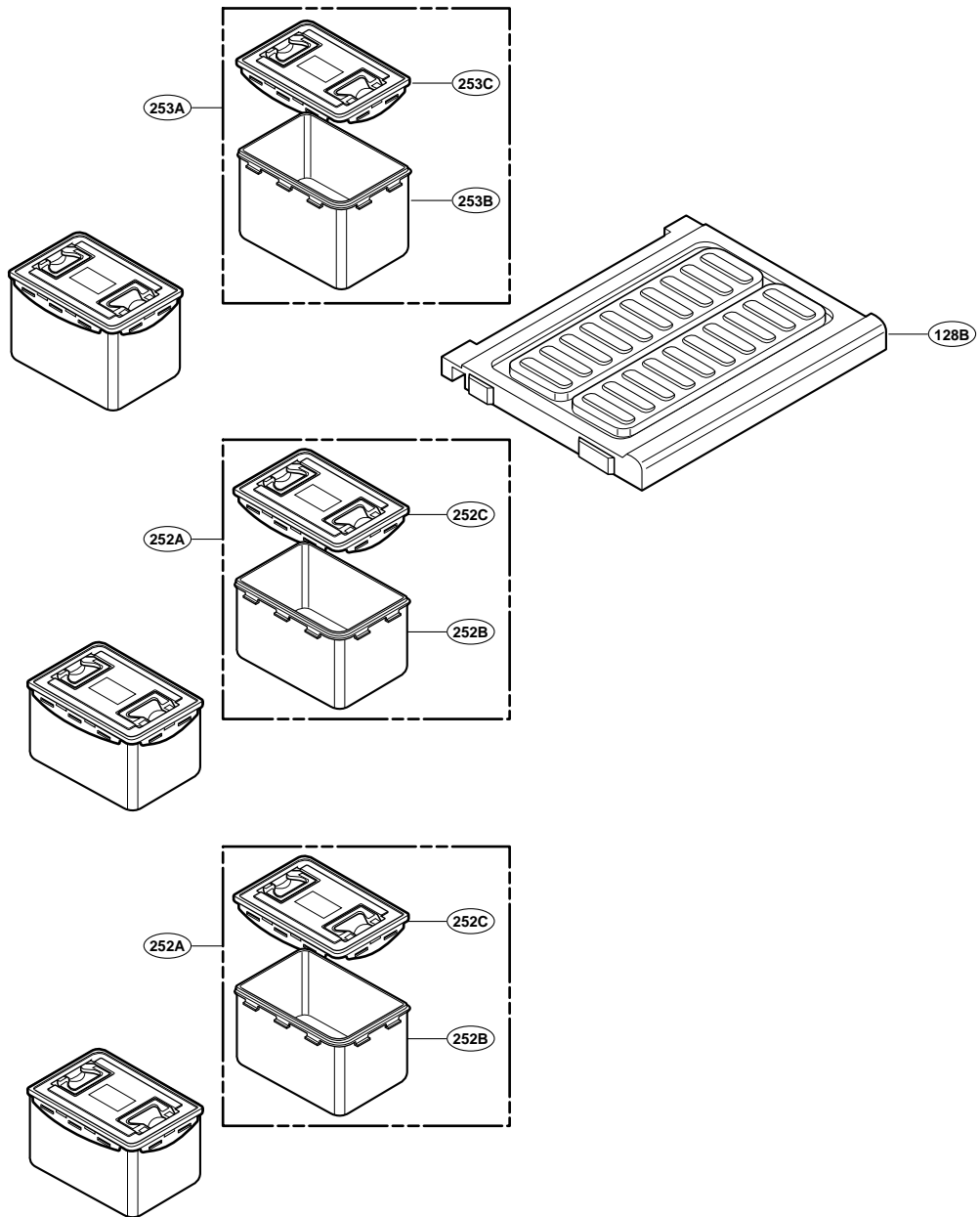
► GR-J303TS



► GR-J303TG/GR-J303TS



▶ GR-J303TG/TS (별매용)



4-2. SERVICE PARTS LIST

► GR-J303TG

LOC. NO	Description	PTNO	Qty
		GR-J303TG	
103A	Handle,Rear	3650JA2061W	1
103B	Handle,Rear	3650JA2061X	1
103C	Cover,Lower	3550JA0121A	1
104A	Leg Assembly,Frame	AFC30700601	1
104B	Leg Assembly,Frame	AFC30700602	1
105A	Tube Assembly,Drain	5251JA2006A	1
105B	Tube Assembly,Drain	5251JA3003D	1
106A	Leg,Adjust	4778JA2016D	1
106A	Leg,Adjust	4778JA2016D	1
108A	Tray Assembly,Drain	3391JA2027A	1
109B	Cap,Screw	5006JA3017G	2
149A	Door Assembly,Freeze Room	ADC30603801	1
149B	Stopper,Door	4620JA3020B	2
150A	Shelf Assembly,Freezer	AHT30603601	2
150B	Shelf	MHL30343301	2
150C	Shelf,Glass	MHL32294001	2
150D	Door Assembly,Freeze Room	ADC30603901	1
150E	Stopper,Door	4620JA3020B	2
150F	Guide,Rail	MEA30433101	2
150G	Guide,Rail	MEA30433102	2
151A	Shelf Assembly,Freezer	AHT30605401	1
151B	Door Assembly,Freeze Room	ADC30604001	1
152A	Basket	MAN30345501	1
153A	Bucket Assembly,Side Dish	AKC30625301	2
153B	Bucket,Side Dish	MKK30356001	1
153C	Cover Assembly,Bucket	ACQ30678101	1
154A	Guide Assembly,Rail	AEC30604401	1
154B	Guide Assembly,Rail	AEC30604402	1
155A	Bucket Assembly,Side Dish	AKC30625201	2
155B	Bucket,Side Dish	MKK30352101	1
155C	Cover Assembly,Bucket	ACQ30677901	1
157A	Cover Assembly,Deodorizer	ACQ30638001	1
157B	Cover,Deodorizer	MCK32972501	1
157C	Cover,Deodorizer	MCK32293801	1
157D	Deodorizer	5986JA3006D	1
160C	Roller Assembly	4581JA3003D	2
160C	Roller Assembly	4581JA3003D	2
184C	Plate,Center	3446JA2048F	1
201A	Door Foam Assembly	ADD30277504	1
201B	Door Foam Assembly,Refrigerator	5433JA1168M	1
201C	Door Foam Assembly,Refrigerator	5433JA1169M	1
202A	Stopper,Door	J325-00032A	1
203A	Gasket Assembly,Door	4987JA1024Y	1
203B	Gasket Assembly,Door	4987JA1024L	1
203C	Gasket Assembly,Door	4987JA1024M	1

LOC. NO	Description	PTNO	Qty
		GR-J303TG	
204C	Cap,Decor Freezer	5078JA0072A	1
205A	Cap,Handle	5006JA3098C	6
205D	Holder,Handle	4930JA2114A	1
205E	Holder,Handle	4930JA2114B	1
205H	Holder,Handle	4930JA2115A	1
205H	Holder,Handle	4930JA2115A	1
205J	Holder,Handle	4930JA2115B	1
205J	Holder,Handle	4930JA2115B	1
206A	Decor,Door	3806JA1205A	1
206B	Decor,Door	3806JA1206C	1
207A	Frame Assembly,LCD	3210JA1082Q	1
212A	Handle Assembly,Freezer	AED30620702	1
239A	Name Plate	3846JD1007B	1
241A	Basket,Door	5004JA0007C	1
241B	Basket,Door	5004JA0006B	1
244A	Handle Assembly,Refrigerator	3651JA2261F	1
244A	Handle Assembly,Refrigerator	3651JA2261F	1
245A	Barrier Assembly,Insulation	4791JA1036J	1
248A	Rail Assembly,TV	5219JA1004G	1
248B	Rail Assembly,TV	5219JA1004H	1
251A	Bucket Assembly,Side Dish	5075JA1030F	2
252A	Bucket Assembly,Side Dish	5075JA1028E	2
252B	Bucket,Side Dish	5074JA1053C	1
252C	Cover Assembly,Bucket	3551JA1070E	1
253A	Bucket Assembly,Side Dish	5075JA1030F	2
253B	Bucket,Side Dish	5074JA1057C	2
253C	Cover Assembly,Bucket	3551JA1069E	3
254A	Bucket Assembly,Side Dish	5075JA1027E	2
254B	Bucket,Side Dish	5074JA1052C	1
281A	Cover,Hinge	3550JA1251D	1
281B	Hinge Assembly,Upper	4775JA2008D	1
282B	Hinge Assembly,Center	4775JA2115A	1
301A	Evaporator Assembly	5421JA0045C	1
301B	Evaporator Assembly	5421JA0027E	1
304A	Cover Assembly,Machinery(Rear)	3551JA1039A	1
307A	Compressor,Set Assembly	2521C-A62CD	1
308A	Thermistor,PTC	6748C-0002C	1
309A	Overload Protect	6750C-0004S	1
309B	Drawing,Assembly	6877JB2163G	1
312A	Damper Assembly,Seat	5041JA3001A	4
314A	Stopper,Compressor	4J03277A	3
315A	Base Assembly,Compressor	3103JA0010C	1
315B	Roller	3J02312A	2
315C	Common	4J04238A	2
316A	Damper,Noise	5072JA3003F	2

LOC. NO	Description	PTNO	Qty
		GR-J303TG	
317A	Drier Assembly	5851JA2002T	1
318A	Holder,Drier	4930JA3034A	1
319A	Tray,Drip	3390JA0008B	1
319C	Guide,Fan	4974JA1036B	1
319D	Bracket,Valve	4810JA2139A	1
323B	Condenser Assembly,Wire	5403JA1044A	1
327B	Damper	5040JA3063A	2
328A	Damper,Pipe	4J03020A	1
329A	Fan Assembly	5901JA1014A	1
329B	Fan Assembly	5901JA1007A	1
329C	Fan Assembly	5901JA1013A	1
330B	Shroud Assembly,Freezer	4999JA1017B	1
331D	Shroud,Freezer	MHN30355601	1
332B	Grille Assembly,Fan	3531JA1021B	1
332C	Grille Assembly,Fan	3531JA1022A	1
401A	Controller Assembly	6615JB2005D	1
401B	Controller Assembly	6615JB2005A	1
404A	AC Motor	4680JB1036H	1
404B	AC Motor	4680JB1036N	1
405A	Bracket,Motor	4810JA3007B	2
405C	Damper,Motor Support	J756-00008B	2
405D	Damper,Motor Support	5040JA2004B	2
406B	Switch,Push Button	6600JB1005D	1
410G	Capacitor,Electric Appliance Film,Radial	0CZZJB2010H	1
410H	Capacitor,Electric Appliance Film,Radial	J513-00012P	1
411A	Power Cord Assembly	6411JB1011B	1
418A	Heater,Sheath	5300JB1121D	1
418B	Heater,Sheath	5300JB1085D	1
420A	Motor,DC	4680JB1035H	1
501A	PCB Assembly,Main	6871JB1129Q	1
501F	Cover,PCB	3550JA1399C	1
501K	Case,PCB	3110JA1020B	1
604E	Deodorizer	4756JA3001D	2
604G	Cover,Deodorizer	3550JA2143C	2
605A	Roller Assembly	AHJ30124501	4
610E	Cover,Sensor	3550JA2035D	1
619A	Valve Assembly,Pipe	5221JA1008A	1
619B	Valve Assembly,Check	5221JA3002C	1

► GR-J303TS

LOC. NO	Description	PTNO	Qty
		GR-J303TS	
103A	Handle,Rear	3650JA2061W	1
103B	Handle,Rear	3650JA2061X	1
103C	Cover,Lower	3550JA0121A	1
104A	Leg Assembly,Frame	AFC30700601	1
104B	Leg Assembly,Frame	AFC30700602	1
105A	Tube Assembly,Drain	5251JA3003D	1
105B	Tube Assembly,Drain	5251JA2006A	1
106A	Leg,Adjust	4778JA2016D	1
106A	Leg,Adjust	4778JA2016D	1
108A	Tray Assembly,Drain	3391JA2027A	1
109B	Cap,Screw	5006JA3017G	2
140A	Door Assembly,Freeze Room	ADC30624601	1
150A	Tray Assembly,Drawer	AJP30624701	2
150B	Tray Assembly,Drawer	AJP30624801	1
154A	Guide Assembly,Rail	AEC30604401	1
154B	Guide Assembly,Rail	AEC30604402	1
157A	Cover Assembly,Deodorizer	ACQ30638001	1
157B	Cover,Deodorizer	MCK32972501	1
157C	Cover,Deodorizer	MCK32293801	1
157D	Deodorizer	5986JA3006D	1
160C	Roller Assembly	4581JA3003D	2
160C	Roller Assembly	4581JA3003D	2
184C	Plate,Center	3446JA2048F	1
201A	Door Foam Assembly	ADD30277503	1
201B	Door Foam Assembly,Refrigerator	5433JA1168U	1
201C	Door Foam Assembly,Refrigerator	5433JA1169U	1
202A	Stopper,Door	J325-00032A	1
203A	Gasket Assembly,Door	4987JA1024Y	1
203B	Gasket Assembly,Door	4987JA1024L	1
203C	Gasket Assembly,Door	4987JA1024M	1
204C	Cap,Decor Freezer	5078JA0072A	1
205A	Cap,Handle	5006JA2070B	6
205D	Holder,Handle	4930JA2112C	2
205H	Holder,Handle	4930JA2113C	1
205H	Holder,Handle	4930JA2113C	1
205J	Holder,Handle	4930JA2113D	1
205J	Holder,Handle	4930JA2113D	1
206A	Decor,Door	3806JA1205A	1
206B	Decor,Door	3806JA1206C	1
207A	Panel Assembly,Metal	AGL30700506	1
212A	Handle,Freezer	3650JA1245C	1

LOC. NO	Description	PTNO	Qty
		GR-J303TS	
239A	Name Plate	3846JD1007B	1
241A	Basket,Door	5004JA0007C	1
241B	Basket,Door	5004JA0006B	1
244A	Handle,Freezer	3650JA1245D	1
244A	Handle,Freezer	3650JA1245D	1
245A	Barrier Assembly,Insulation	4791JA1036J	1
248A	Rail Assembly,TV	5219JA1004G	1
248B	Rail Assembly,TV	5219JA1004H	1
251A	Bucket Assembly,Side Dish	5075JA1030F	2
252A	Bucket Assembly,Side Dish	5075JA1028E	2
252B	Bucket,Side Dish	5074JA1053C	1
252C	Cover Assembly,Bucket	3551JA1070E	1
253A	Bucket Assembly,Side Dish	5075JA1030F	2
253B	Bucket,Side Dish	5074JA1057C	2
253C	Cover Assembly,Bucket	3551JA1069E	3
254A	Bucket Assembly,Side Dish	5075JA1027E	2
254B	Bucket,Side Dish	5074JA1052C	1
279A	Frame Assembly,Display	ADV30639709	1
281A	Cover,Hinge	3550JA1251D	1
281B	Hinge Assembly,Upper	4775JA2008D	1
282B	Hinge Assembly,Center	4775JA2115A	1
301A	Evaporator Assembly	5421JA0045C	1
301B	Evaporator Assembly	5421JA0027E	1
304A	Cover Assembly,Machinery(Rear)	3551JA1039A	1
307A	Compressor,Set Assembly	2521C-A62CD	1
308A	Thermistor,PTC	6748C-0002C	1
309A	Overload Protect	6750C-0004S	1
309B	Drawing,Assembly	6877JB2163G	1
312A	Damper Assembly,Seat	5040JA3071A	4
314A	Stopper,Compressor	4J03277A	3
315A	Base Assembly,Compressor	3103JA0010C	1
315B	Roller	3J02312A	2
315C	Common	4J04238A	2
316A	Damper,Noise	5072JA3003F	2
317A	Drier Assembly	5851JA2002T	1
318A	Holder,Drier	4930JA3034A	1
319A	Tray,Drip	3390JA0008B	1
319C	Guide,Fan	4974JA1036B	1
319D	Bracket,Valve	4810JA2139A	1
323B	Condenser Assembly,Wire	5403JA1044A	1
327B	Damper	5040JA3063A	2

▶ GR-J303TG/TS (별매용)

LOC. NO	Description	PTNO		Qty
		GR-J303TG	GR-J303TS	
128B	Shelf, Freezer	5026A1176C	←	1
252A	Bucket, Assembly, Side Dish	5075J1024E	←	4
252B	Bucket, Side Dish	5074JA1043C	←	1
252C	Cover Assembly, Bucket	3551JA1052E	←	1
253A	Bucket Assembly, Side Dish	5075JA1023E	←	2
253C	Bucket, Side Dish	5074JA1042C	←	1
253C	Cover Assembly, Bucket	3551JA1051E	←	1



P/No. 3828JD8947B

JAN., 2007 Printed in Korea