

4 POLE (2 FORM C+ 2 FORM A) SIGNAL RELAY FOR CENTRAL SWITCHING/ DATA TRANSMISSION

FTR-B2 Series

RoHS Compliant

■ FEATURES

- 4 POLE MINIATURE RELAY
Mounting space of 175mm² with 4 pole relay, suitable for high density mounting.
- SAFETY STANDARD
 - UL/CSA recognized
 - Conforms to Bellcore specification & FCC part 68
 - Conforms to IEC 60950 / UL1950 / EN60950 spacing and high breakdown voltage
- Clearance: 1.0mm
- Creepage: 1.6mm
- HIGH RELIABILITY
Bifurcated gold overlay silver alloy
- HIGH HEAT RESISTANCE, FLAMMABILITY
Flammability grade of 94V-0 materials employed
- AIR TIGHT CONSTRUCTION
Air tight construction allows high resistance to various environments and to clean the relay
- SMT VERSION
Surface mount type available on request
- RoHS compliant since date code: 0430B8
Please see page 7 for more information



■ ORDERING INFORMATION

[Example] FTR-B2 M A 012 Z -**
 (a) (b) (c) (d) (e) (f)

| | | |
|-----|----------------------|---|
| (a) | Series Name | FTR-B2 |
| (b) | Contact Arrangement | M : 2 Form C + 2 Form A - through hole N : 2 Form C + 2 Form A - SMT |
| (c) | Coil Type | A : Standard (400mW) |
| (d) | Coil Nominal Voltage | 4.5: 4.5VDC 012: 12VDC |
| (e) | Contact Material | Z : Gold overlay silver alloy |
| (f) | Custom Designation | Special Number for Customized Products |

Remarks: Actual marking on relay would not carry code FTR and be as below:

Ordering code Actual marking
 FTR-B2MA012Z → B2MA012Z

FTR-B2 Series

■ SAFETY STANDARD AND FILE NUMBERS

UL508, 1950 (File No. E63615)

C22.2 No. 14, No. 950 (File No. LR40304)

Please request when the approval markings are required on the cover.

| Nominal voltage | Contact rating |
|-----------------|--|
| 4.5 to 12 VDC | 0.2 A 125 VAC 1 A 30 VDC 0.3 A 110 VDC — resistive |

| Clearance | Creepage | Remarks |
|---------------------------|--------------------------|---|
| 1.0mm coil a- contacts | 1.6mm coil - contacts | - working voltage: 150V - relay inside and outside - pollution degree "2" |

■ COIL DATA CHART

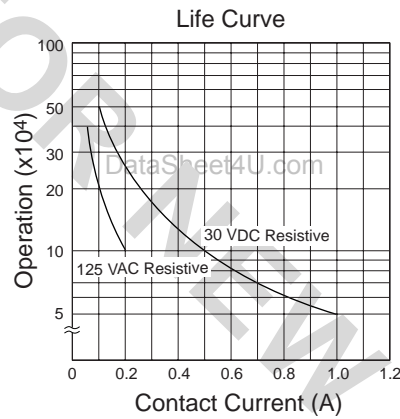
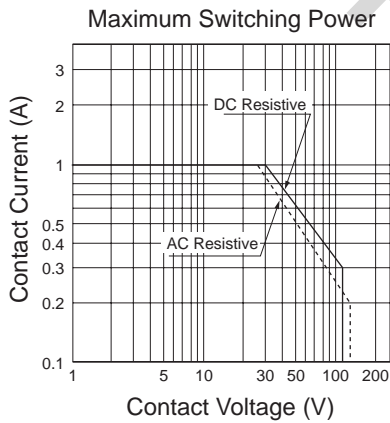
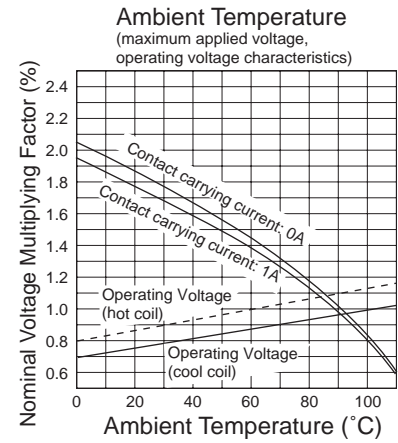
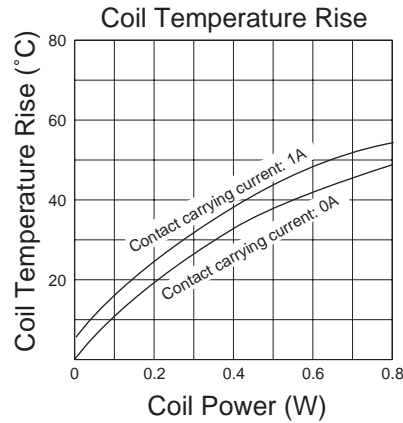
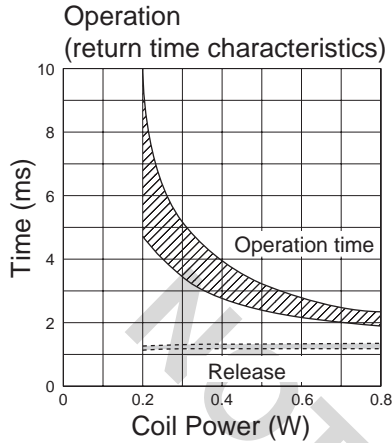
| MODEL | Nominal Voltage | Coil Resistance | Operate Voltage | Release Voltage | Nominal Power |
|------------------|-----------------|-----------------|-----------------|-----------------|---------------|
| FTR-B2 () A4.5Z | 4.5VDC | 50Ω | 3.38VDC | 0.45VDC | 400mw |
| FTR-B2 () A012Z | 12VDC | 355Ω | 9.0VDC | 1.2VDC | 400mw |

FTR-B2 Series

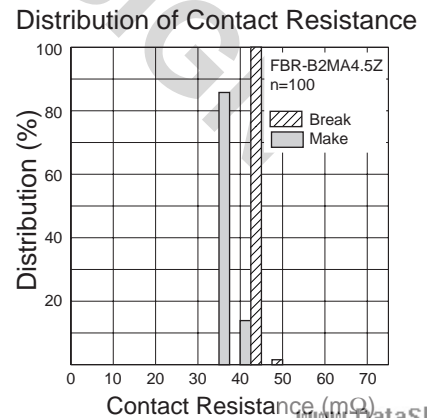
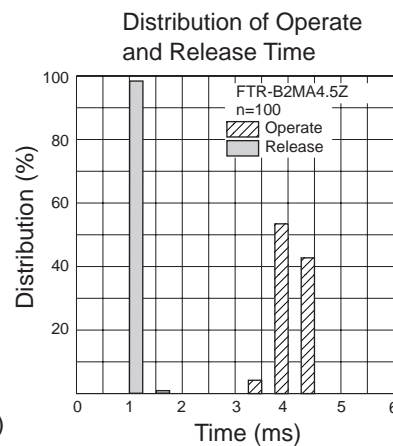
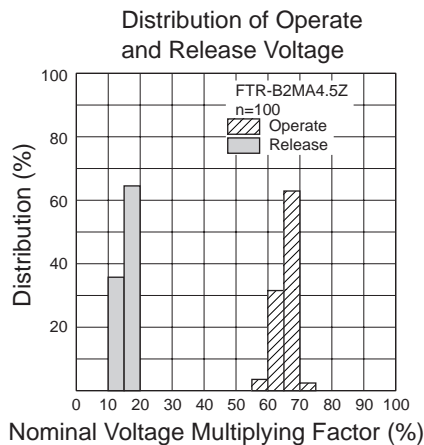
■ SPECIFICATIONS

| Item | | FTR-B2 Series |
|------------|-----------------------------------|--|
| Contact | Arrangement | 2 Form C + 2 Form A |
| | Material | Gold overlay Silver alloy |
| | Resistance (initial) | Maximum 75mΩ (at 1A 6VDC) |
| | Rating (resistive) | 30VDC 1A / 125VAC 0.2A |
| | Maximum Switching Power | 30W / 25VA |
| | Maximum Switching Voltage | 110VDC / 125VAC |
| | Maximum Switching Current | 1A |
| | Maximum Carrying Current | 1.25A |
| Time Value | Operate Time (at nominal voltage) | Maximum 10ms |
| | Release Time (at nominal voltage) | Maximum 5ms |
| Coil | Operating Temperature | -40° C to +85° C (no frost) |
| Insulation | Resistance (at 500VDC) | Minimum 1,000 MΩ |
| | Dielectric Strength | 750 VAC 1 Min. (open contacts) 500 VAC 1 Min. (adjacent contacts) 1,500 VAC 1 Min. (coil-contacts) |
| Life | Mechanical | 10 x 10 ⁶ operations minimum |
| | Electrical | 50 x 10 ³ operations minimum at 30VDC 1A 100 x 10 ³ operations minimum at 125VDC 0.2A |
| Vibration | Misoperation | 10-55 Hz (double amplitude of 1.5mm) |
| | Endurance | 10-55 Hz (double amplitude of 1.5mm) |
| Shock | Misoperation | 100m/s ² (11±1ms) |
| | Endurance | 500m/s ² (6±1ms) |
| Weight | | Approximately 3.9g |

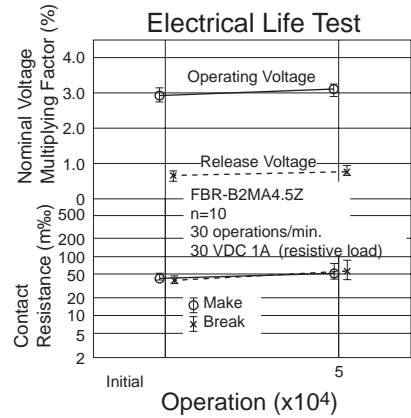
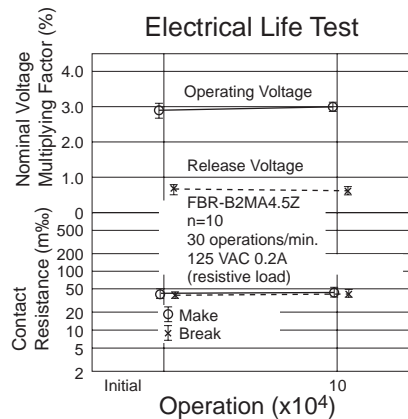
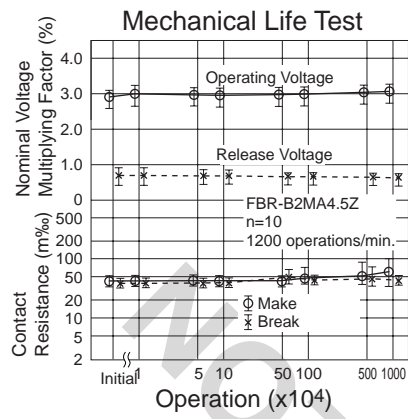
CHARACTERISTIC DATA



REFERENCE DATA

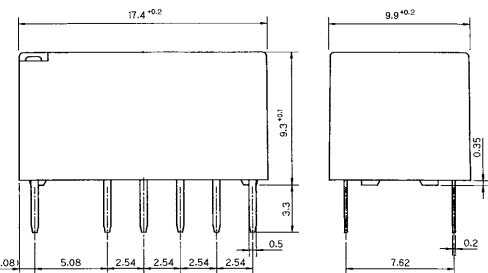


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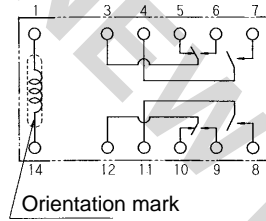


DIMENSIONS

Through hole type

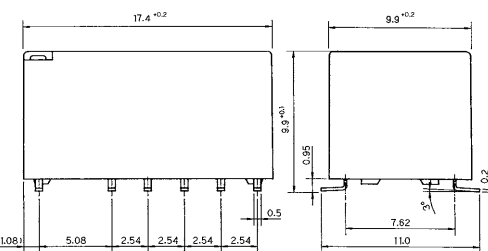


Schematics (BOTTOM VIEW)

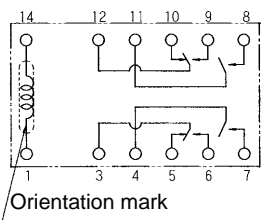


PC board mounting hole layout (BOTTOM VIEW)

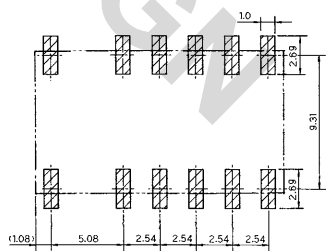
Surface mount type



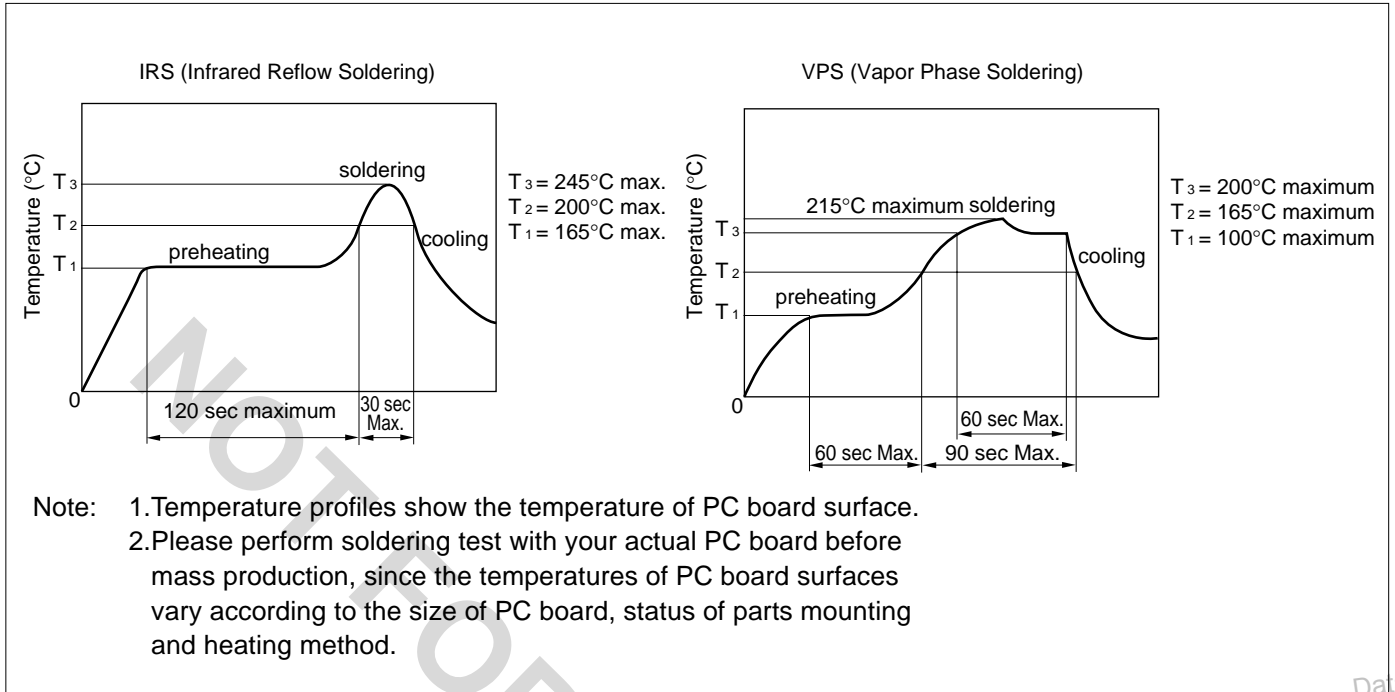
Schematics (TOP VIEW)



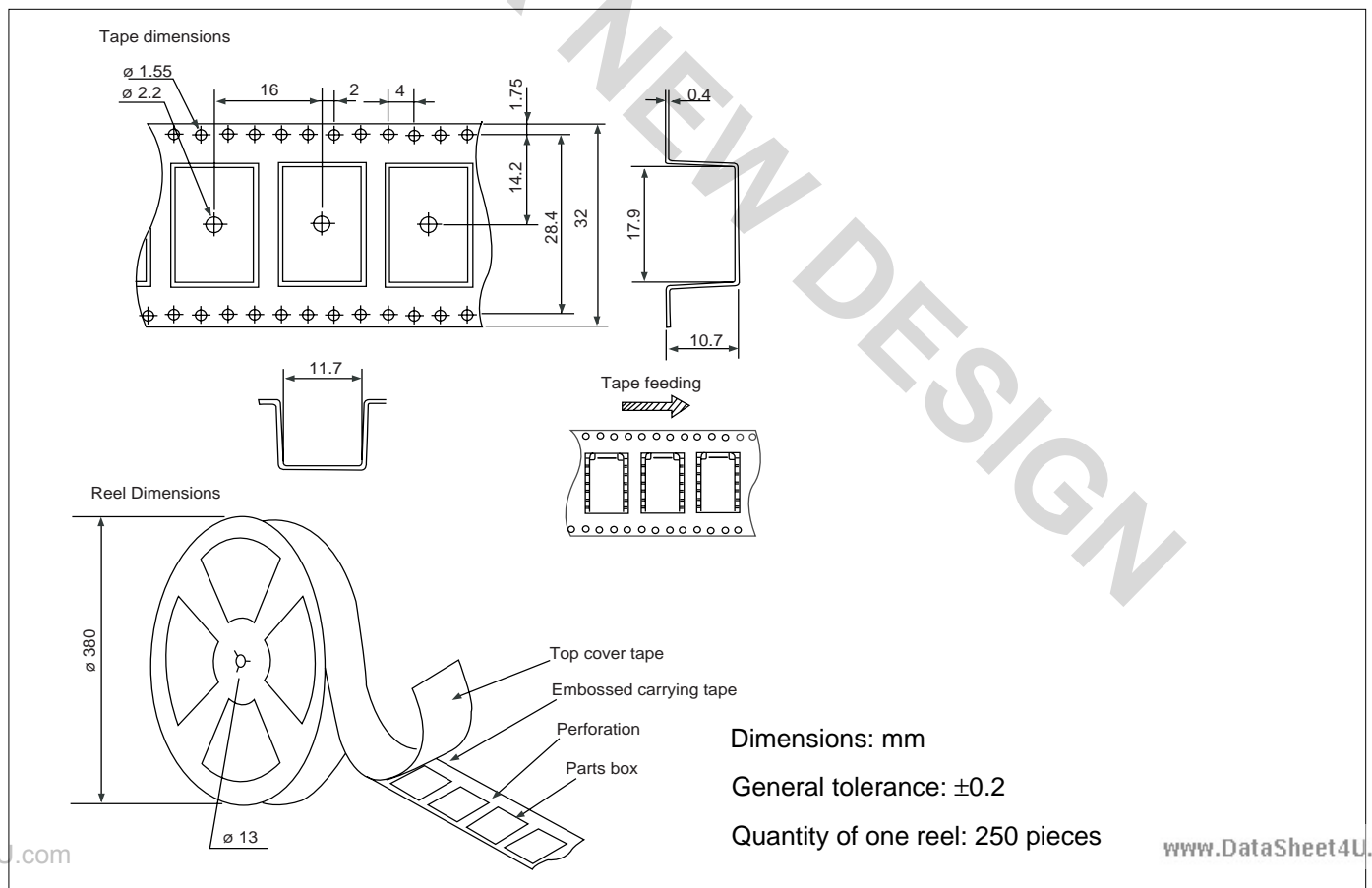
PC board mounting hole layout (TOP VIEW)



RECOMMENDED CONDITION (Temperature Profile)



PACKAGING



RoHS Compliance and Lead Free Relay Information

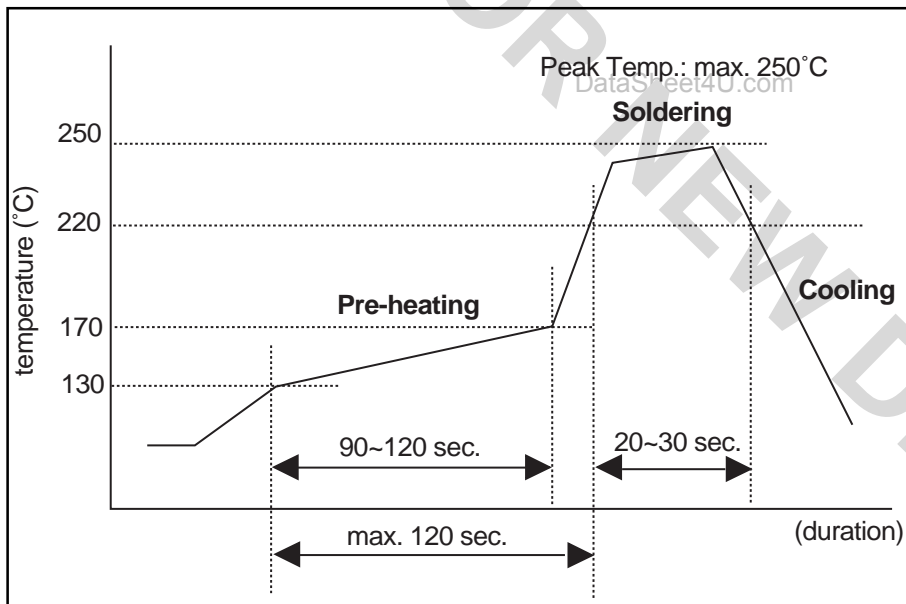
1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (<http://www.fcai.fujitsu.com/pdf/LeadFreeLetter.pdf>)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu. From February 2005 forward Sn-3.0Cu-Ni will be used for FTRB3 and FTR-B4 series relays.
- Most signal and some power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 6 hazardous materials that are restricted by RoHS directive (lead, mercury, cadmium, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in lead assembly process will not cause any problems (compatible).
- "LF" is marked on each outer and inner carton. (No marking on individual relays).
- To avoid lead relays (for lead-free sample, etc.) please consult with area sales office. We will ship lead relays as long as the lead relay inventory exists.

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu and Sn-3.0 Cu-Ni (only FTR-B3 and FTR-B4 from February 2005)

Reflow Solder condition



Flow Solder condition:

Pre-heating: maximum 120°C
Soldering: dip within 5 sec. at 260°C solder bath

Solder by Soldering Iron:

Soldering Iron
Temperature: maximum 360°C
Duration: maximum 3 sec.

We highly recommend that you confirm your actual solder conditions

3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical relays.

4. Tin Whisker

- SnAgCu solder is known as low risk of tin whisker. No considerable length whisker was found by our in-house test.

5. Solid State Relays

- Each lead terminal will be changed from solder plating to Sn plating and Nickel plating. A layer of Nickel plating is between the terminal and the Sn plating to avoid whisker.

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