

# MGF3022AM, MGF4921AM, MGF493xxM series, MGF4965BM

4pin flat lead packaged device

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QL-1079E-J

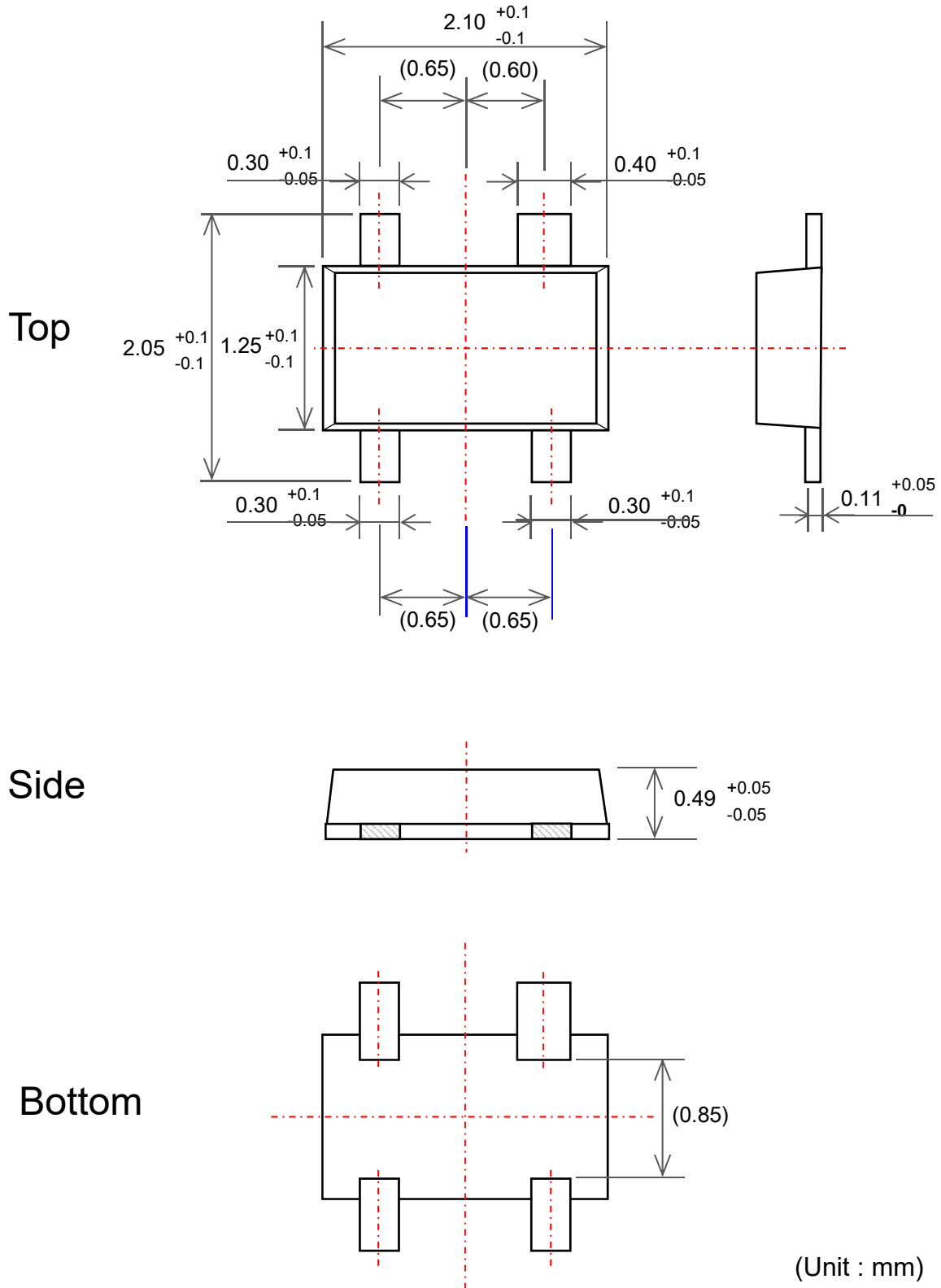
## Recommended assembly method for MITSUBISHI ELECTRIC 4-pin flat lead packaged device

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# 1. Outline Drawing

## 4pin flat lead packaged device : GD-30





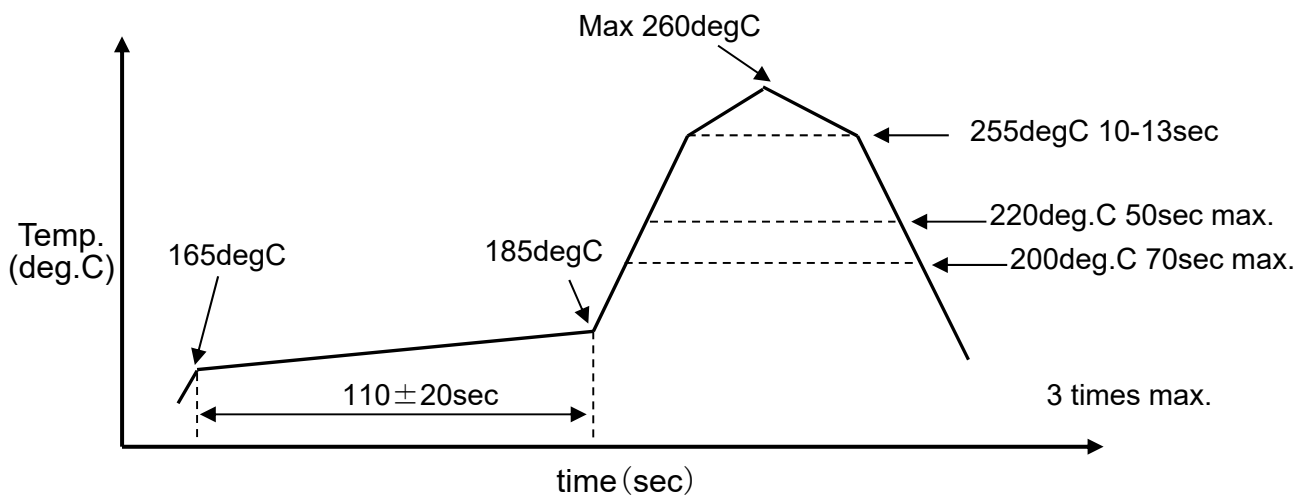
### 3. Recommended soldering methods

#### 3-1. Recommended conditions of IR reflow

##### (1) Solder type

- Alloy : Sn-3Ag-0.5Cu
- Particle Size : 25 ~ 35 $\mu$ m
- Content of Halide : under 0.1wt%

##### (2) Reflow Profile



**Point:**

- Number of reflow : 3 times max
- Indicated temperature means the temperature on the surface of package.
- Keep under 260deg.C

#### **Caution !**

1. Do not heat the device over 260deg.C, otherwise the device could be degraded.
2. Please proceed as quickly as possible while high temperature is added to the device, otherwise it could be likely to have an adverse impact on the reliability of the device.

### 3. Recommended soldering methods

#### 3-2 Recommended conditions using a soldering iron

##### Condition

Temperature at a lead terminal : under 380deg.C / lead

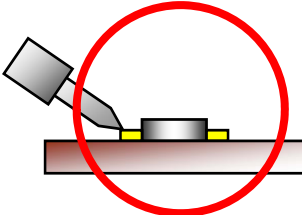
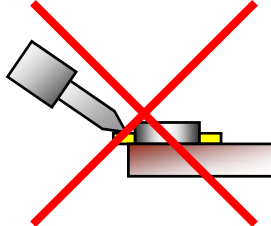
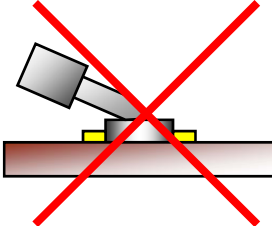
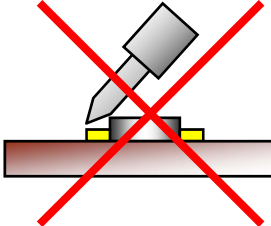
Heating time period : 3sec max / lead

Content of Halide in solder flux : under 0.1wt%

**Point:**

- Please solder in the shortest possible time.
- Please connect the front edge of soldering iron to the ground.
- Please make sure that operators put earth bands on.

##### How to use a soldering iron

			
Please solder with front edge of iron without any contacts to the package	Don't push a lead terminal without back supports	Don't push the head of package	Don't touch the head of package when soldering

##### Caution !

1. Please connect the front edge of soldering iron to the ground and make sure that operators are connected to the ground to protect the devices from ESD.
2. Do not push or touch the head of package with front edge of soldering iron, otherwise the package outline could be deformed.

## 4. Recommended storage condition

It is very important for maintaining quality and performances of a device to manage safekeeping condition and to meet storage limitation.

Plastic package may absorb moisture depending on storage conditions. In the case of applying reflow soldering to the package with absorption, moisture would expand and might cause breaking up adhesions between lead frame and mold resin or might cause a package crack.

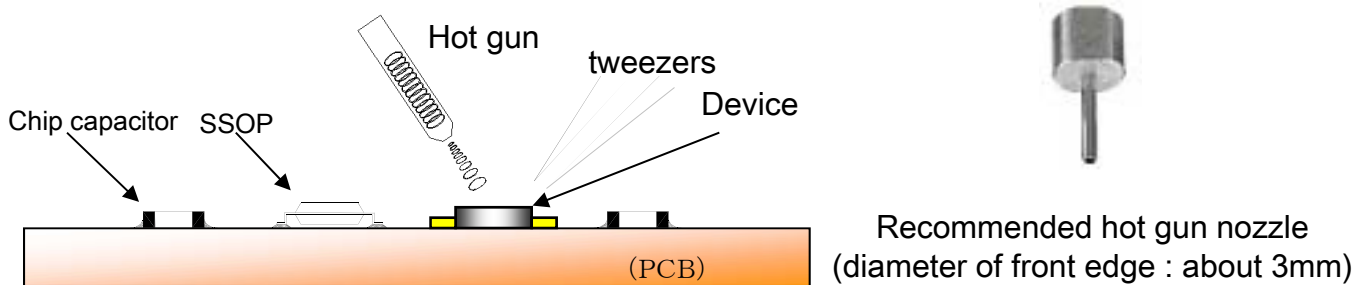
Please keep the recommended storage condition shown as below, after opening moisture-proof container.

Item	Recommended condition
<b>Before</b> opened storage bag	
Storage temperature	< 40 deg.C
Storage humidity	< 80%RH
Storage limitation	< 12 months
<b>After</b> opened storage bag	
Storage temperature	< 30 deg.C
Storage humidity	< 60%RH
Storage limitation	< 7 days

## 5. Recommended Rework Process

### Recommended condition using a Hot gun

Rework method using a Hot Gun (Spot Heater) is shown in following figure. Please control the temperature, position and airflow of Hot Gun to keep the package surface temperature.



### Recommended temperature and time

Temperature at package surface

**380 deg.C max.**

Time

**5 sec. max.**

### Attention!

1. Please be careful so that other adjacent components does not receive any thermal or mechanical influences.  
Especially in the case of using hot gun with strong air blow, the adjacent component might be flied apart.
2. Please put on a wrist wrap in order to protect the other devices from ESD.
3. Mitsubishi does NOT recommended, also NOT guarantee to use the removed device.

## 6. Washability

Washing process with pure water is ONLY allowed. After the washing process, the device should be dried and no residue of water should be confirmed.

## 7. Notice

These conditions which is shown on this note is not guaranteed condition, but our recommended conditions.

Please confirm the assembly conditions at customer side before using our device.



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