

AUTOMOTIVE RELAY

1 POLE x 2 – 12A (28VDC)

(For 24V battery automotive applications)

FBR572, 582 Series

■ FEATURES

- Two independent relays mounted in a single package
- High current contact capacity
(carrying current: 40A/2 minutes, 30A/1 hour)
- Suitable for controlling 24V motors in trucks and other large vehicles
- High heat resistance and extended operating voltage
- Two types of contact gap
(FBR572: 0.8 mm, FBR582: 1.4 mm)
- RoHS compliant



■ PARTNUMBER INFORMATION

[Example] FBR572 N D24 W1 - **
 (a) (b) (c) (d) (e)

(a)	Relay type	FBR572 : FBR572 Series (contact gap 0.8mm) FBR582 : FBR582 Series (contact gap 1.4mm)
(b)	Enclosure	N : Plastic sealed type
(c)	Coil rated voltage	D24 : 24 VDC Coil rating table at page 3
(d)	Contact material	W1 : Silver-tin oxide indium Y : Silver-tin oxide
(e)	Special type	To be assigned custom specification

Actual marking does not carry the type name "FBR".
 E.g.: Ordering code: FBR572ND24-W1 Actual marking: 572ND24-W1

FBR572, 582 Series

■ SPECIFICATIONS

Item		FBR572	FBR582
Contact data	Configuration	1 form C x 2 (SPDT x 2)	
	Material	Silver-tin oxide indium (-W1 type) Silver-tin oxide (-Y type)	
	Voltage drop	Maximum 100 mV at 1A, 12VDC	
	Contact rating	28VDC, 12A (locked motor load) 28VDC, Inrush 15A, break 2.5A (motor free load)	
	Max. carrying current	40A / 2 minutes (25°C, 100% rated coil voltage)	
	Max. inrush current (reference)	60A	
	Max. switching voltage (reference)	28VDC	32VDC
	Max. switching current (reference)	12A	14A
	Min. switching load (reference)*	6VDC, 1A	
Life	Mechanical	Min. 10 x 10 ⁶ operations	Min. 1 x 10 ⁶ operations
	Electrical	Min. 100 x 10 ³ operations (locked motor load) Min. 500 x 10 ³ operations (motor free load)	Min. 100 x 10 ³ operations (locked motor load)
Coil data	Operating temperature range	-40°C to +85°C (no frost)	
	Storage temperature range	-40°C to +100°C (no frost)	
Timing data	Operate (at nominal voltage)	Max. 10 ms	
	Release (at nominal voltage)	Max. 5 ms	
Others	Vibration resistance	Misoperation	10 to 200Hz acceleration 44m/s ² (4.5G), constant acceleration
		Endurance	
	Shock resistance	Misoperation	100m/s ² (11 ± 1ms)
		Endurance	1,000m/s ² (6 ± 1ms)
	Weight	Approximately 18 g	

*: Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

! Care shall be taken on the heat generated on PC board when maximum carrying current exceeds 10A. Please perform the confirmation test with actual conditions.

FBR572, 582 Series

■ COIL DATA

Series	Coil Code	Rated Coil Voltage (VDC)	Coil Resistance $\pm 10\%$ (Ω)	Must Operate Voltage* (VDC)	Must Release Voltage* (VDC)
FBR572	D24	24	384	14.4 (at 20°C)	1.9 (at 20°C)
				18.0 (at 85°C)	2.4 (at 85°C)
FBR582	D24	24	170	14.4 (at 20°C)	2.0 (at 20°C)
				18.0 (at 85°C)	2.6 (at 85°C)

Note: All values in the table are valid for 20°C and zero contact current unless otherwise specified.

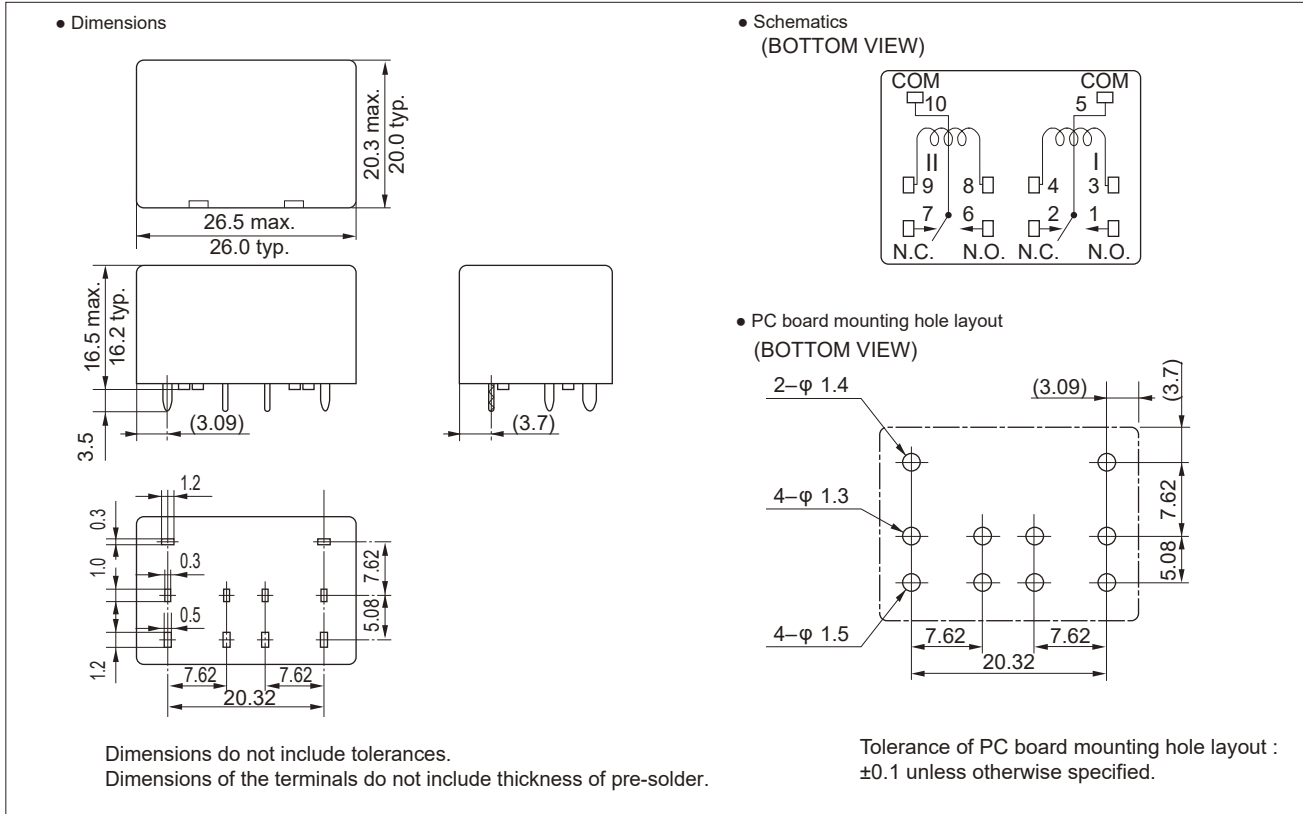
*: Specified operated values are valid for pulse voltage.

! Please use at rated coil voltage. Please refer to characteristic data and set up adequate voltage in case of use at over voltage.

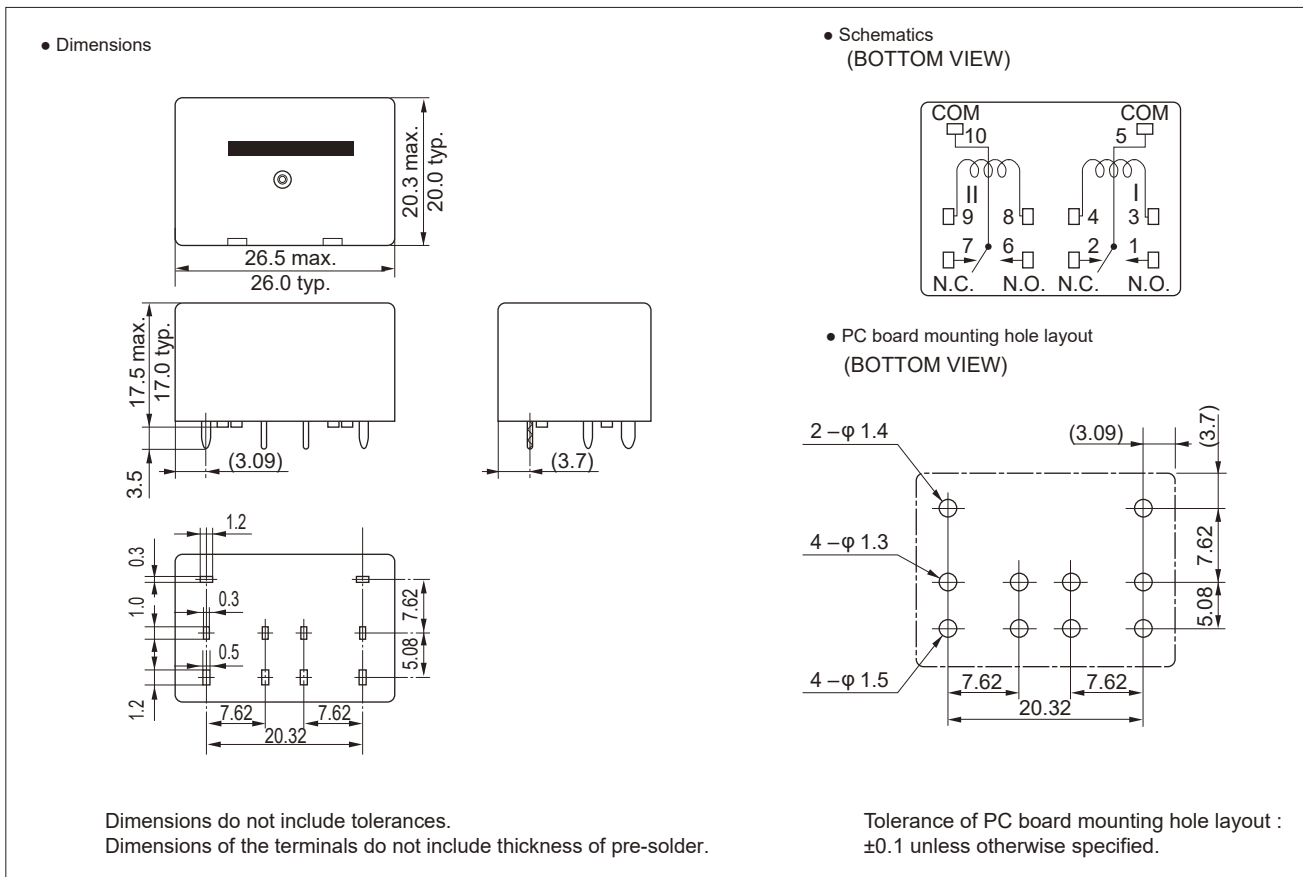
FBR572, 582 Series

● DIMENSIONS

[FBR570]



[FBR580]

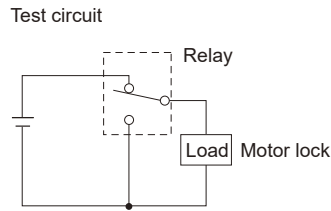
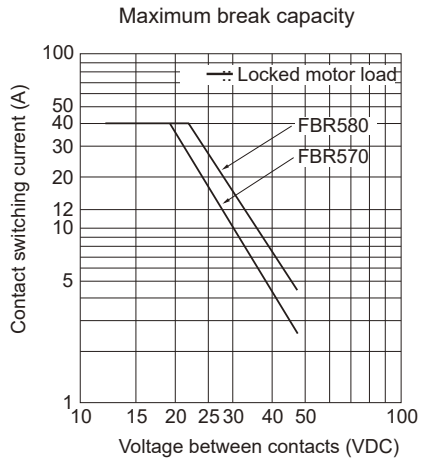


(): Reference Unit: mm

FBR572, 582 Series

● CHARACTERISTIC DATA

(Characteristic data is not guaranteed value but measured values of samples from production line)



Life Test

(1) Motor lock

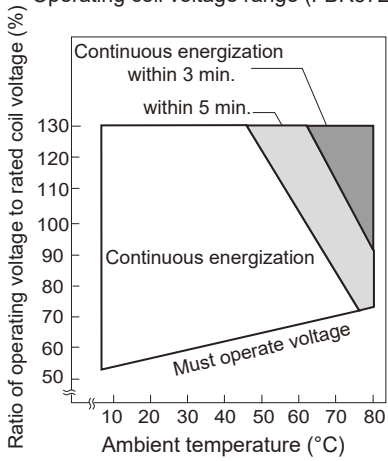
Test Item	Test Circuit	Current Wave Form
12V 28VDC Motor lock 100,000 operations minimum Contact material: Silver tin oxide indium		

(2) Motor free

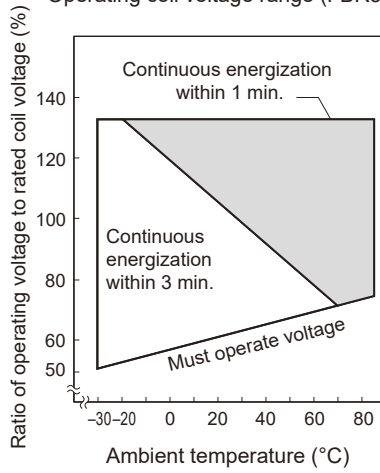
Test Item	Test Circuit	Current Wave Form
Inrush 15A, Break 2.5A 28VDC Motor free 500,000 operations minimum Contact material: Silver tin oxide indium		

FBR572, 582 Series

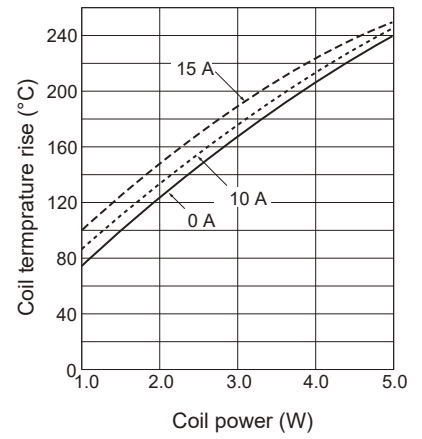
Operating coil voltage range (FBR572)



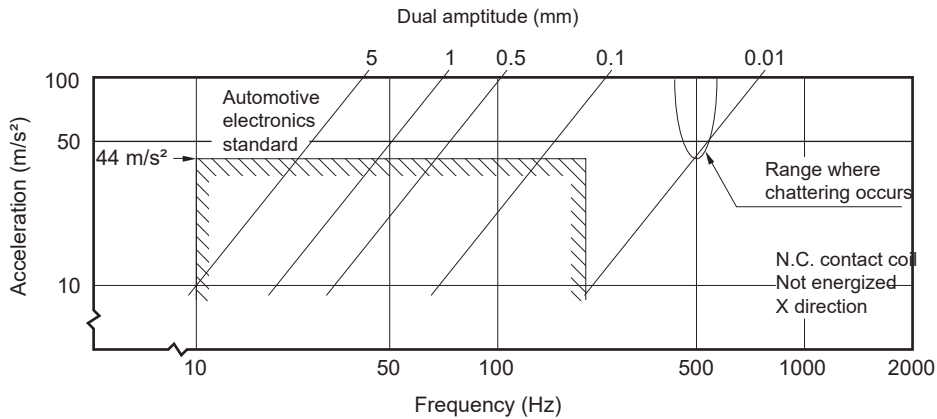
Operating coil voltage range (FBR582)



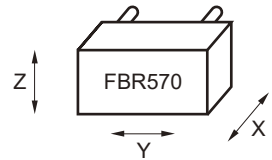
Operating Coil temperature rise



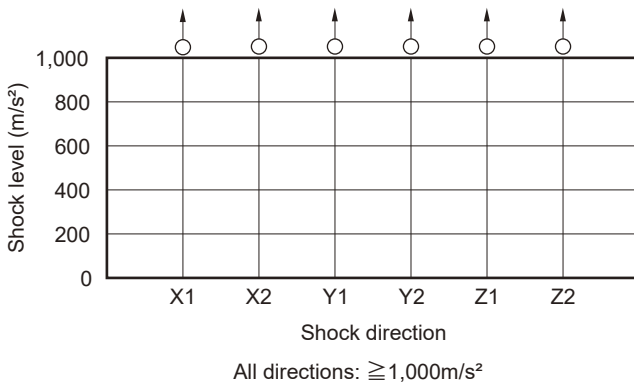
Vibration resistance characteristics



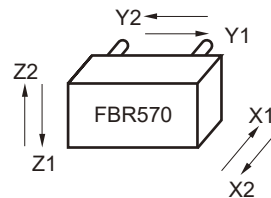
Frequency: 10 to 2000 Hz
 Acceleration: 100 m/s² max.
 Direction of vibration;
 See diagram below
 Detection level:
 chatter > 1ms



Shock resistance characteristics

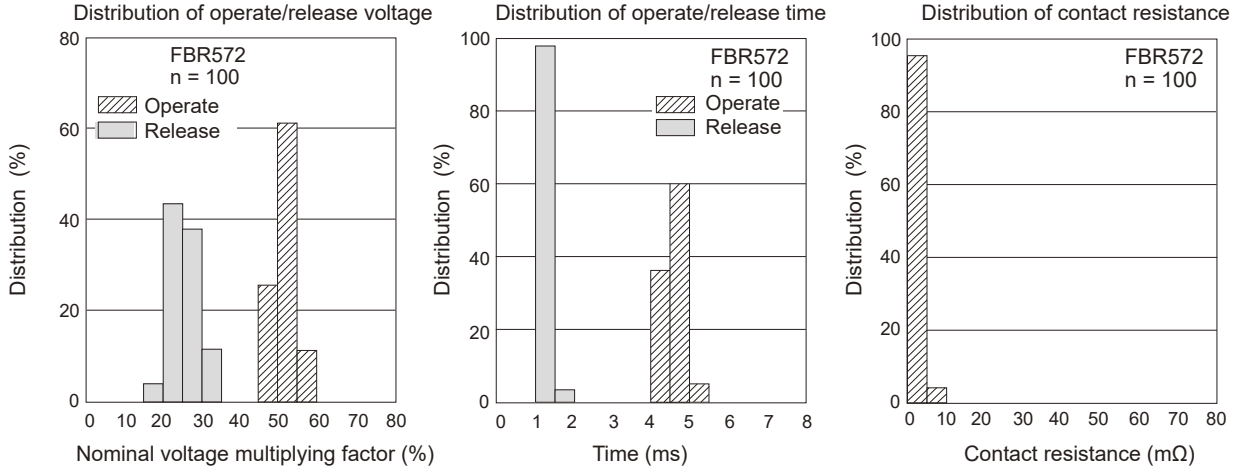


Shock application time: 61ms, half-sine wave
 Test condition: Coil energized and de-energized
 Shock direction: See diagram below
 Detection level: chatter > 1ms

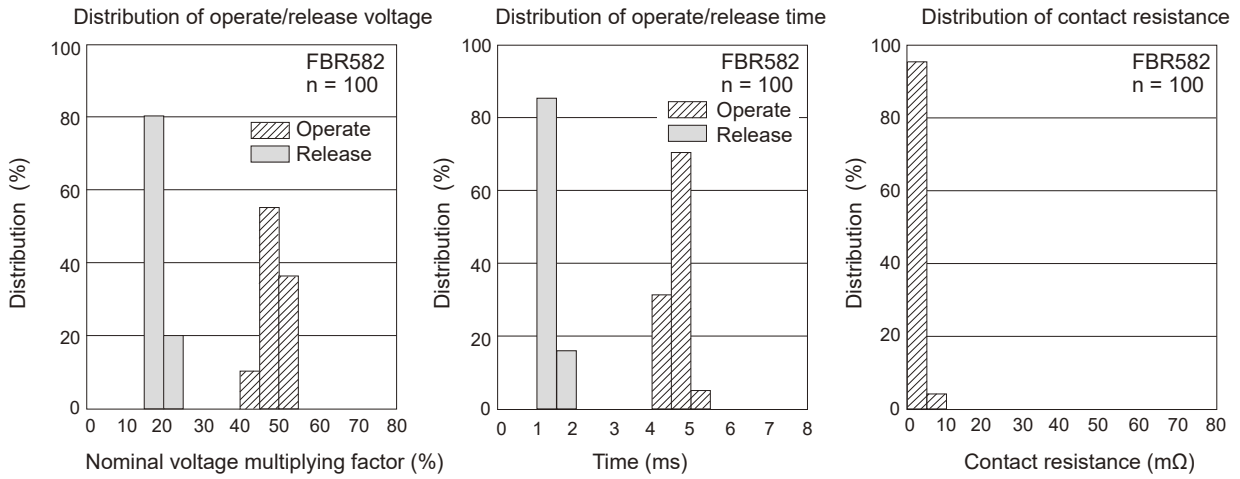


FBR572, 582 Series

[FBR572]



[FBR582]



FBR572, 582 Series

CAUTIONS

- All values mentioned in this datasheet are provided under ideal conditions. Please perform the confirmation test before actual use.
- Reflow soldering is prohibited for standard type.
- Do not use relays in the atmosphere with sulfide gas, chloride gas or nitric oxide. Contact resistance may increase.
- Do not use silicon or silicon-containing product or materials near relays. It may cause contact failure.

GENERAL INFORMATION

1. ROHS Compliance

- All relays produced by FCL Components are compliant with RoHS directive 2011/65/EU, including commission delegated directive 2015/863.

2. Recommended lead free solder condition

- Lead free solder plating on relay terminals is Sn-3.0Ag-0.5Cu, unless otherwise specified. This material has been verified to be compatible with PbSn assembly process.
- Recommended solder for assembly: Sn-3.0Ag-0.5Cu.

Flow Solder Condition:

Pre-Heating: Maximum 120°C within 90 sec.

Soldering: Dip within 5 sec. at 255°C±5°C solder bath

Relay must be cooled by air immediately after soldering

Solder by Soldering Iron:

Soldering Iron: 30-60W

Temperature: Maximum 350-360°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, unless otherwise indicated.

4. Tin Whiskers

- Dipped SnAgCu solder is known as presenting a low risk to tin whisker development. No considerable length whisker was found by our in house test.

Contact

Japan

FCL COMPONENTS LIMITED
Shinagawa Seaside Park Tower
12-4, Higashi-shinagawa 4-chome,
Tokyo 140 0002, Japan
Tel: +81-3-3450-1682
Email: fcl-contact@cs.fcl-components.com

North and South America

FCL COMPONENTS AMERICA, INC.
2055 Gateway Place Suite 480,
San Jose, CA 95110 USA
Tel: +1-408-745-4900
Email: fcai.components@fcl-components.com

Europe

FCL COMPONENTS EUROPE B.V.
Diamantlaan 25
2132 WV Hoofddorp, Netherlands
Tel: +31-23-556-0910
Email: info.fceu@cs.fcl-components.com

Asia Pacific

FCL COMPONENTS ASIA PTE LTD.
No. 20 Harbour Drive, #07-01B
Singapore 117612
Tel: +65-6375-8560
Email: fcalfcl-components.com

China

FCL COMPONENTS (SHANGHAI) CO., LTD.
Unit 1105, Central Park - Jing An,
No.329 Heng Feng Road, Shanghai 200070,
China
Tel: +86-21-3253 0998
Email: fcsh@fcl-components.com

Web: www.fcl-components.com/en/

© 2024 FCL Components Limited. All rights reserved. All trademarks or registered trademarks are the property of their respective owners.

FCL Products are intended for general use, including without limitation, in personal, household and office environments, in buildings and for ordinary use in the industry. FCL Products are not intended to be used in applications where extremely high safety is required ("High Safety Required Applications"), such as, but not limited to, applications in nuclear facilities, in aircraft automatic flight control, in air traffic control, in mass transit system control, in missile launch system, in weapon systems, in medical equipment for life support or any application involving a direct serious risk of physical injury or death.

Please do not use FCL Products without securing the sufficient safety and reliability required for the High Safety Required Applications. In addition, FCL shall not be liable against the customer and/or any third party for any claims or damages arising in connection with the use of FCL Products in the High Safety Required Applications.

FCL warrants that its Products, if properly used and services, will conform to their specification and will be free from defects in material and workmanship for twelve months from delivery.

The implied warranties of merchantability and fitness for a particular purpose and all other warranties, representations and conditions, express or implied by statute, trade usage or otherwise, except as set forth in this warranty, are excluded and shall not apply to the Products delivered.

The contents, data and information in this datasheet are provided by FCL Components Limited as a service only to its user and only for general information purposes. The use of the contents, data and information provided in this datasheet is at the users' own risk.

FCL has assembled this datasheet with care and will endeavor to keep the contents, data and information correct, accurate, comprehensive, complete and up to date.

FCL Components Limited and affiliated companies do however not accept any responsibility or liability on their behalf, nor on behalf of its employees, for any loss or damage, direct, indirect or consequential, with respect to this datasheet, its contents, data, and information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof.

Nor do FCL Components Limited and affiliated companies accept on their behalf, nor on behalf of its employees, any responsibility or liability with respect to these datasheets, its contents, data, information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof. Rev. February 1, 2024.
