

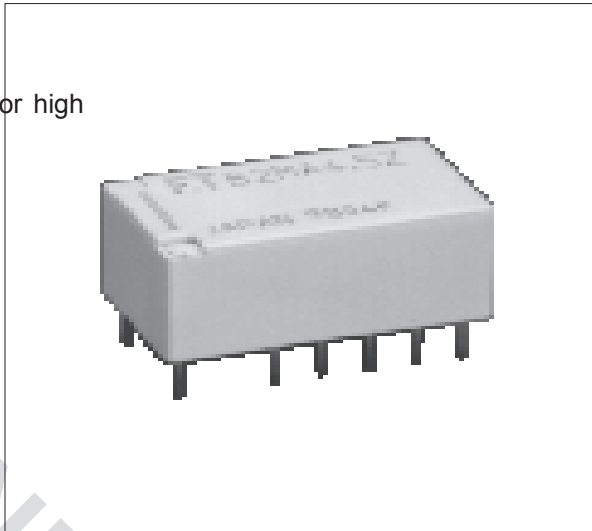
4 Pole (2 FORM C+ 2 FORM A) Signal Relay for Central Switching/ Data Transmission

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
Airtight 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] $\frac{\text{FTR-B2}}{\text{(a)}} \frac{\text{M A 012}}{\text{(b)(c)}} \frac{\text{Z}}{\text{(d)}} \frac{\text{-**}}{\text{(e) (f)}}$

(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 (± 10%)	Must Operate Voltage	Must Release Voltage
FTR-F2 Series	FTR-H2 Series				
FTR-F2AK005T	FTR-H2AK005T	5VDC	47Ω	3.5VDC	0.25VDC
FTR-F2AK006T	FTR-H2AK006T	6VDC	68Ω	4.2VDC	0.3VDC
FTR-F2AK009T	FTR-H2AK009T	9VDC	155Ω	6.3VDC	0.45VDC
FTR-F2AK012T	FTR-H2AK012T	12VDC	270Ω	8.4VDC	0.6VDC
FTR-F2AK024T	FTR-H2AK024T	24VDC	1,200Ω	16.8VDC	1.2VDC
FTR-F2AK048T	FTR-H2AK048T	48VDC	4,400Ω	33.6VDC	2.4VDC

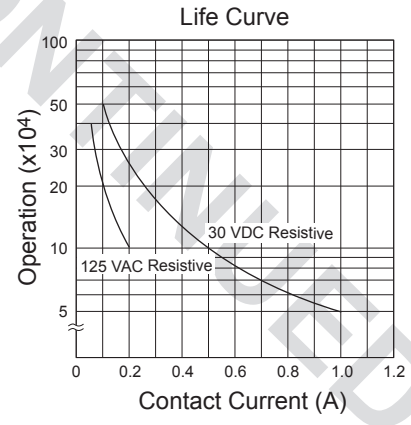
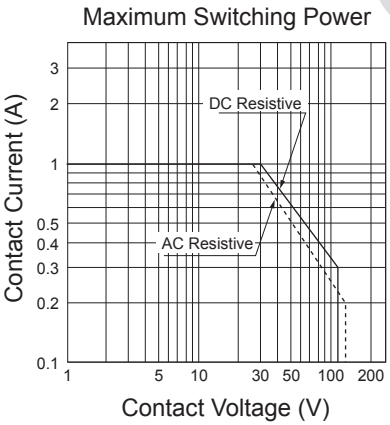
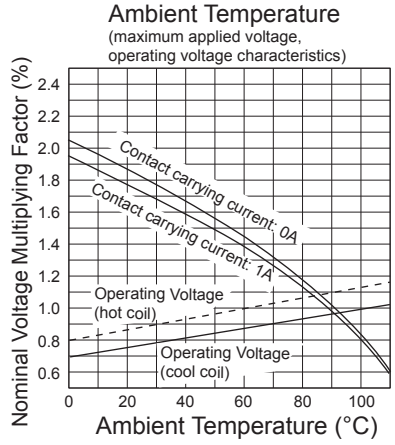
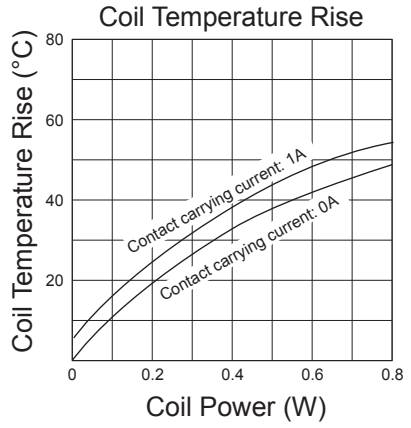
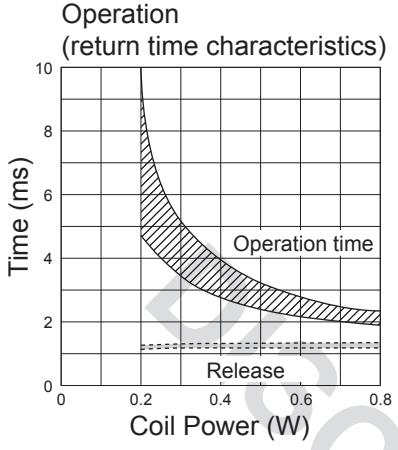
FTR-B2 Series

■ SPECIFICATIONS

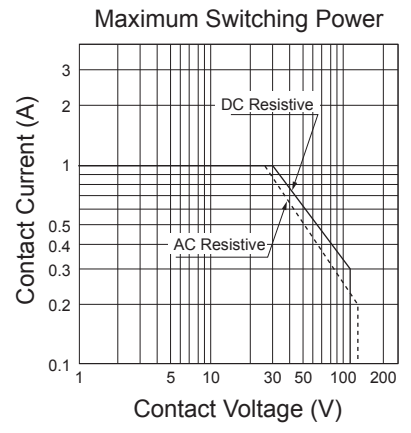
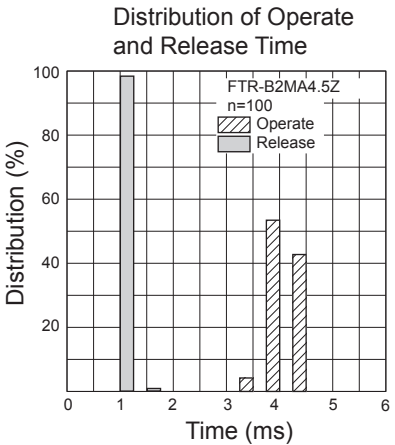
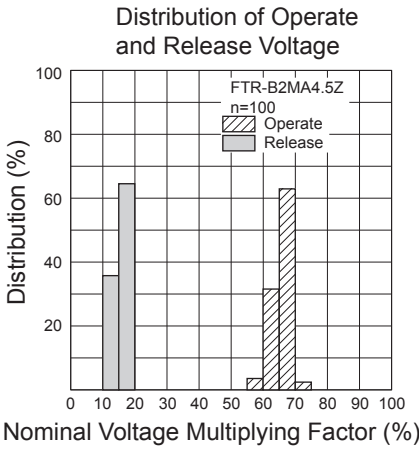
Item		FTR-B2 Series
Contact	Arrangement	2 Form C + 2 Form A
	Material	Gold overlay Silver alloy
	Resistance (initial)	Maximum 75mΩ (at 1A 6VDC)
	Rating (resistive)	30VDC 1A / 125VAC 0.2A
	Maximum Switching Power	30W / 25VA
	Maximum Switching Voltage	110VDC / 125VAC
	Maximum Switching Current	1A
	Maximum 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

FTR-B2 Series

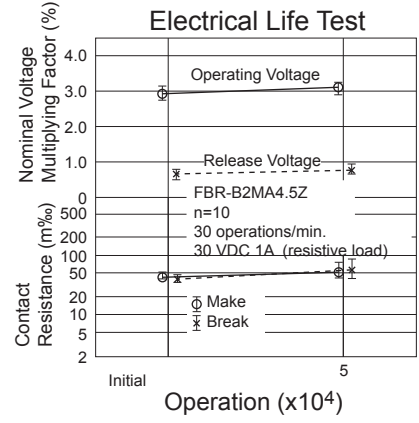
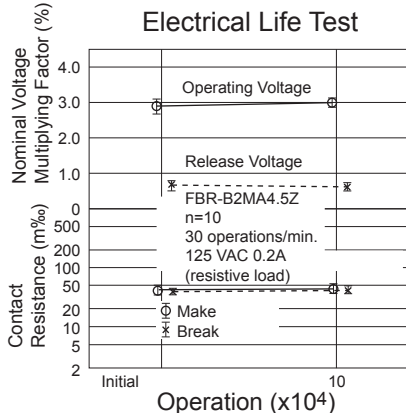
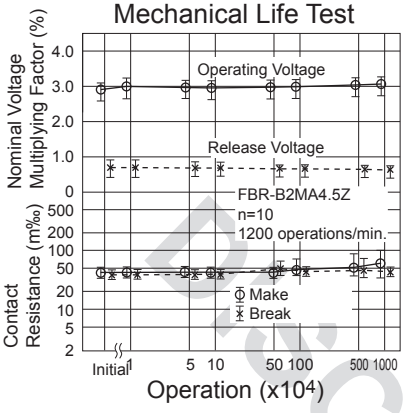
CHARACTERISTIC DATA



REFERENCE DATA



■ REFERENCE DATA



■ DIMENSIONS

● Dimensions

Through hole type

● Dimensions

Surface mount type

● Schematics (BOTTOM VIEW)

Orientation mark

● Schematics (TOP VIEW)

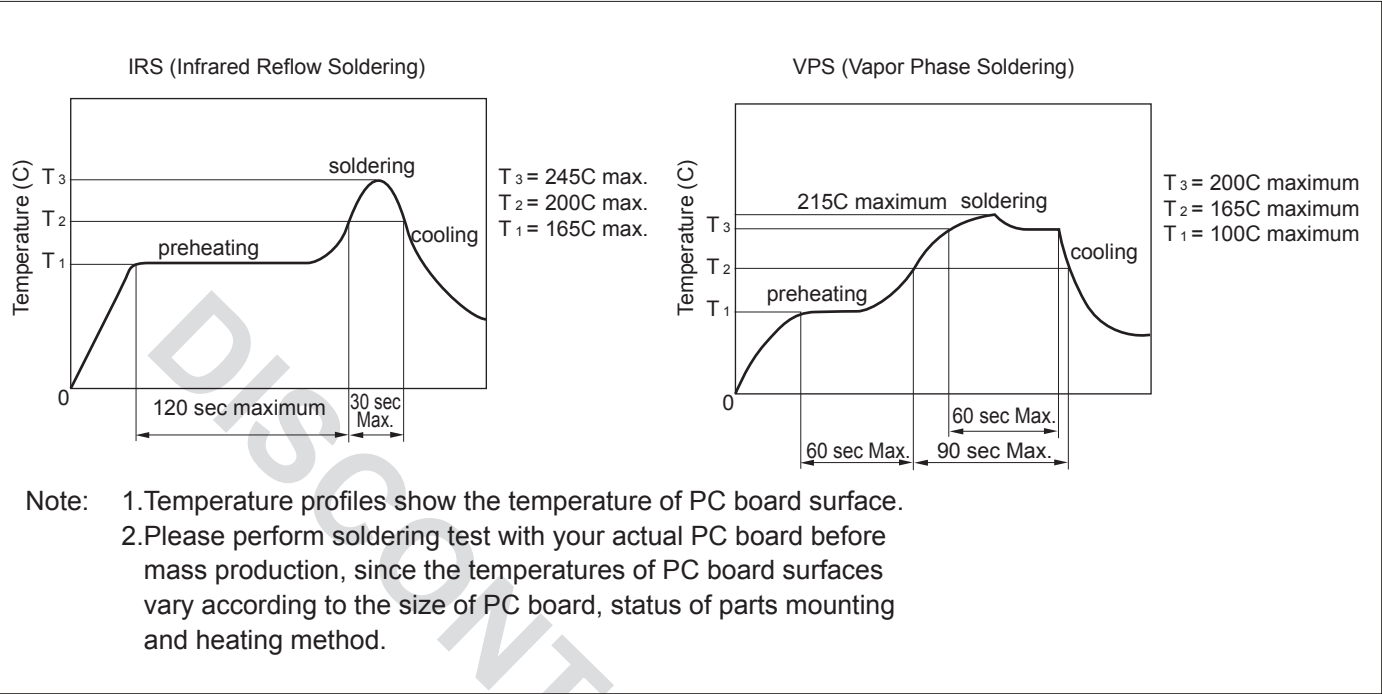
Orientation mark

● PC board mounting hole layout (BOTTOM VIEW)

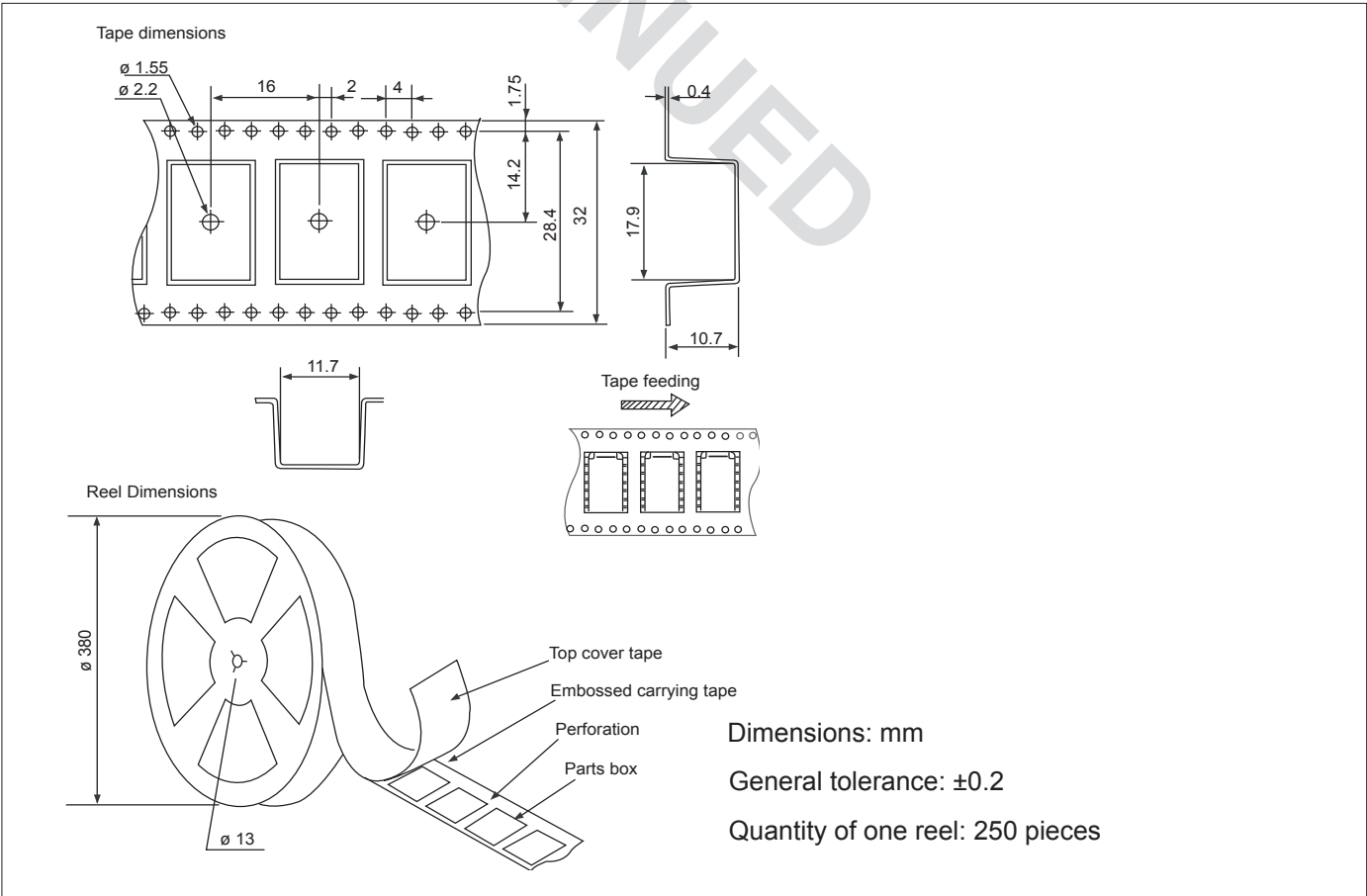
● PC board mounting hole layout (TOP VIEW)

FTR-B2 Series

RECOMMENDED CONDITION (Temperature Profile)



PACKAGING



RoHS Compliance and Lead Free Relay Information

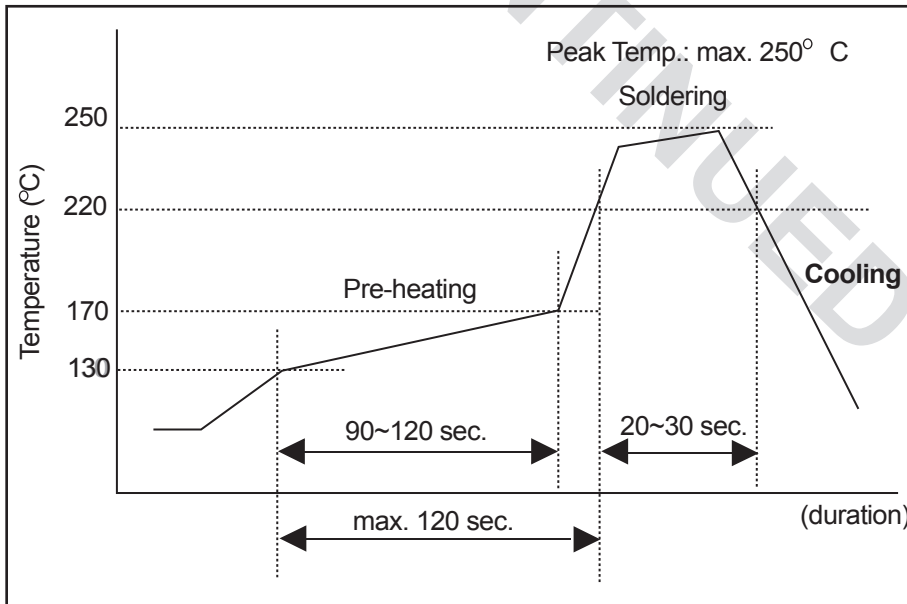
1. General Information

- 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 leaded relays (for lead-free sample, etc.) please consult with area sales office. We will ship leaded relays as long as the leaded 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.

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