

BRADY L-2588-25B NFC ON-METAL LABEL

TDS No. L-2588-25B

Effective Date: 04/04/2023

Description:

Modular NFC on-metal label for high volume applications to any surface material, including metal.

Details:

Material Specifications:

Face Material	Printable white synthetic face layer
Adhesive	Permanent adhesive
Finishing	White
Antenna	Aluminium
IC to antenna construction	Chip bonded to antenna using Anisotropic Conductive Film adhesive
Tag base material	PET

General Specifications:

Applications	Modular NFC on-metal label for high volume applications to any surface material, including metal.
Print Technology	Thermal transfer print, including RFID encoding.
Recommended Ribbon	Brady Series R7961
Operating Temperature	-35°C to +85°C
Regulatory/Agency Approvals	For information on the Weee-RoHS compliance status for a Brady Product go to one of the following websites: In Canada: www.bradycanada.ca/weee-rohs In Europe: www.bradyeurope.com/rohs In Japan: www.brady.co.jp/products/labelsuse/rohs All other regions: www.bradyid.com/weee-rohs

Electronic Specifications:

IC / Chip	NXP NTAG213
Operating Frequency	13,56 MHz
Supported Standard	ISO/IEC 14443A
User Memory	144 Bytes

Read Range:

PERFORMANCE PROPERTIES	TYPICAL RESULTS
NFC Read range with mobile phone	up to 15mm
NFC Read range with fixed reader	up to 20mm

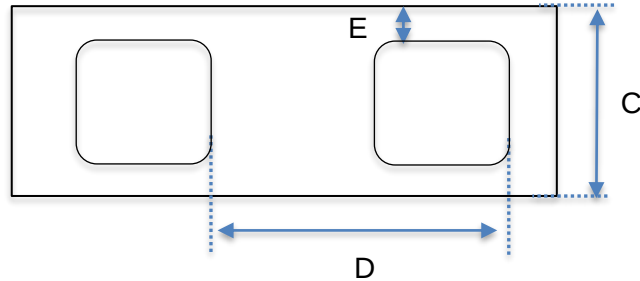
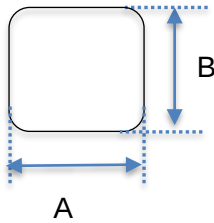
Notes: Read ranges are measured in laboratory environment and there can be some variation in real application. Also used surface material and IC type might affect the read range.

Label Dimensions:

Metric (mm)		
Width	Length	Thickness Total (with chip)
25.00	25.00	0.45

Label Mass (including antenna and chip)

Label Mass (g)
0.48

Dimensions (mm)

		Length (mm)
A	Tag Width	25.00
B	Tag Length	25.00
C	Web Width	35.00
D	Tag to Tag Pitch	57.15
E	Web edge to label	5.00

Delivery and Packaging Specifications:

RFID labels per roll	500
Rolls in package	1
Winding	RFID labels out
Inspection and delivered tags	100% inspected, 500 good RFID labels per roll
Bad Tags Marked	Yes

Label Performance:

Performance properties tested on samples printed with the Brady Series R7961 ribbons. Printed samples were laminated to aluminum panels and allowed to dwell 24 hours before exposure to the indicated environments.

ENVIRONMENTAL RESISTANCE			
PERFORMANCE PROPERTIES	TEST METHODS	EFFECT TO PRINT IMAGE	EFFECT TO CHIPS
High Service Temperature	30 days at temperatures 85°C, 100°C, and 120°C	No visible effect to label at 85°C and 100°C; slight discoloration at 120°C but label is still functional	Readable
Low Service Temperature	30 days at -80°C	No visible effect	Readable
Short Term High Service Temperature	5 minutes at 140°C and 160° C	Very slight shrinkage at 140°C, label destroyed and shrunk at 160°C	Readable
Humidity Resistance	30 days at 37°C, 95% relative humidity	No visible effect	Readable
UV Light Resistance	30 days in Xenon Test Chamber	No visible effect	Readable
Weatherability	ASTM G155, Cycle 1 30 days in QUV accelerated weathering tester	No visible effect	Readable
Abrasion Resistance	Taber Abraser, CS10 grinding wheels, 250 g/arm (Fed. Std. 191A, Method 5306), 150 cycles	Print still legible after 50 cycles, hardly legible after 100 cycles and not legible after 150 cycles	No effect to chip. Chip still readable after 150 cycles

Salt Fog Resistance	ASTM B117 30 days in 5% salt fog solution chamber	No visible effect	Readable
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PERFORMANCE PROPERTIES		CHEMICAL RESISTANCE	
Samples were printed with the Brady Series R7961. Samples were laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Testing was conducted at room temperature and consisted of 30 minutes immersions in the specified test fluid. After immersion, the samples were removed from the test fluid and the printed image rubbed 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of the print for each sample.			
CHEMICAL REAGENT	EFFECT TO PRINT WITHOUT RUB	EFFECT TO PRINT WITH RUB	EFFECT TO CHIPS
Ethanol	1	1	Readable
Toluene	1	5	Readable
Isopropyl Alcohol	1	4	Readable
DOT 4 Brake Fluid	1	5	Readable
Skydrol® 500B-4	1	5	Readable
Hydrochloric Acid 37%	1	1	Readable
Sodium Hydroxide 10%	1	1	Readable

Rating Scale:

1= no visible effect

2= slight smear or print removal, detectable but minimal smear

3= moderate smear or print removal (print still legible)

4= severe smear or print removal (print illegible or just barely legible)

5= complete print and/or topcoat removal

NP= print removed prior to rub

Installation Instructions:

- 1) Bond strength can be improved with firm application pressure.
- 2) Always ensure clean surface for obtaining the maximum bond strength.
- 3) During attachment to the identified item, please avoid touching the background adhesive. If the location on the asset needs to be changed, please use a new tag instead of re-placing the used one; the adhesion will suffer from the re-placement.
- 4) Minimum bending diameter is defined to be 50mm. Do not bend the label above the limit. Never touch on the location of the IC. IC chip is sensitive electrical component and can be damaged if unexpected pressure is applied on the chip.

Shelf Life:

Shelf life is one year from the date of receipt for this product as long as this product is stored in its original packaging in an environment below 20° C (+68°F) and 50% RH. It remains the responsibility of the user to assess the risk of using this product. We encourage customers to develop testing protocols that will qualify a product's fitness for use in their actual application.

References:

ASTM: American Society for Testing and Materials (U.S.A.)

All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units

Note: All values shown are averages and should not be used for specification purposes.

Test data and test results contained in this document are for general information only and shall not be relied upon by Brady customers for designs and specifications, or be relied on as meeting specified performance criteria. Customers desiring to develop specifications or performance criteria for specific product applications should contact Brady for further information.

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