

Packing and Order Information

GENERAL INFORMATION

Vishay offers LEDs and 7 Segment Displays with several packing options.

DEVICE	SERIES	BULK	TAPE	BLISTER TAPE	TUBE
7-Segment Display	TD..				x
TELUX	TLW.. VLW..				x
PLCC-2, PLCC-3, PLCC-4	VLM.3..			x	
PLCC-2 Plus	VLM.51..			x	
Reverse Gullwing	VLR..			x	
Pin Hole LED	TL.. VL..	x	x		
Mini	VLM.2..			x	
0603 LED	TLM.10., TLM.11. VLM.10., VLM.11., VLM.13.			x	
0402 LED	VLM.15..			x	
Little Star	VLM.7..			x	

All packing options are classified in terms of brightness (standard), color (optional), or forward voltage (optional). Reference for parameter selection codes is the chapter "Classification of Components", label code is SEL.

Barcode Label Format

- Type: PTC - Assembly Location Code
- SEL - Parameter Selection Code
- DC - Date Code
- BN - Batch Number
- PCS - Quantity
- MN - Machine number

Drypacks

Blister tapes are packed in anti-humidity aluminium bags to prevent the products from moisture absorption during transportation and storage. Each bag contains a desiccant with moisture indicators. In cases of moisture absorption, the indicators change their color from blue to pink.

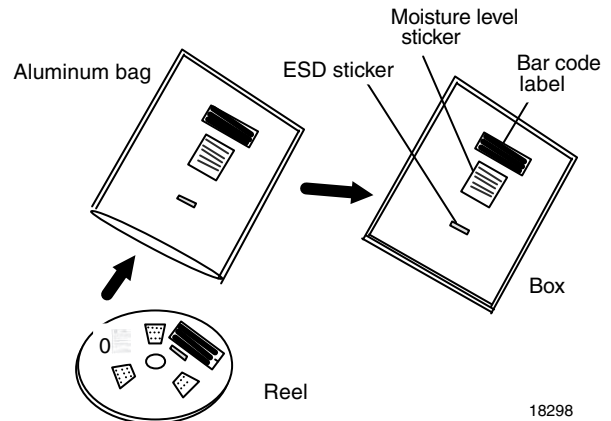
Dry box storage is recommended to prevent the parts from moisture absorption. The following conditions should be preserved if dry boxes are not available.

Storage condition (example for JEDEC level 2, see table 2 "Assembly Instructions"):


- max. 1 year:
 - Temperature: 10 °C to 30 °C
 - Humidity: 60 % RH max.
- unlimited:
 - Temperature: 10 °C to 30 °C
 - Humidity: 20 % RH max.

In case of moisture absorption the device will recover to the former condition by drying under the following recommended conditions:

192 h at 40 °C + 5 °C and < 5 % RH



Example:



CAUTION
This bag contains
MOISTURE-SENSITIVE DEVICES

LEVEL
2

1. Shelf life in sealed bag: 12 months at < 40 °C and < 90 % relative humidity (RH)
2. After this bag is opened, devices that will be subjected to infrared reflow, vapor-phase reflow, or equivalent processing (peak package body temp. 220 °C) must be:
 - 2a. Mounted within 1 year at factory condition of ≤ 30 °C/60 % RH or
 - 2b. Stored at ≤ 20 % RH
3. Devices require baking before mounting if:
Humidity Indicator Card is > 20 % when read at 23 °C ± 5 °C or 2a. or 2b. are not met.
4. If baking is required, devices may be baked for:
192 hours at 40 °C + 5 °C/- 0 °C and < 5 % RH (dry air/nitrogen) or
96 hours at 60 °C ± 5 °C and < 5 % RH for all device containers or
24 hours at 100 °C ± 5 °C not suitable for reels or tubes

Bag Seal Date: _____
(If blank, see barcode label)

Note: Level defined by EIA JEDEC Standard JESD22-A112

19148-1

Fan Fold Packing

Fan fold box is the standard containment for reel, tube, and bulk. Label format is identical to packing options as described above. Packing might contain tubes or reels with several parameter selection codes. In this case the label code of fan fold packing is SEL000.

Exception:

TELUX fan fold boxes contain one SEL code only.

Minimum Order Quantity

Packing Options describe the smallest physical packing unit. Vishay Sales representatives can provide information on the Minimum Order Quantity per type.

MISSING COMPONENTS

Up to 3 consecutive components may be missing if the gap is followed by at least 6 components. A maximum of 0.5 % of the components per reel quantity may be missing. At least 5 empty positions are present at the start and the end of the tape to enable tape insertion.

Tensile strength of the tape: ≥ 15 N

Pulling force in the plane of the tape, at rectangular to the reel: ≥ 5 N

Note

- Shipment in fan-fold packages are standard for radial taped devices.
Shipments in reel packing are only possible if the customer guarantees the removal of empty reels.
According to a German packaging decree (Verpackungsverordnung) we are not able to accept the return of reels.

SPECIFICATION OF PACKING OPTIONS

Pin Hole LED (TL..., VL...-series)

Reel

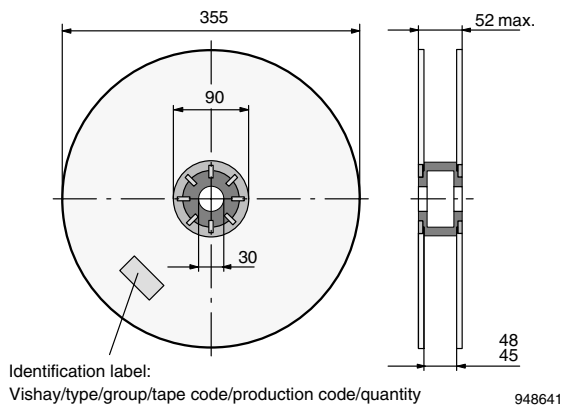


Fig. 1 - Reel Dimensions

Tape

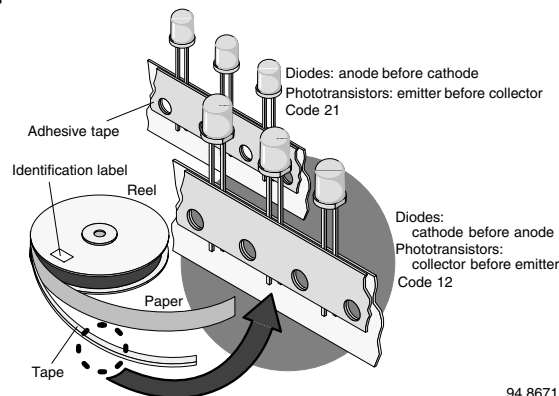


Fig. 2 - LED in Tape

PACKAGE/PACKAGING	QTY	
7-Segment Display	7 mm	500 pcs
	10 mm	400 pcs
	13 mm	400 pcs
	Clock Module	384 pcs
TELUX	-	2100 pcs
PLCC-2, PLCC-3, PLCC-4	GS08	7500 (5 x 1500) pcs
	GS18	8000 pcs
PLCC-2 Plus	GS08	1000 pcs
PLCC-2 Ultraviolet	GS08	2000 pcs
RGB	-	2050 pcs
Reverse Gullwing	GS08	2000 pcs
	GS18	8000 pcs
Mini	GS08	3000 pcs
0603 LED	GS08	3000 pcs
0402 LED	GS08	9000 (3 x 3000) pcs
Little Star	GS08	2000 pcs
1.8 mm, 3 mm	Bulk	5000 pcs
	Reel	10 000 (5 x 2000) pcs
	Ammopack	10 000 (5 x 2000) pcs
5 mm	Bulk	4000 pcs
	Reel	5000 (5 x 1000) pcs
	Ammopack	5000 (5 x 1000) pcs
Side View	Bulk	2000 pcs
	Ammopack	5000 (5x1000) pcs

Ammopack

The tape is folded in concertina arrangement and laid in the cardboard box.

If the components are required with the cathode before the anode (figure 4), the start of the tape should be taken from the side of the box marked "-". If the components are required with the anode before cathode (figure 7), the tape should be taken from the side of the box marked "+".

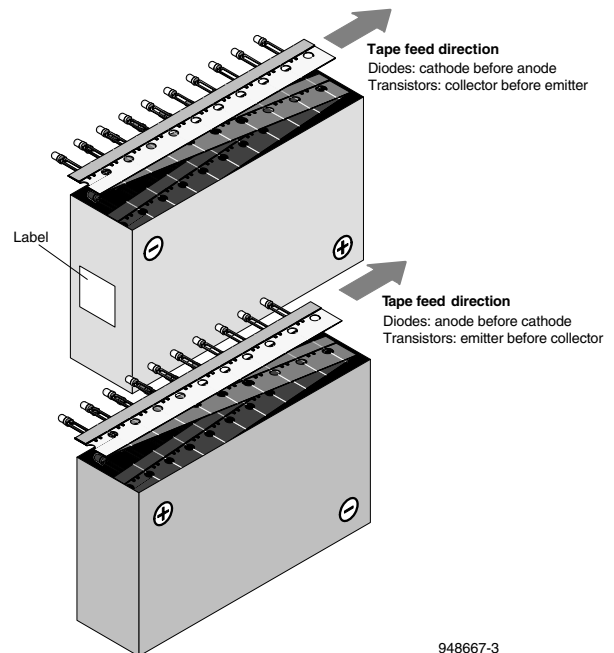


Fig. 3 - Tape Direction

OPTIONS

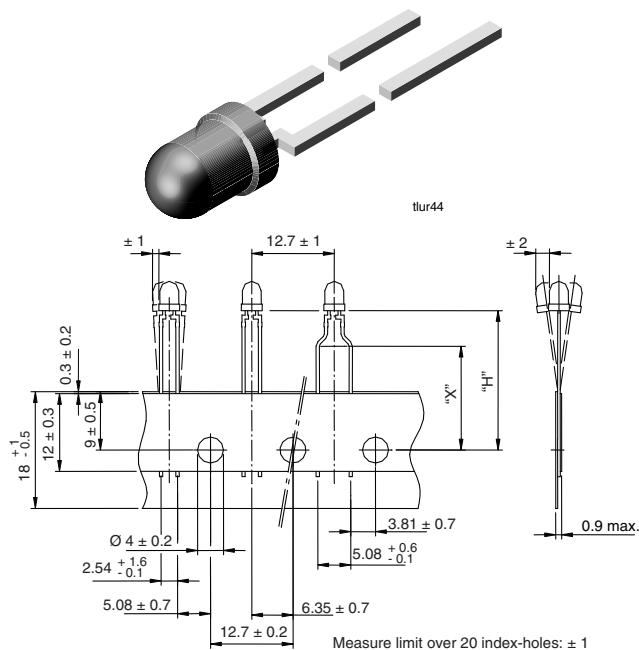
TAPE DIMENSIONS FOR Ø 3 mm STANDARD PACKAGES

Available Package Variations: 12, Z, 21

OPTION	DIMENSION "H"	DIMENSION "X"	PREFERENCE
AS	17.3 ± 0.5		Standard
VS	18.5 ± 0.5		
KS	19.7 ± 0.5		
BS	20.0 ± 0.5		
LS	21.0 ± 0.5		
CS	22.0 ± 0.5		
MS	25.5 ± 0.5		Standard
BT	20.0 ± 0.5	16.0 ± 0.5	
DT	21.0 ± 0.5	16.0 ± 0.5	
NT	21.5 ± 0.5	16.0 ± 0.5	
GT	24.0 ± 0.5	16.0 ± 0.5	
HT	24.0 ± 0.5	14.5 ± 0.5	
MT	25.5 ± 0.5	16.0 ± 0.5	

Explanation:

- 12 - cathode leaves first
- 21 - anode leaves first
- Z - ammpack



Quantity per:	Reel (Mat.-no. 1764)
	2000

21885

Fig. 4 - Tape Dimensions Ø 3 mm Devices

ORDER CODES

The type designation of the device is extended by tape option codes.

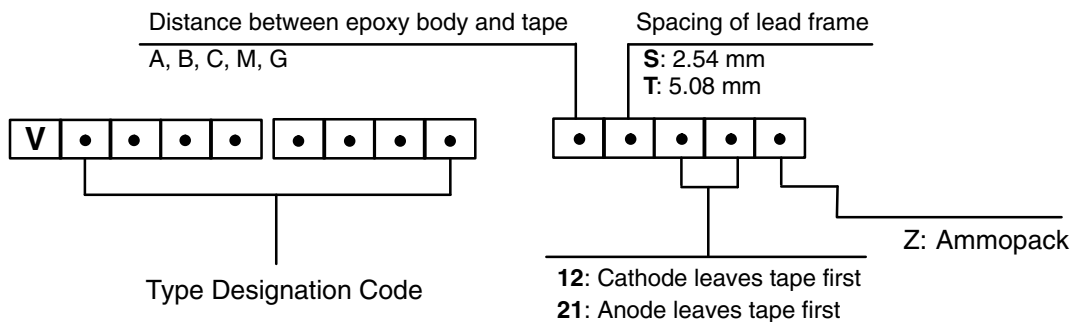


Fig. 5 - Taping Code

Example: VLME3100-GS08

TLHE4200-AS21

TLHE4200-ASZ

optional since 1999:

VLMS3100-GS18

Note

- The new nomenclature for ammpack is ASZ only, without suffix for the LED orientation. The carton box has to be turned to the desired position: "+" for anode first, or "-" for cathode first. AS12Z and AS21Z are still valid for already existing types, BUT NOT FOR NEW DESIGN.

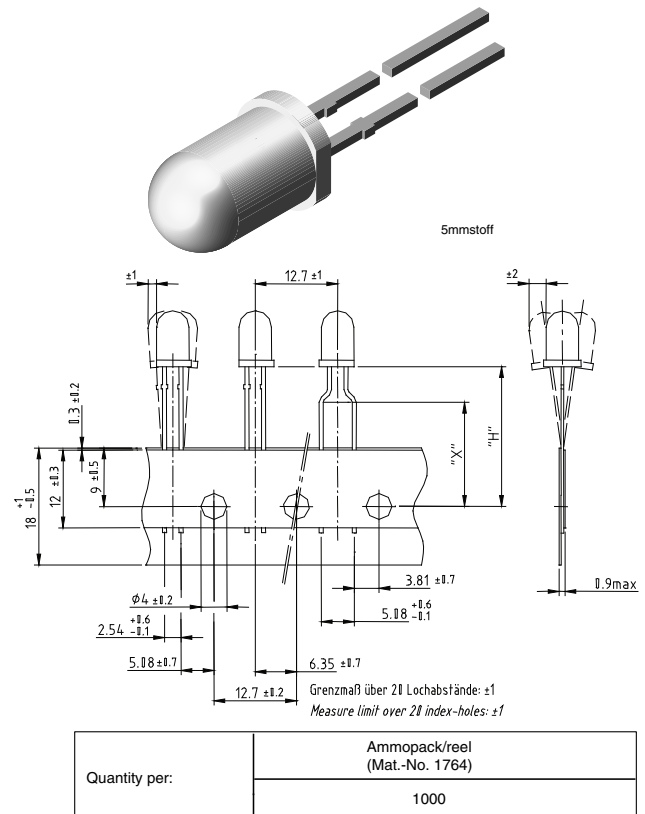
TAPE DIMENSIONS FOR Ø 5 mm STANDARD PACKAGES

Available Package Variations: 12, Z, 21

OPTION	DIMENSION "H"	DIMENSION "X"	PREFERENCE
AS	17.3 ± 0.5		Standard
KS	19.7 ± 0.5		
LS	21.0 ± 0.5		
CS	22.0 ± 0.5		Standard
MS	25.5 ± 0.5		
BT	20.0 ± 0.5	16.0 ± 0.5	
DT	21.0 ± 0.5	16.0 ± 0.5	
NT	21.5 ± 0.5	16.0 ± 0.5	
GT	24.0 ± 0.5	16.0 ± 0.5	
HT	24.0 ± 0.5	14.5 ± 0.5	
MT	25.5 ± 0.5	16.0 ± 0.5	

Explanation:

- 12 - cathode leaves first
- 21 - anode leaves first
- Z - ammpack



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Fig. 6 - Tape Dimensions Ø 5 mm Devices

ORDER CODES

The type designation of the device is extended by tape option codes.

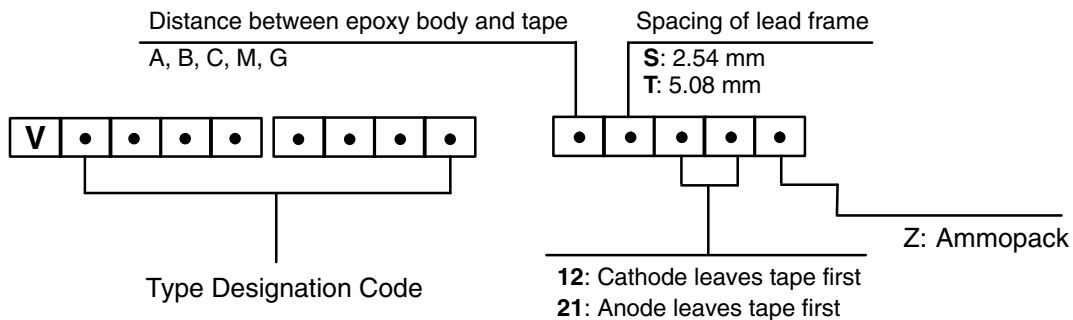


Fig. 7 - Taping Code

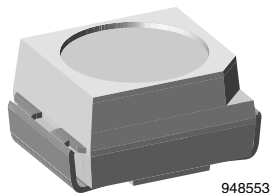
Example: VLME3100-GS08
 TLHE4200-AS21
 TLHE4200-ASZ
 optional since 1999:
 VLMS3100-GS18

Note

- The new nomenclature for ammpack is ASZ only, without suffix for the LED orientation. The carton box has to be turned to the desired position: "+" for anode first, or "-" for cathode first. AS12Z and AS21Z are still valid for already existing types, BUT NOT FOR NEW DESIGN.

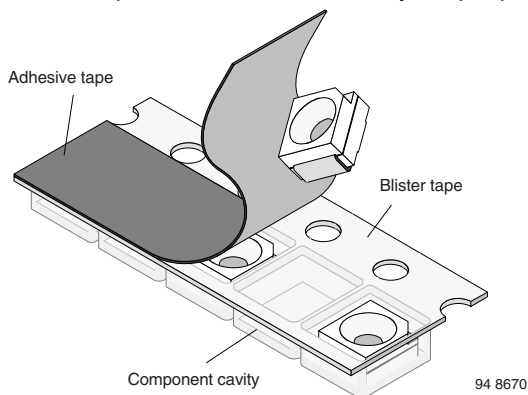


TAPE DIMENSIONS FOR PLCC-2, PLCC-3, PLCC-4 (VLM.3-SERIES)



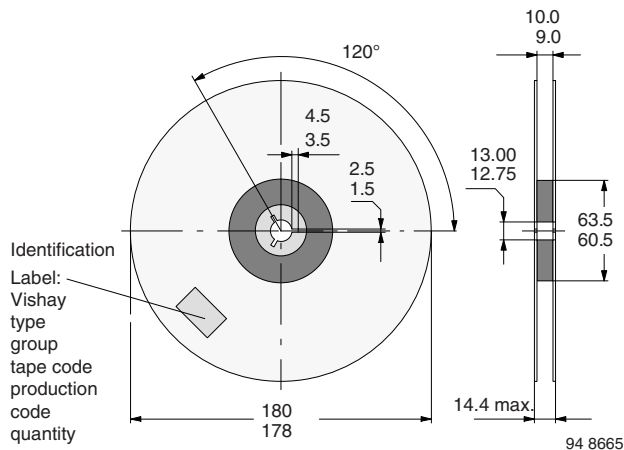
948553

Vishay's LEDs in SMD packages are available in an antistatic 8 mm blister tape (in accordance with DIN IEC 40 (CO) 564) for automatic component insertion. The blister tape is a plastic strip with impressed component cavities, covered by a top tape.



94 8670

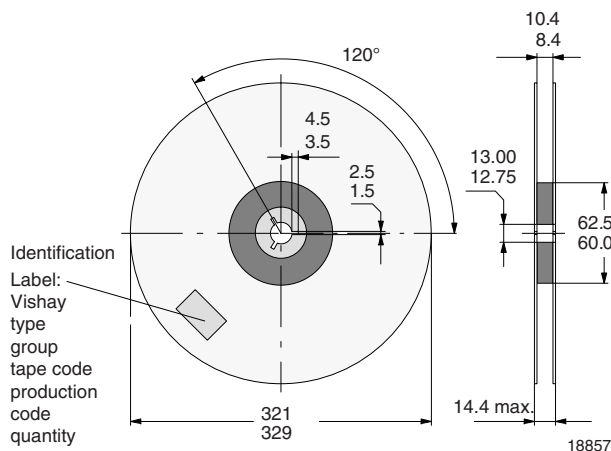
REEL PACKAGE DIMENSION IN MILLIMETERS FOR SMD LEDs, TAPE OPTION GS08 (= 1500 PCS.)



94 8665

Fig. 10 - Reel Dimensions - GS08

REEL PACKAGE DIMENSION IN MILLIMETERS FOR SMD LEDs, TAPE OPTION GS18 (= 8000 PCS.) PREFERRED



18857

Fig. 11 - Reel Dimensions - GS18

TAPING OF VLM.3..

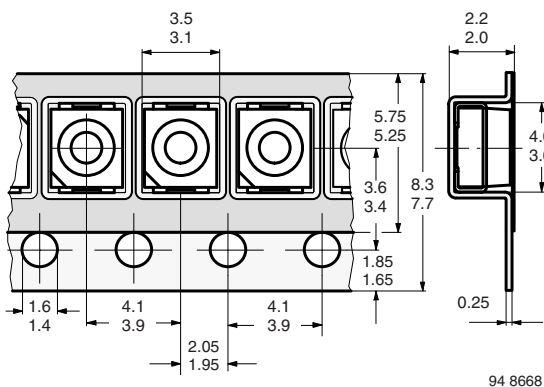


Fig. 8 - Tape Dimensions in mm for PLCC-2

TAPING OF VLMD3100

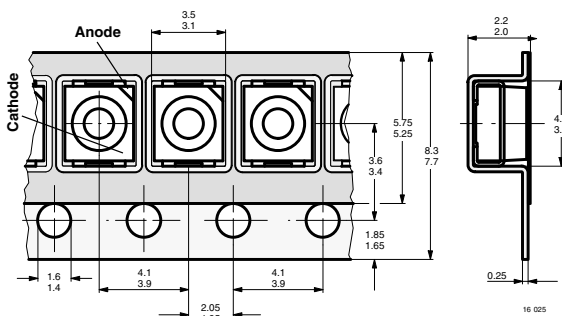
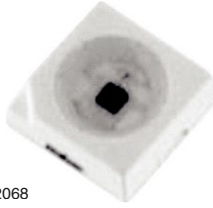


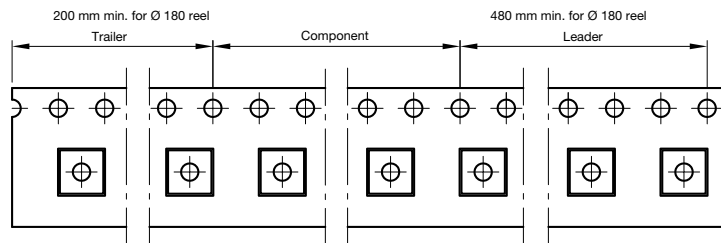
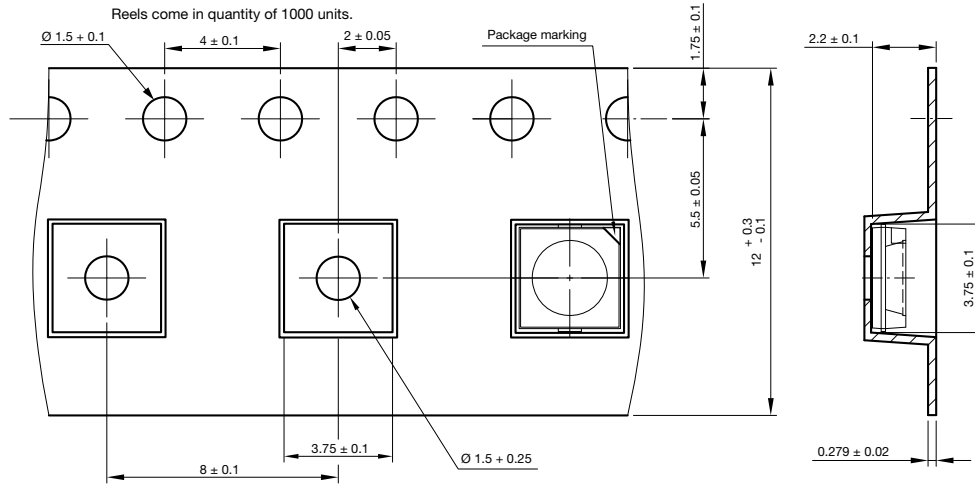
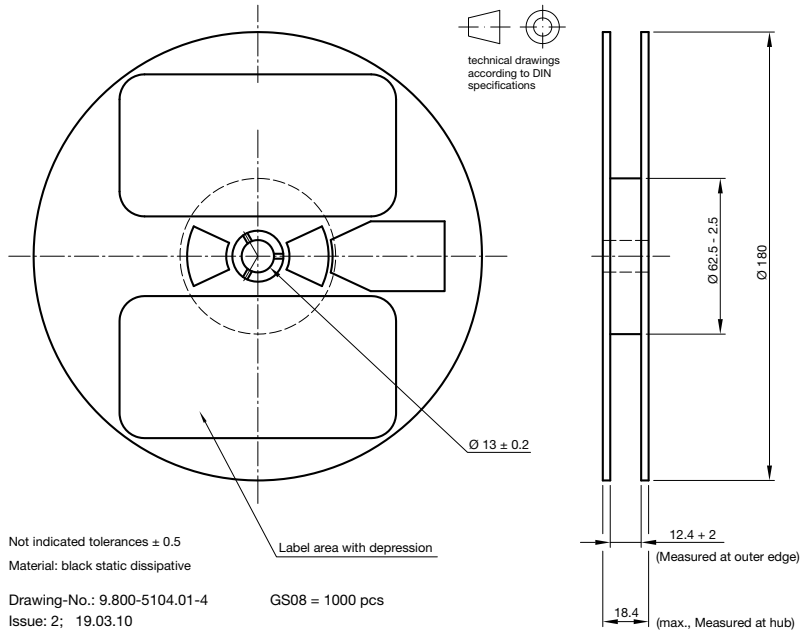
Fig. 9 - Tape Dimensions in mm for PLCC-2



TAPE DIMENSIONS FOR PLCC-2 PLUS



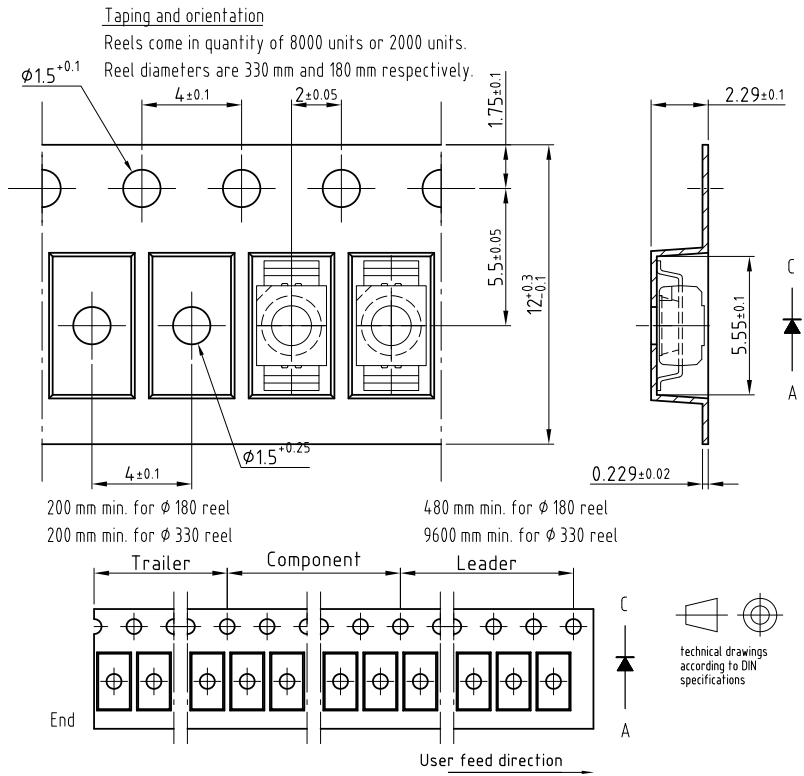
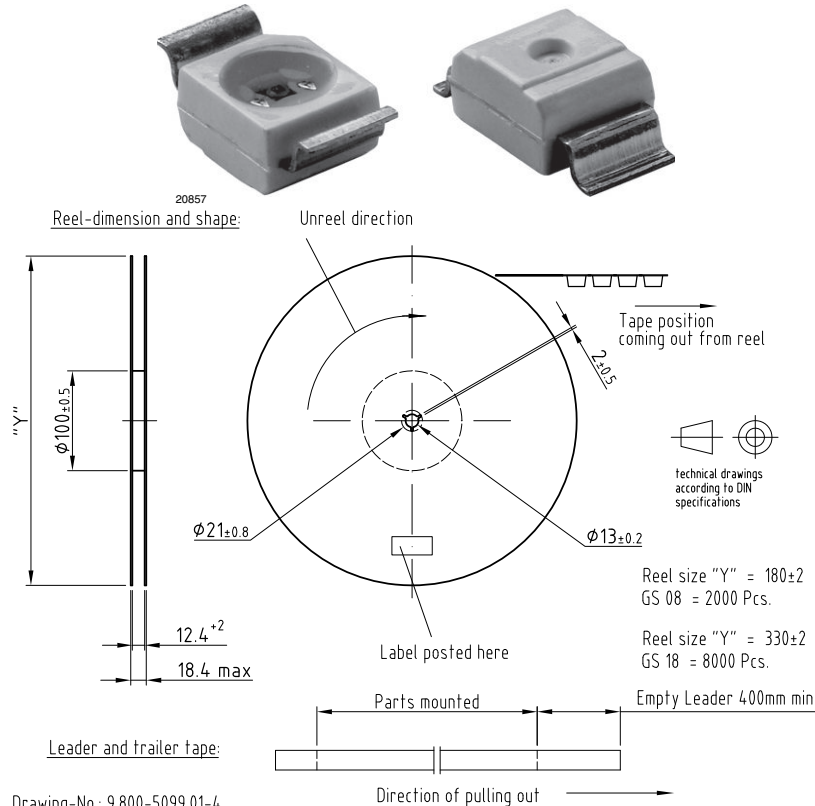
22068



Drawing-No.: 9.700-5348.01-4
Issue: 1; 01.03.10

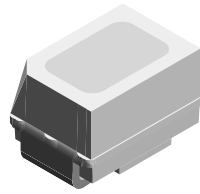


TAPE DIMENSIONS FOR REVERSE GULLWING

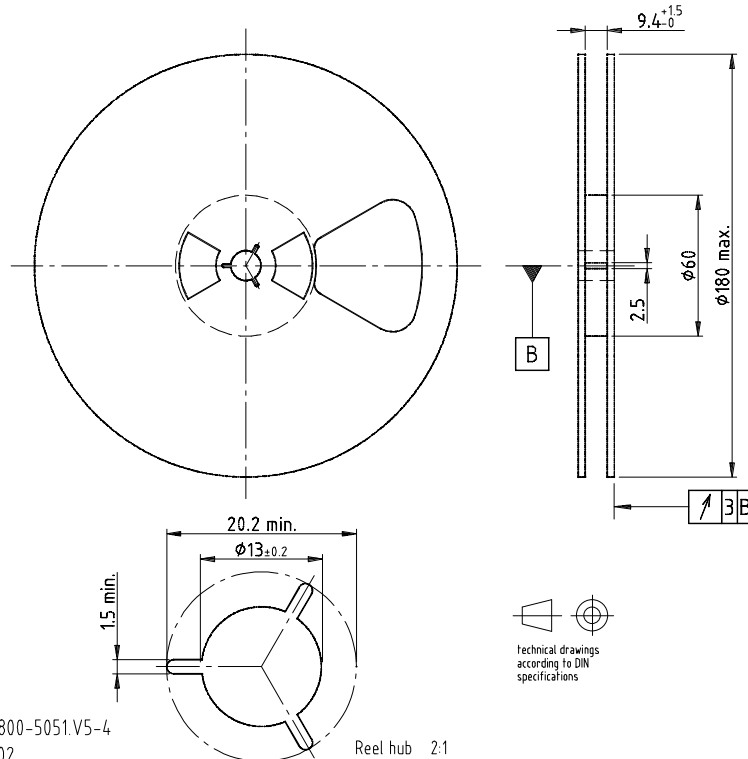




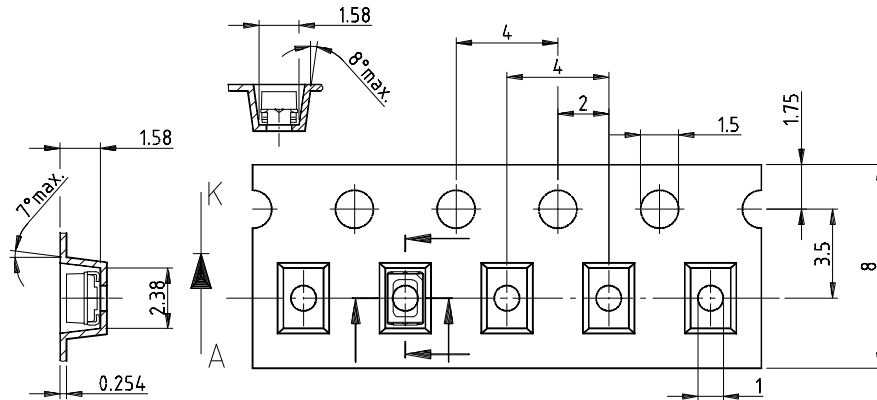
TAPE DIMENSIONS FOR MiniLEDs



19226



Drawing-No.: 9.800-5051.V5-4
Issue: 1; 25.07.02



Drawing-No.: 9.700-5266.01-4
Issue: 1; 05.06.02

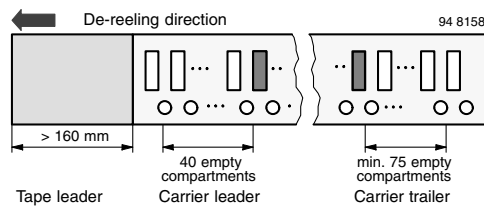


Fig. 12 - Beginning and End of Reel



MISSING DEVICES

A maximum of 0.5 % of the total number of components per reel may be missing, excluding missing components at the beginning and at the end of the reel. A maximum of three consecutive components may be missing, provided this gap is followed by six consecutive components.

The tape leader is at least 160 mm and is followed by a carrier tape leader with at least 40 empty compartments. The tape leader may include the carrier tape as long as the cover tape is not connected to the carrier tape.

The last component is followed by a carrier tape trailer with at least 75 empty compartments and sealed with cover tape.

TOP TAPE REMOVAL FORCE

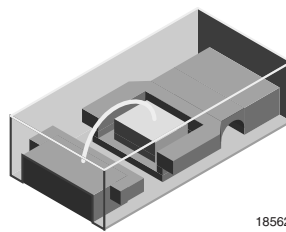
The removal force lies between 0.1 N and 1.0 N at a removal speed of 5 mm/s.

In order to prevent components from popping out of the blisters, the cover tape must be pulled off at an angle of 180 °C with regard to the feed direction.

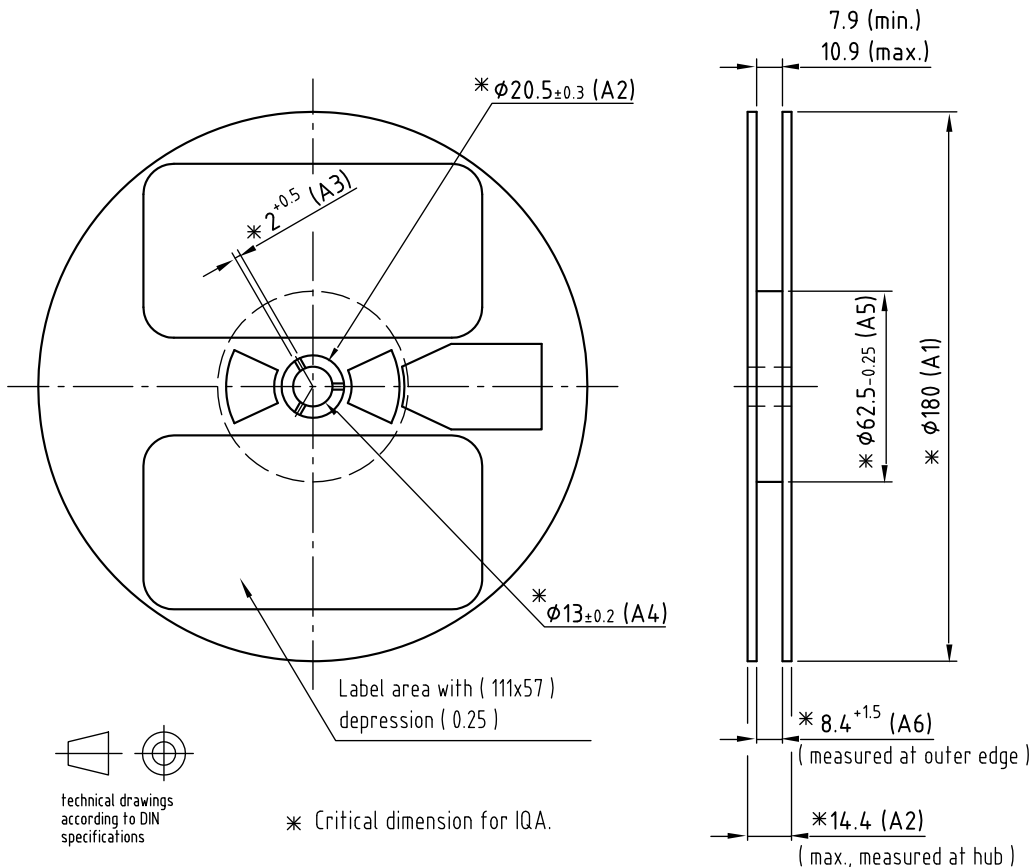
ORDER CODES

Example: VLMG2100-GS08

TAPE AND REEL DIMENSIONS FOR TLM.10., TLM.11., VLM.11.. 0603 LED LEADFRAME BASED



18562



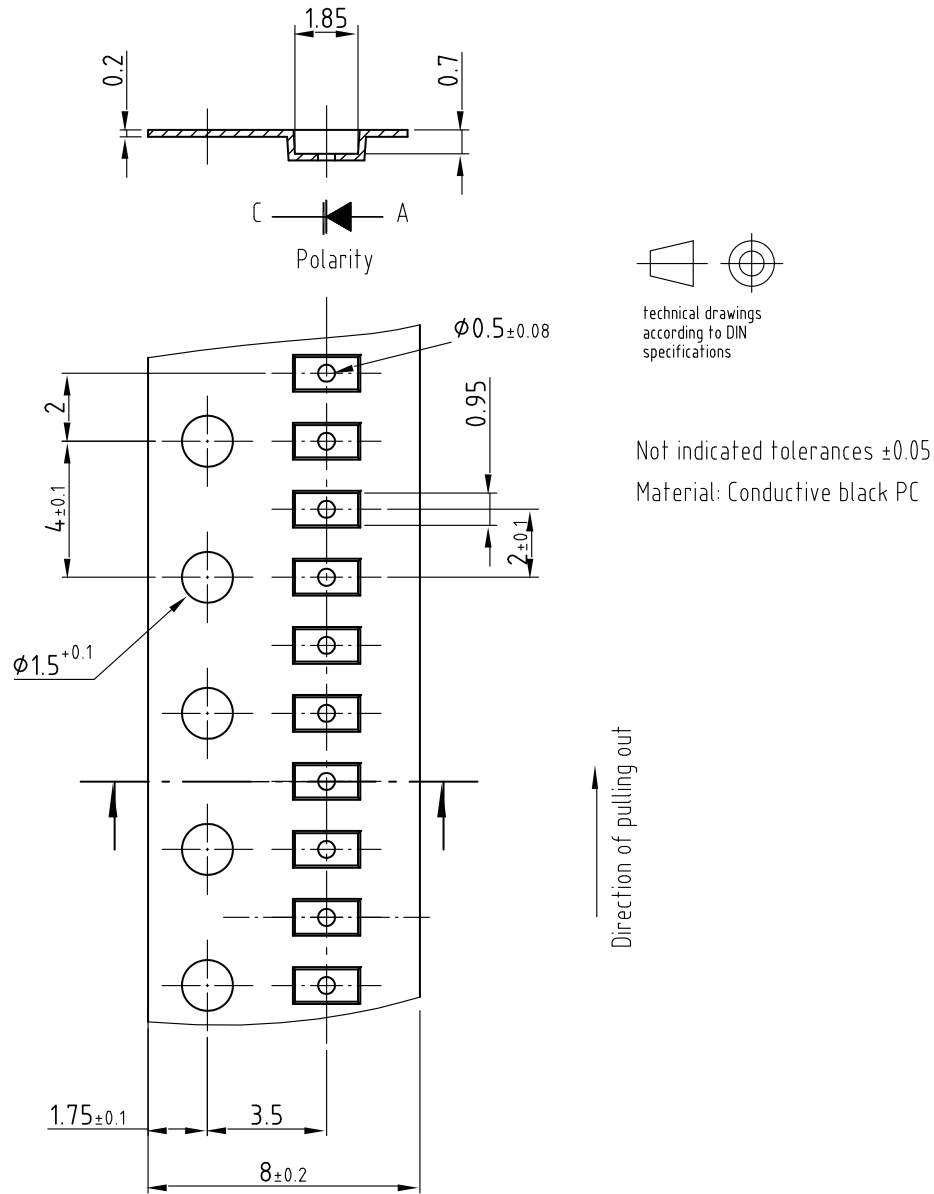
Drawing-No.: 9.800-5086.01-4

Issue: 1; 29.04.04

19043

Not indicated tolerances ± 0.05

Material: black static dissipative



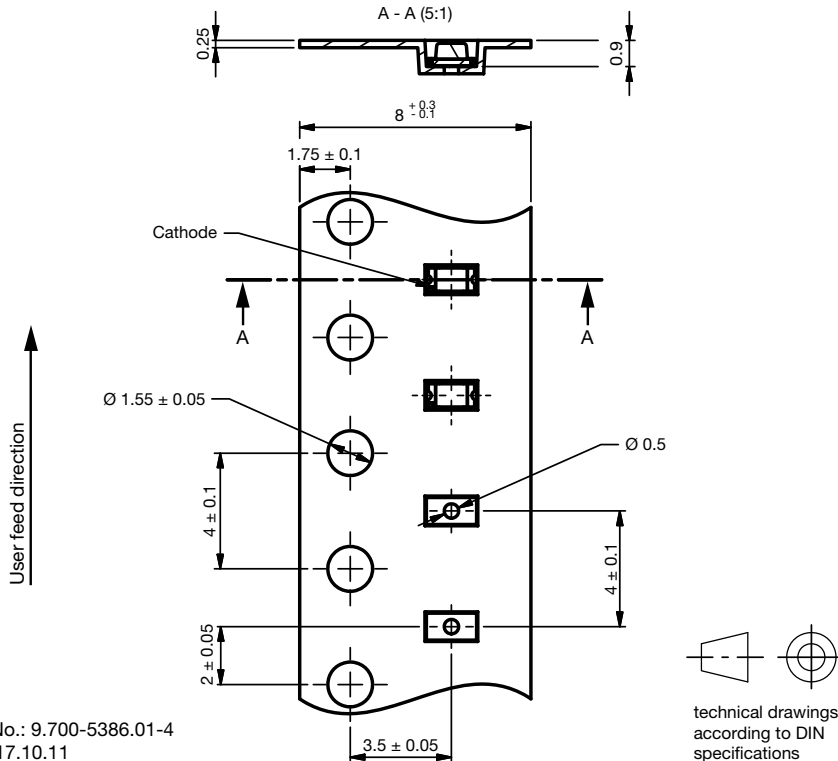
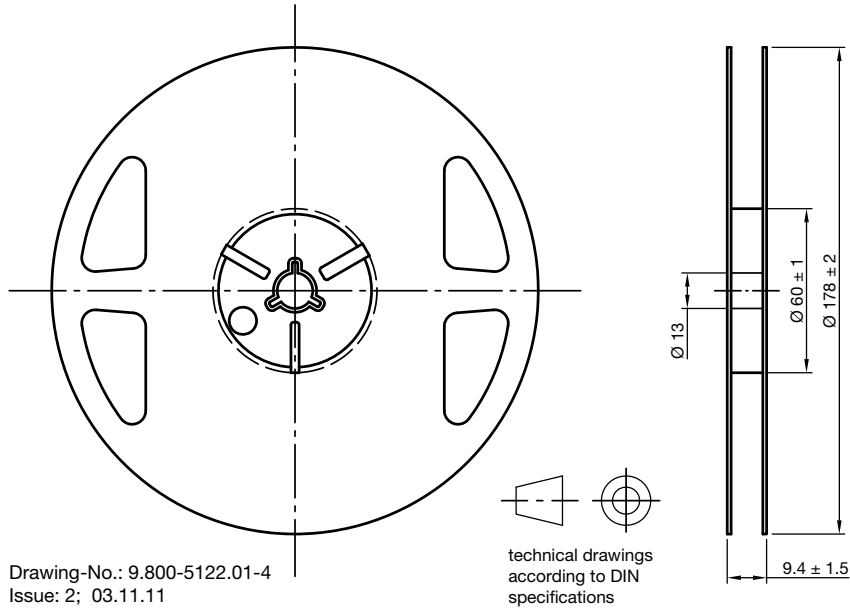
Drawing-No.: 9.700-5290.01-4

Issue: 2; 10.07.06

19044



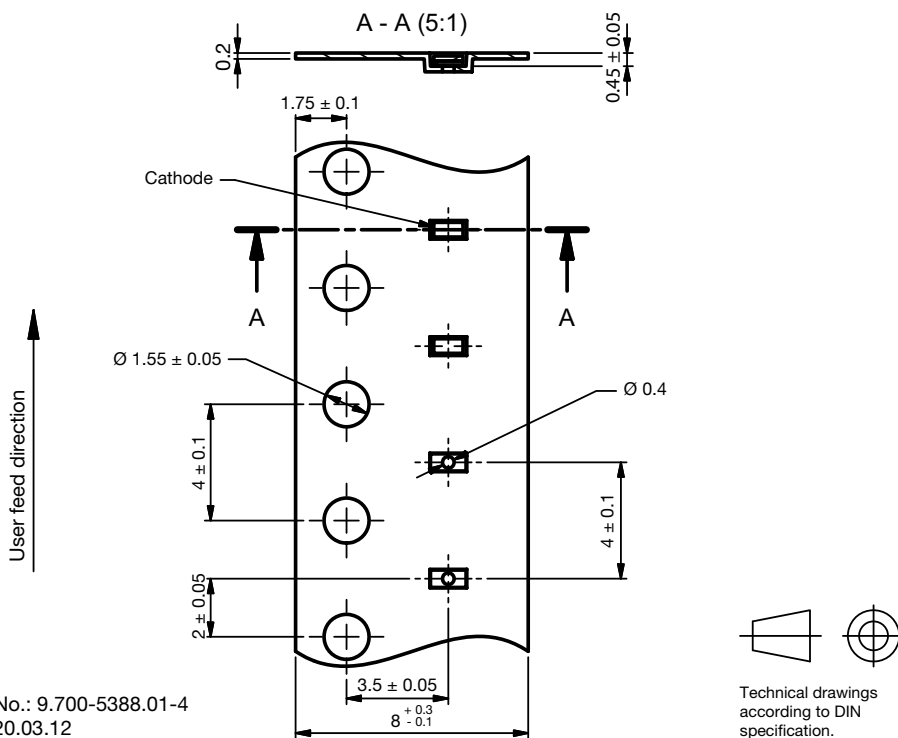
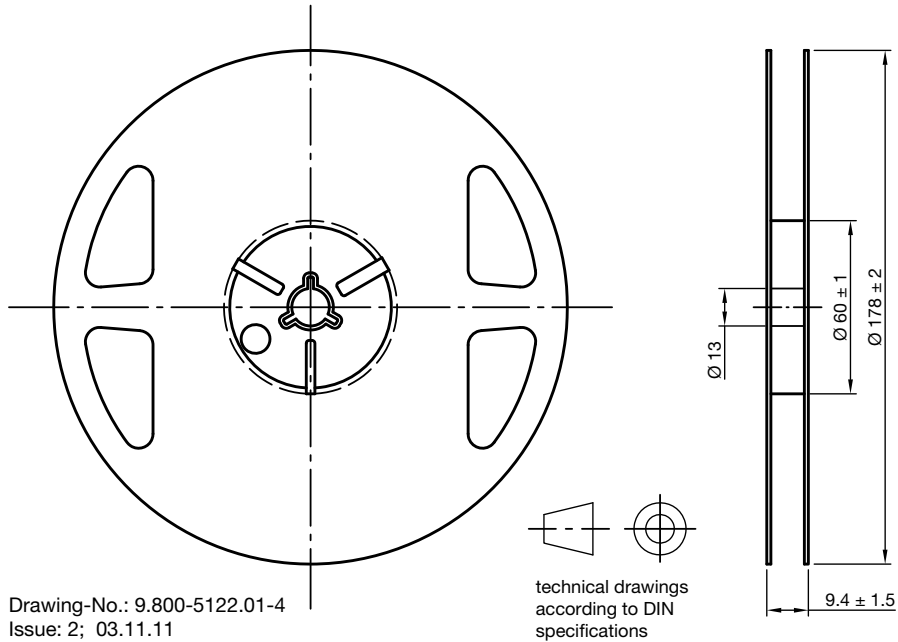
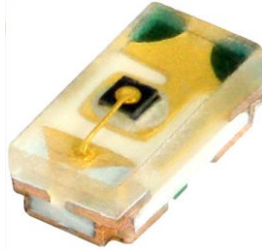
TAPE AND REEL DIMENSIONS FOR VLM.13.. 0603 LED PCB BASED



Drawing-No.: 9.700-5386.01-4
Issue: 1; 17.10.11

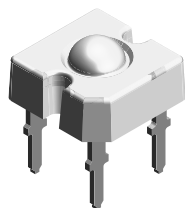


TAPE AND REEL DIMENSIONS VLM.15.. 0402 LED

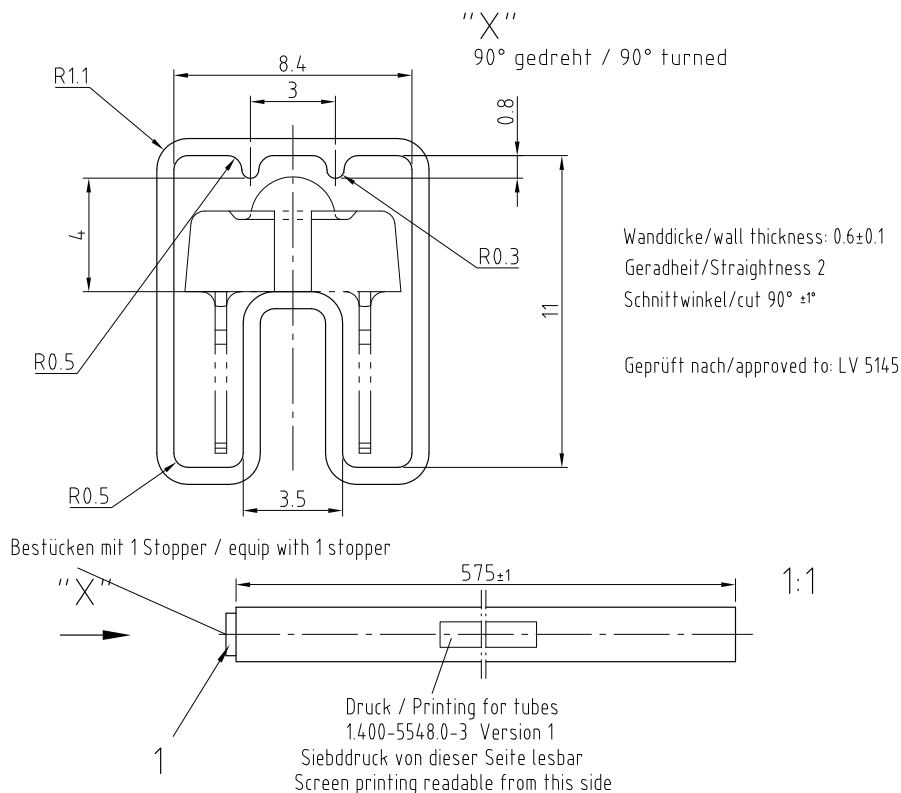


Drawing-No.: 9.700-5388.01-4
Issue: 1; 20.03.12

PACKAGING DIMENSIONS FOR TELUX



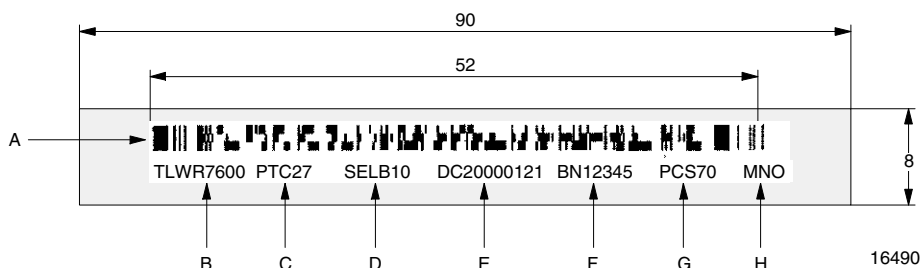
TUBE WITH BAR CODE LABEL



Drawing-No.: 9.700-5223.0-4
 Rev. 2; Date: 23.08.99

Fig. 13 - Drawing Proportions not scaled

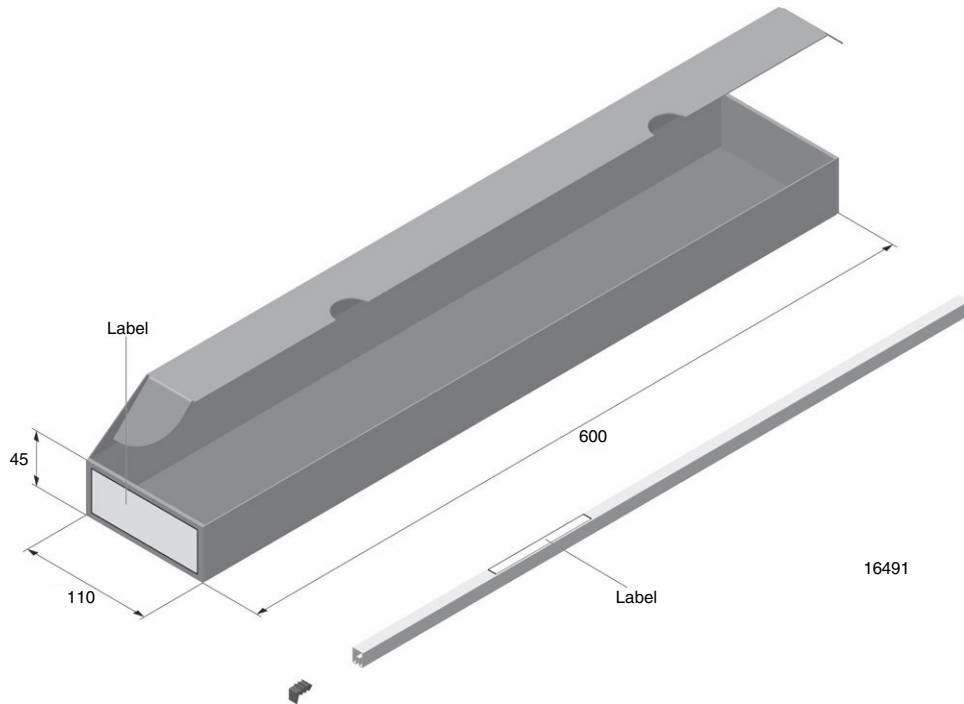
EXAMPLE FOR TELUX TUBE LABEL



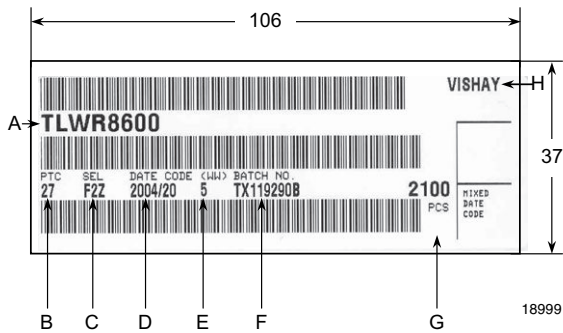
- | | |
|--|-------------------|
| A. Bar code | E. Date code |
| B. Type of component | F. Batch No. |
| C. Manufacturing plant | G. Total quantity |
| D. SEL - Selection Code (Bin) | H. Company code |
| Digit 1 - code for Luminous Flux group | |
| Digit 2 - code for Dominant Wavelength group | |
| Digit 3 - code for Forward Voltage group | |



FAN FOLD BOX



LABEL OF FAN FOLD BOX



- I. Type of component
- J. Manufacturing plant
- K. SEL - Selection Code (Bin)
 - Digit 1 - code for Luminous Flux group
 - Digit 2 - code for Dominant Wavelength group
 - Digit 3 - code for Forward Voltage group
- L. Date Code year/week
- M. Day Code (e. g. 5: Friday)
- N. Batch No.
- O. Total quantity
- P. Company code

Note

- Any distance between bar code and character is more than 1 mm.