

Packaging and Order Information

PACKAGING SURVEY

TABLE 1 - PACKAGING OPTIONS OF DETECTOR AND EMITTER DEVICES					
PACKAGE FORM	SERIES	PACKAGING OPTION			
		BULK	TAPE	BLISTER TAPE	TUBE
Metal can	BPW./TS.	X			
Side view lens	TEKS5400.		X		
	TEKS5400S	X	X		
	TEKT5400S				
	TSKS5400S				
TSKS542.X01		X			
SMD	TEM./TSM./VEM./VSM.			X	
Top view mold	BP104	X			
	BPW34				
	BP104S				X
	BPW34S				
Other leaded packages	BP./TE./TS.	X	X		

MOISTURE PROOF PACKAGING

The reel is packed in a moisture proof aluminum bag to protect devices from absorbing moisture during transportation and storage.

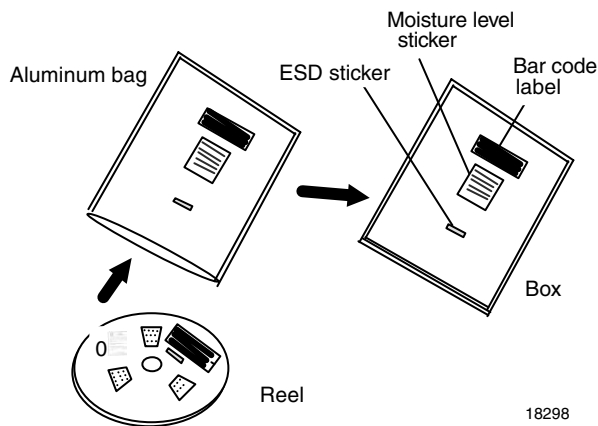


Fig. 1 - Moisture Proof Packaging

RECOMMENDED METHOD OF STORAGE

Dry box storage is recommended as soon as the dry bag has been opened to prevent moisture absorption. The following conditions should be observed if dry boxes are not available:

- Storage temperature 10 °C to 30 °C
- Storage humidity ≤ 60 % RH max.

After storage longer than the specified floor life (see table 2), moisture content will be too high for reflow soldering. In case of moisture absorption, the devices will recover to their former condition by drying using conditions according to the individual moisture sensitivity level (MSL) specified on a sticker affixed to the dry bags (e.g. figure 2, MSL 2a).

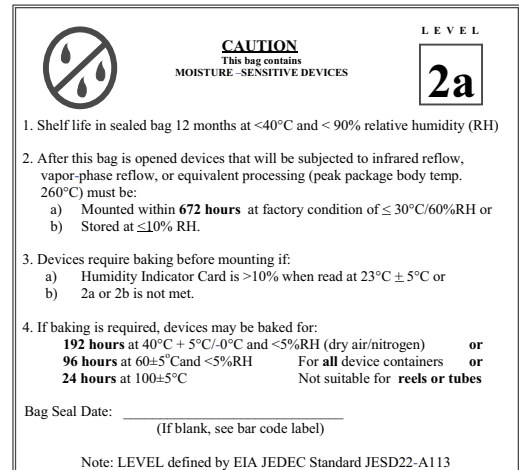


Fig. 2 - Example of MSL Sticker

TABLE 2 - MOISTURE SENSITIVITY LEVEL, FLOOR LIFE AND FLOOR CONDITIONS

MSL	FLOOR LIFE	CONDITIONS
1	No limit	≤ 30 °C/90 % RH
2	1 year	≤ 30 °C/60 % RH
2a	672 h	
3	168 h	
4	72 h	
5	24h/48 h	
6	6 h	

ESD PRECAUTION

Proper storage and handling procedures should be followed to prevent ESD damage to the devices, especially when they are removed from the antistatic shielding bag.

BAR CODE LABELS

Vishay Semiconductor standard bar code labels are printed on the final package. Labels containing Vishay Semiconductor specific data are affixed to each package unit.

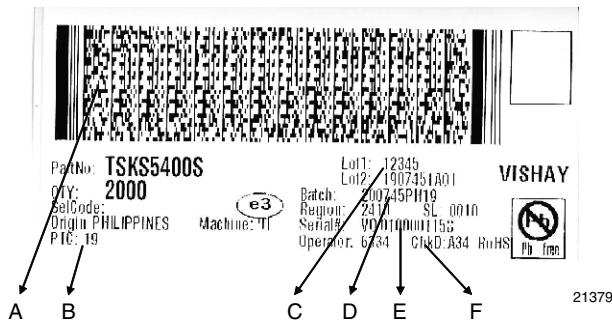


Fig. 3 - Bar code design and information

- A) PDF417 barcode including 325 char
- B) Plant code according TQD9021
http://intra.hn.vishay.com/quality/docs/tqd/tqd_9021.htm
- C) Lot1 and Lot2 reflects the lot numbers. Lot2 is a combination of 19 (PTC), 0745 (YYWW), 1 (production day MO=1, TU=2), A (Shift A,B,C) and 01 as production equipment
- D) Batch contains the datecode 200745 (YYYYWW), origin (PH=Philippines), 19 (PTC)
- E) Unique label serial number: VO production location (ISO), 01=label station ID, 00001155 (serial number)
- F) Check digit: counting number starting at A00 up to Z99 to give e.g. a manufactured reel a serial number (track and trace information)

TAPING OF SMD

Vishay SMD IR emitters and detectors are packed in antistatic blister tapes (in accordance with DIN IEC 40 (CO) 564) for automatic component insertion. The blister tapes are plastic strips with impressed component cavities, which are covered by a glued top tape.

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 reel. A maximum of three consecutive components may be missing. This gap is followed by ≥ 6 consecutive components (minimum).

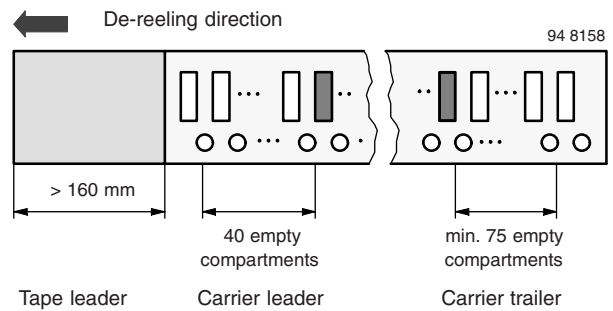


Fig. 4 - Beginning and End of Reel

TAPING SMD PLCC-2 PACKAGE

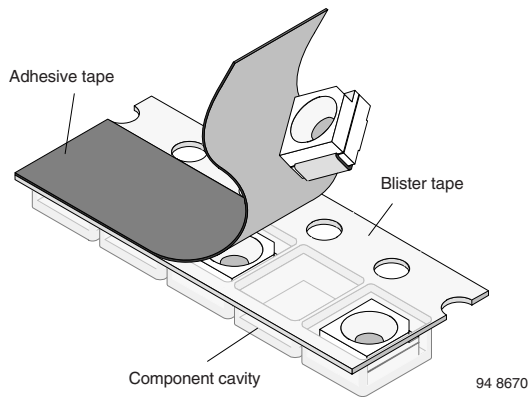


Fig. 5 - Blister Tape

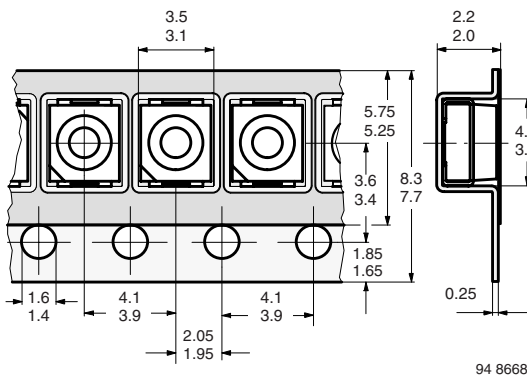


Fig. 6 - Tape Dimensions in mm for PLCC-2

TAPING STANDARDS GS08 AND GS18

GS08: 1500 pcs/reel

GS18: 8000 pcs/reel

The tape leader is at least 160 mm and is followed by a carrier tape leader with at least 40 empty compartments (figure 3). The tape leader may include carrier tape as long as the cover tape is not connected to carrier tape.

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

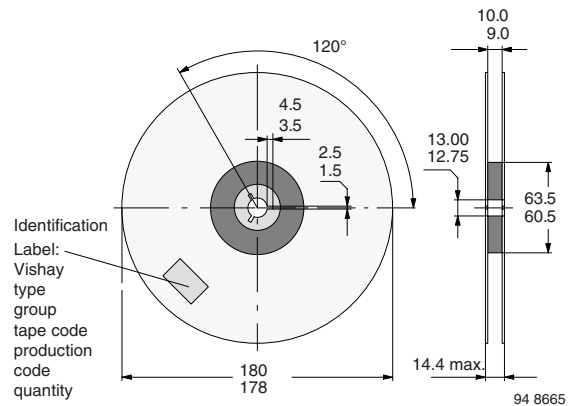


Fig. 7 - Reel Dimensions: GS08

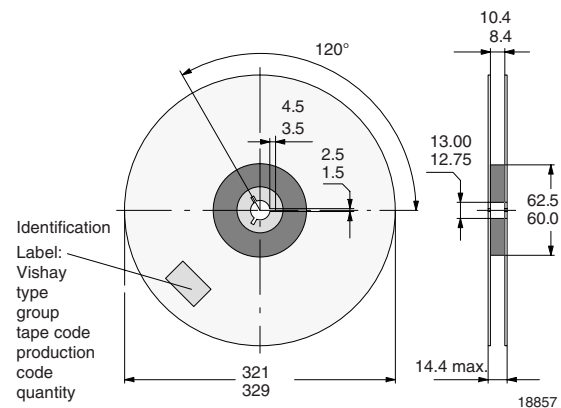


Fig. 8 - Reel Dimensions: GS18

COVER TAPE REMOVAL FORCE

The removal force may vary in strength 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 blisters, the cover tape must be pulled off at an angle of 180° relative to the feed direction.

Packaging and Order Information

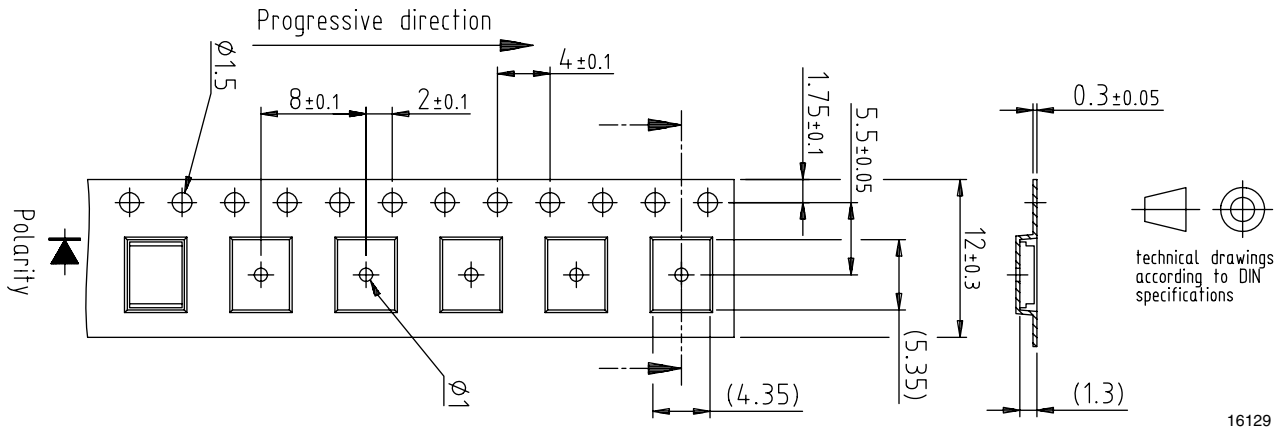
Vishay Semiconductors

Packaging and Order Information



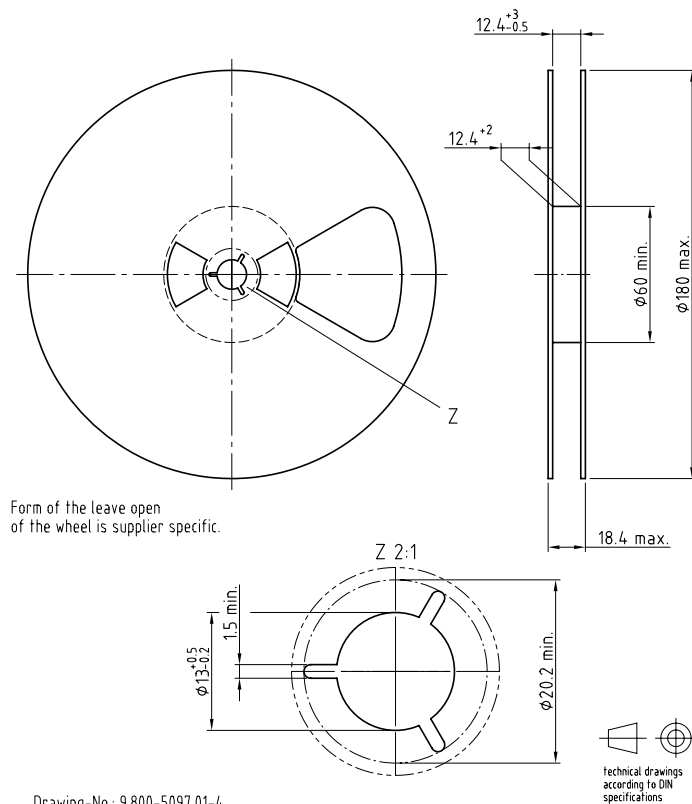
TAPING SMD WITH PCB OR DOME PACKAGE

Dimensions in millimeters



16129

Fig. 9 - Blister Tape of TEMD5000 and TEMD5100



Drawing-No.: 9.800-5097.01-4
Issue: 1; 05.05.08
20874

Fig. 10 - Reel of TEMD5010X01/5020X01/5110X01/5120X01/5510FX01

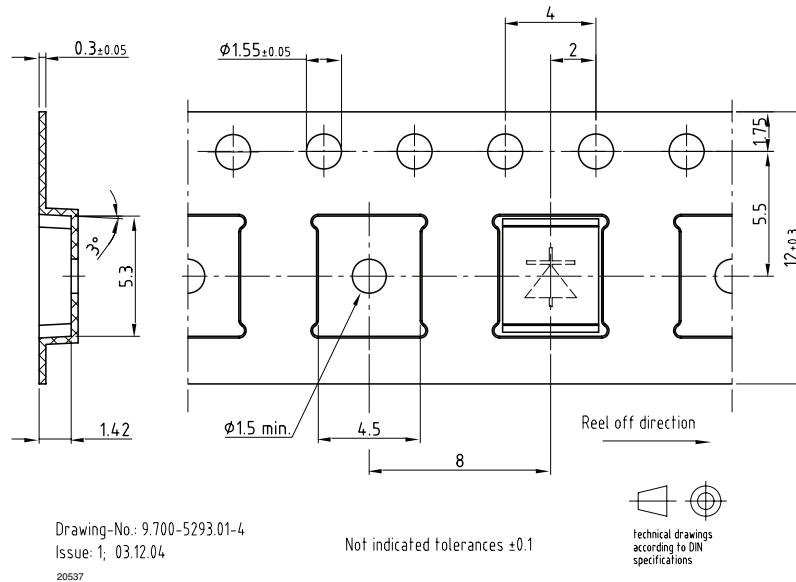
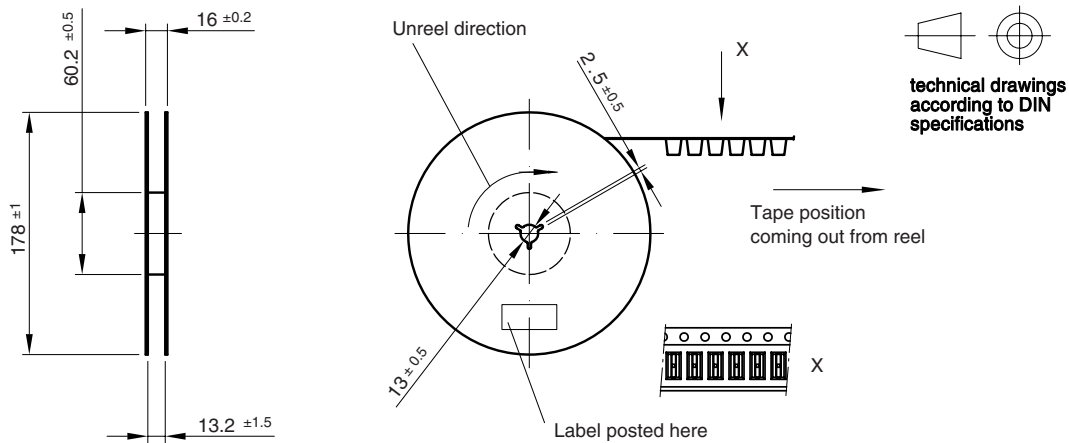


Fig. 11 - Blister Tape of TEMD5010X01/5020X01/5110X01/5120X01/5510FX01



Leader and trailer tape:

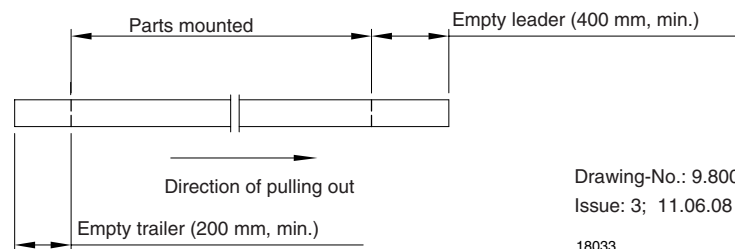


Fig. 12 - Reel of TEMx1000 Series and TSMx1000 Series
Quantity per Reel: 1000 pcs

Packaging and Order Information

Vishay Semiconductors

Packaging and Order Information

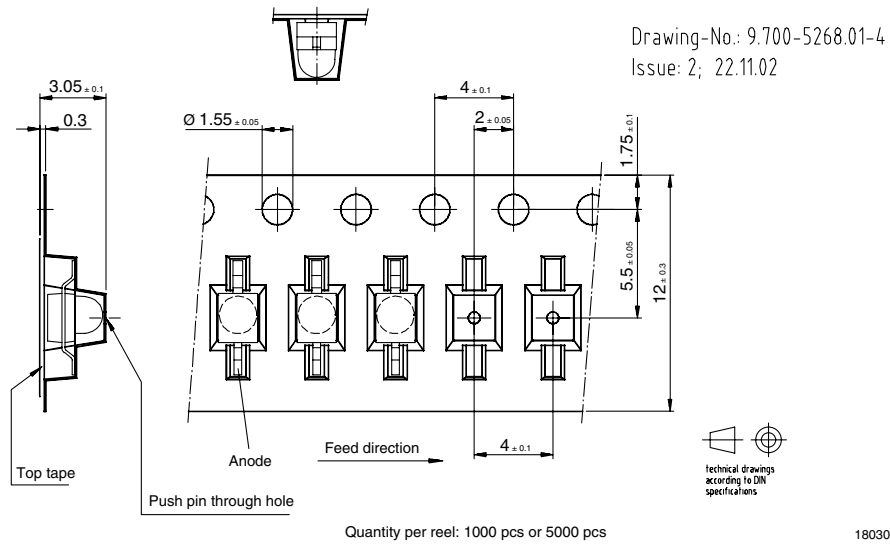


Fig. 13 - Blister Tape of TSMF1000, TSML1000, and TEMD1000

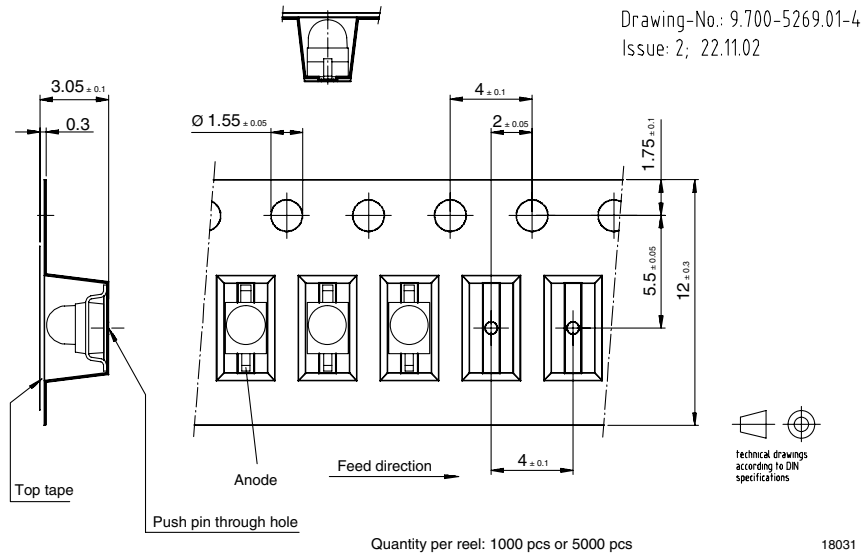


Fig. 14 - Blister Tape of TSMF1020, TSML1020, and TEMD1020

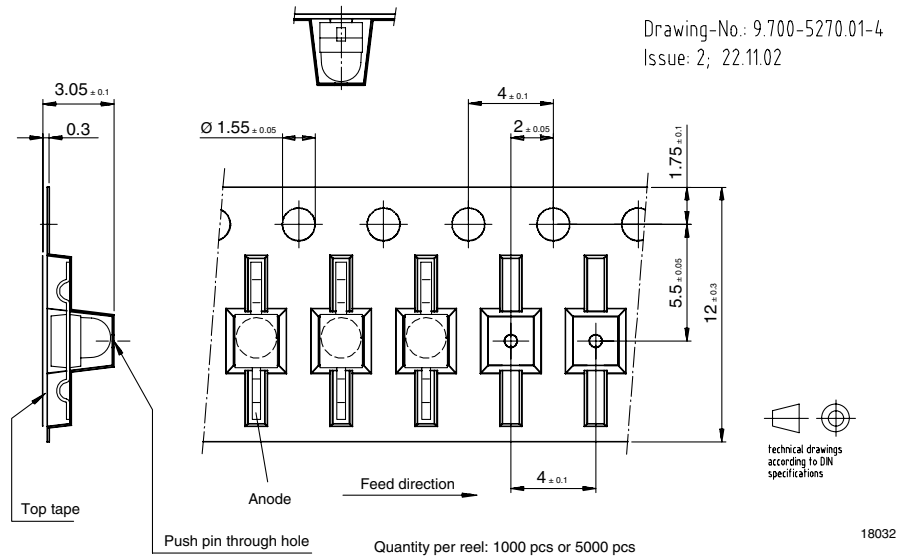


Fig. 15 - Blister Tape of TSMF1030, TSML1030, and TEMD1030

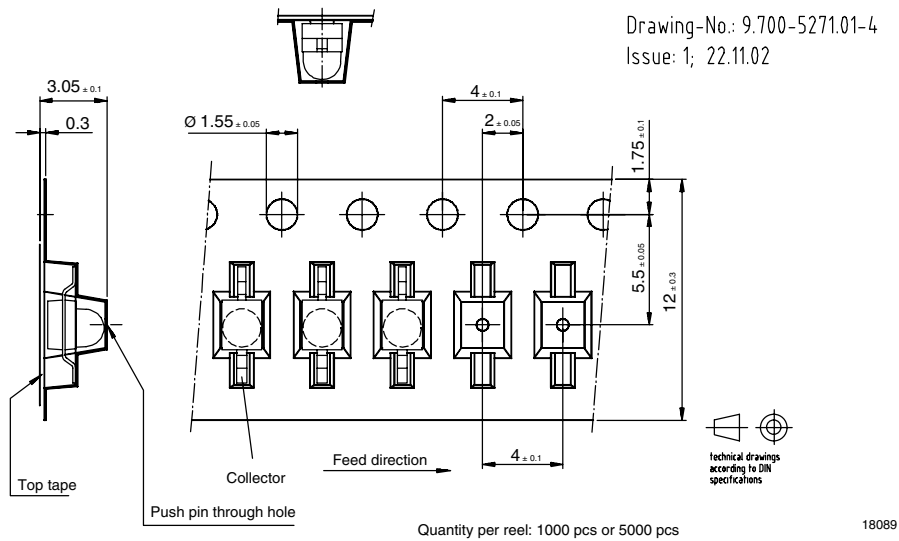


Fig. 16 - Blister Tape of TEMT1000

Packaging and Order Information

Vishay Semiconductors

Packaging and Order Information

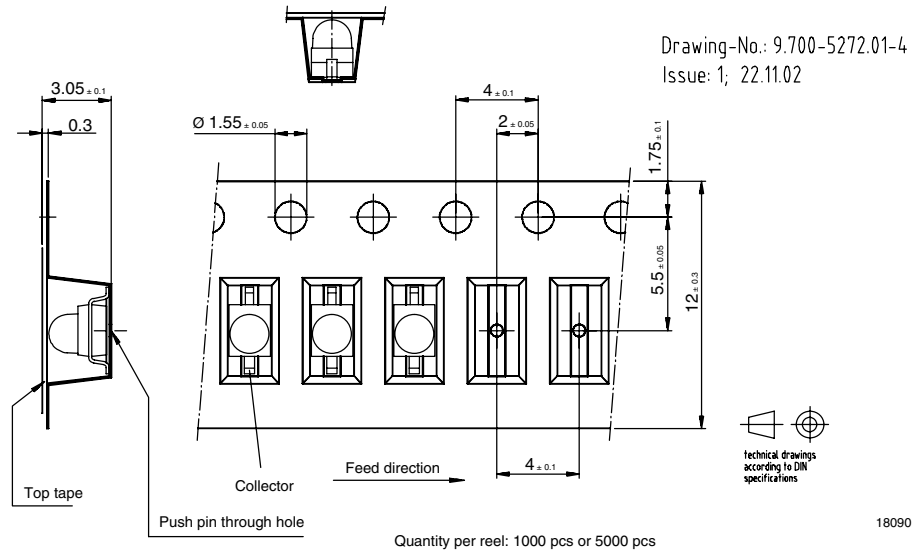


Fig. 17 - Blister Tape of TEMT1020 and TEMT1520

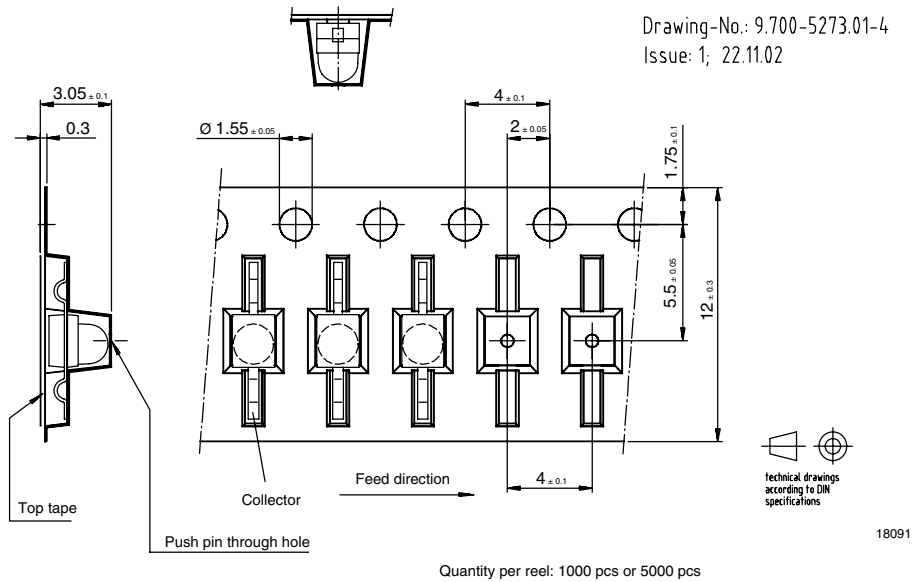
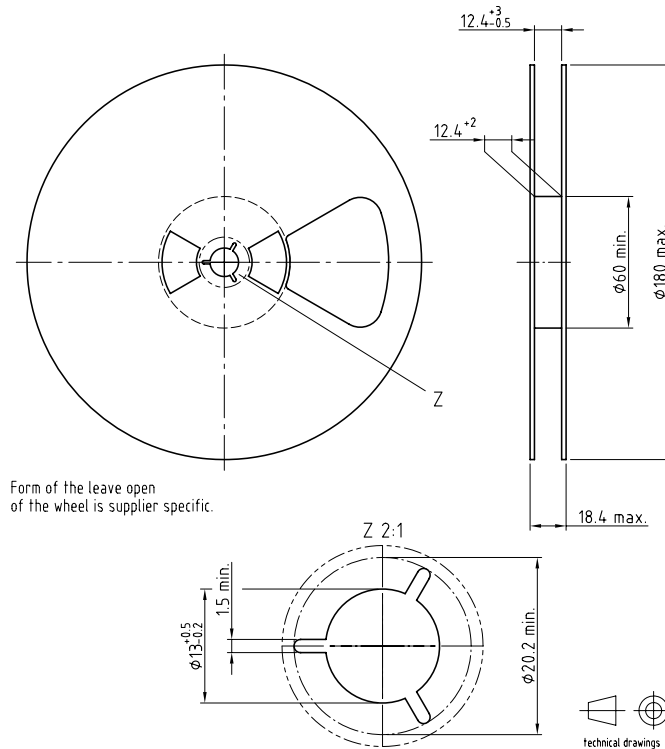
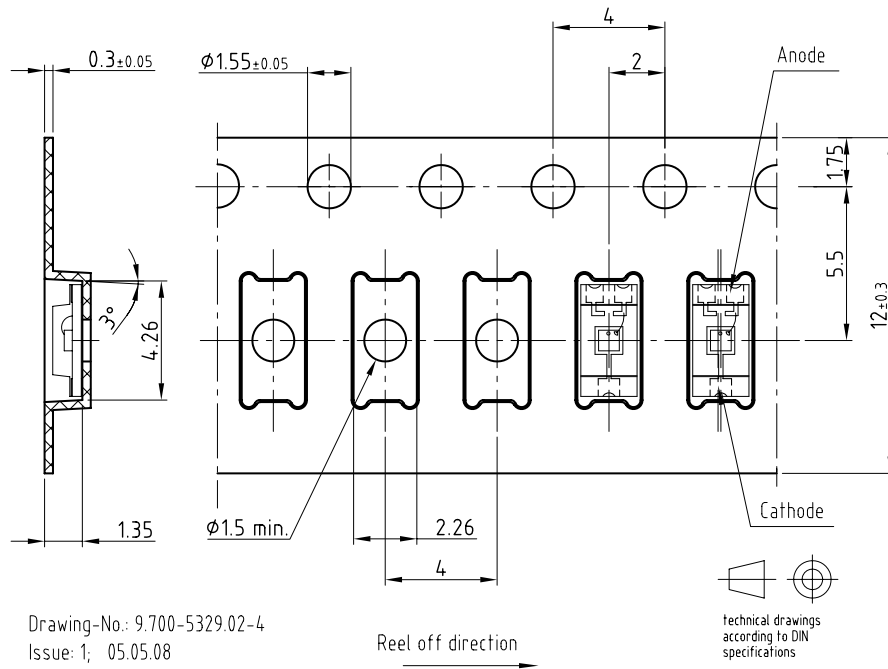


Fig. 18 - Blister Tape of TEMT1030



Drawing-No.: 9.800-5097.01-4
 Issue: 1; 05.05.08
 20874

Fig. 19 - Reel of TEMx6000 Series
 Quantity per Reel: 3000 pcs



Drawing-No.: 9.700-5329.02-4
 Issue: 1; 05.05.08
 20877

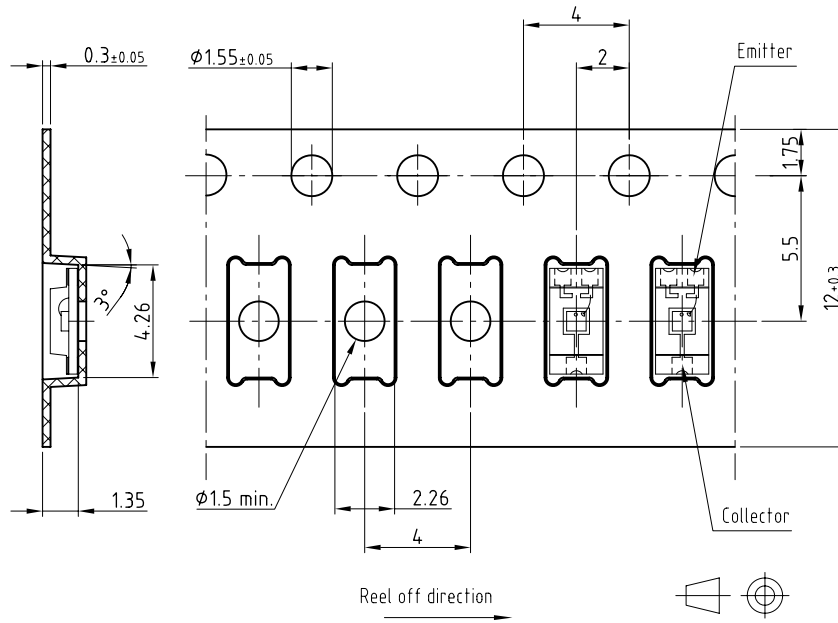
Not indicated tolerances ±0.1

Fig. 20 - Blister Tape of TEMD6010FX01

Packaging and Order Information

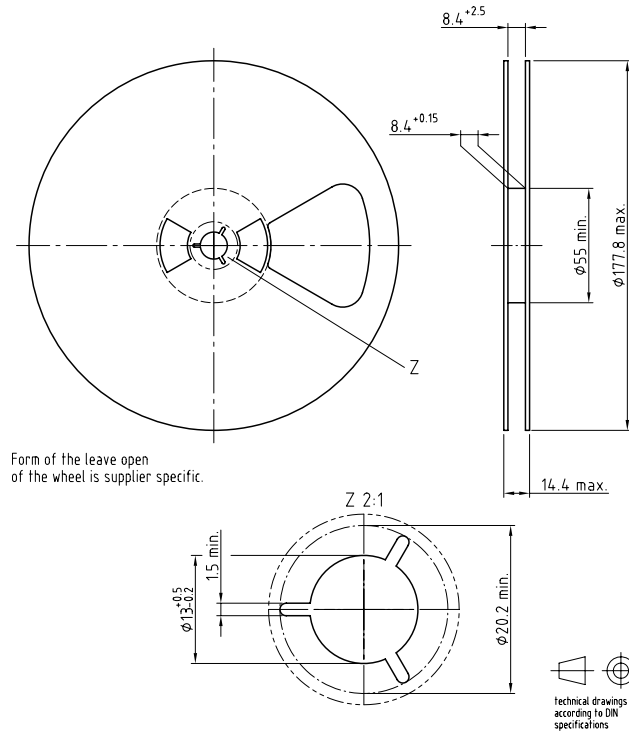
Vishay Semiconductors

Packaging and Order Information



Drawing-No.: 9.700-5329.01-4
Issue: 1; 05.05.08

Fig. 21 - Blister Tape of TEMT6000X01



Drawing-No.: 9.800-5096.01-4
Issue: 1; 05.05.08
20875

Fig. 22 - Reel of TEMx6200X01 Series
Quantity per reel: 3000 pcs

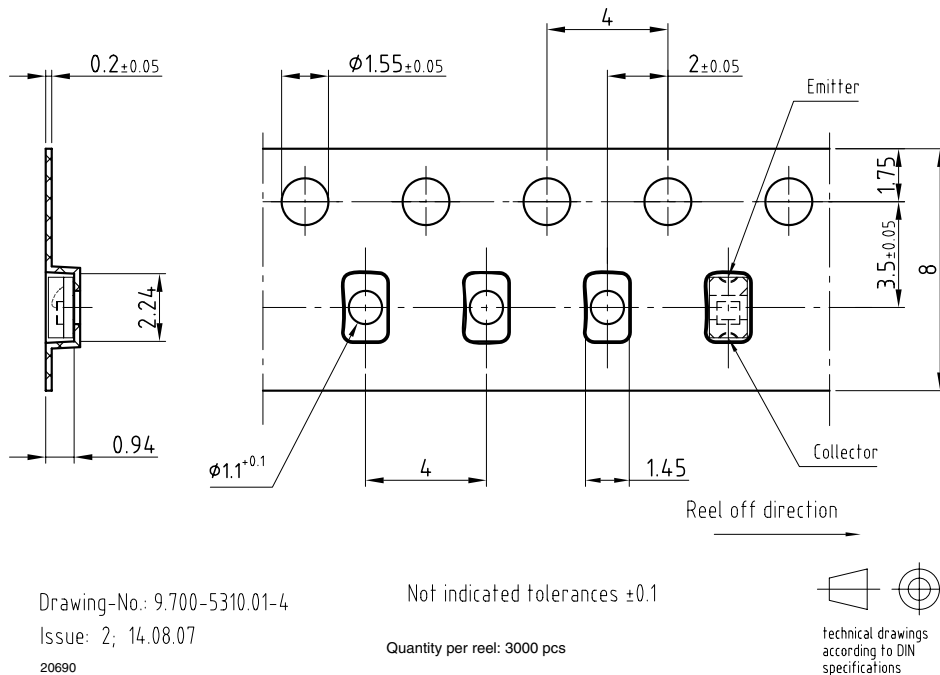


Fig. 23 - Blister Tape of TEMT6200FX01

TAPING OF T-1 (3 mm) AND T-1 3/4 (5 mm) DEVICES

The taping specification is based on IEC publication 286, taking into account industrial requirements for automatic insertion.

Absolute maximum ratings, mechanical dimensions, optical and electrical characteristics for taped devices are identical to basic catalog types and can be found in specifications for untaped devices.

Note that the lead wires of taped components may be shorted or bent in accordance to the IEC standard.

PACKAGING

The tapes of components are available on reels or in Ammpack. Each reel and each box is marked with label containing the following information:

- Vishay
- Type
- Group
- Tape code (see figure 24)
- Productions code
- Quantity

CODE FOR TAPED DEVICES

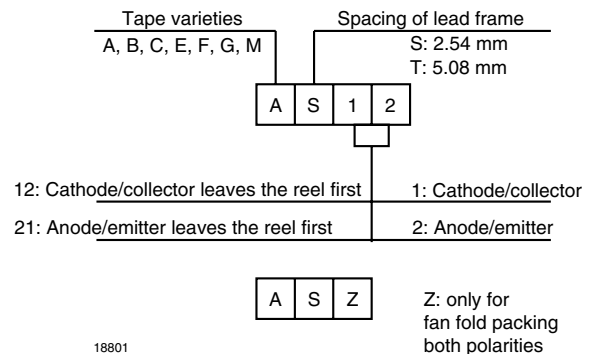


Fig. 24 - Taping Code

Number of Packed Components

- T-1 (3 mm): 2000 pcs
- T-1 3/4 (5 mm): 1000 pcs

Packaging and Order Information



Vishay Semiconductors

Packaging and Order Information

MISSING COMPONENTS

Up to 3 consecutive components may be missing but the gap is followed by at least 6 components. A maximum of 0.5 % of 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 plane of the tape, at right angles to reel: ≥ 5 N

Note: Shipment in fan-fold packages is standard for radial taped devices.

Shipment in reel packing is only possible if the customer guarantees removal of empty reels.

According to what is stated in a German packaging decree (Verpackungsverordnung) we are not able to accept return of reels.

ORDERING CODE

Type designations are extended by a code for the taping standard.

Example:

TSAL6200-AS12 (reel packing)

TSAL6200-ASZ (fan-fold packing)

BPW85-AS12 (reel packing)

TABLE 3: TAPING SURVEY OF LEADED COMPONENTS

CODE FOR TAPING STANDARD	"H" - HIGH OF TAPING IN mm (TOLERANCES ± 0.5 mm)			PREFERENCES	REMARKS
	3 mm	5 mm	SIDEVIEW'S		
AS12	17.3	17.3	16.0	Standard	Reel, cathode/collector leaves first
AS21					Reel, anode/emitter leaves first
ASZ					Ammopack
CS12	22.0	22.0	-		Reel, cathode/collector leaves first
CS21					Reel, anode/emitter leaves first
CSZ					Ammopack
ES12	-	24.0	24.0	Standard	Reel, cathode/collector leaves first
ES21					Reel, anode/emitter leaves first
ESZ					Ammopack
EGZ	-	-	24.0		Ammopack 2 mm pin distance lead to lead
MS12	25.5	25.5	-		Reel, cathode/collector leaves first
MS21					Reel, anode/emitter leaves first
MSZ					Ammopack
GSZ	-	-	29.0		Ammopack 2 mm pin distance lead to lead
FSZ	-	-	27.0	Standard	Ammopack
FGZ	-	-	27.0		Ammopack 2 mm pin distance lead to lead



REEL DIMENSIONS in millimeters

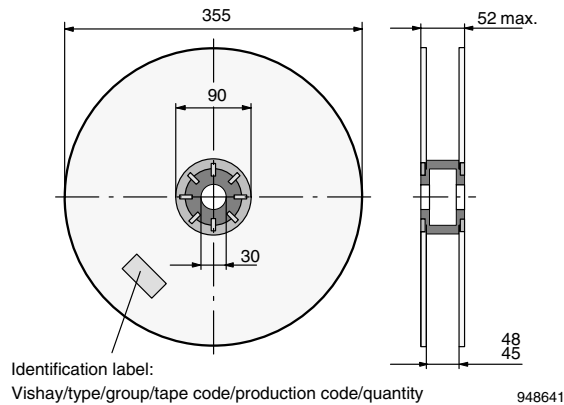


Fig. 25 - Dimensions of the Reel

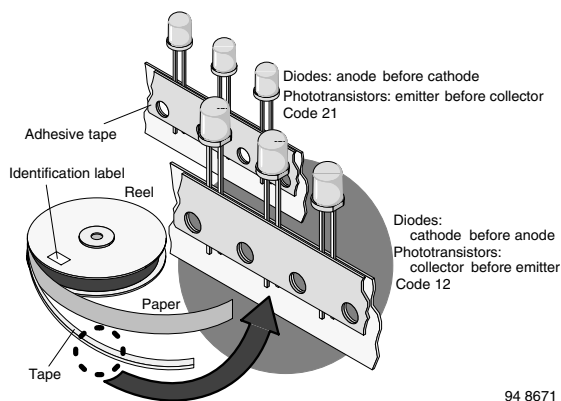


Fig. 26 - Components on Tape and Reel

AMMOPACK

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

If components are required to have the cathode or collector leave the box first (figure 27), then open the box at the side marked with the “-” symbol. If anode or emitter should leave the box first, then open at the side marked with the “+” symbol.

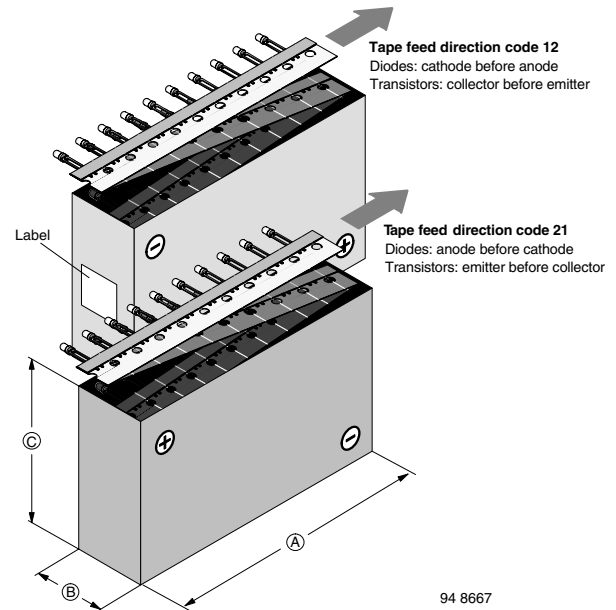


Fig. 27 - Tape Feed Direction

TABLE 4 - INNER DIMENSIONS OF AMMOPACK			
A mm	B mm	C mm	COMPONENTS
340	46	125	T-1 3/4 (5 mm)
340	34	140	T-1 (3 mm) AS-taping
340	41	140	T-1 (3 mm) other than AS-taping
348	43	125	FSZ side view lens
348	46	125	GSZ side view lens

Packaging and Order Information

Vishay Semiconductors

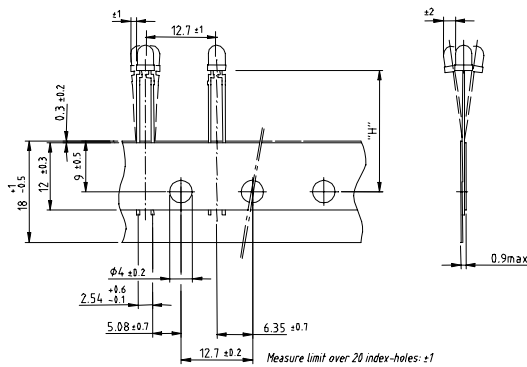
Packaging and Order Information



TAPING OF T-1 (3 mm) PACKAGES

Polarity options: Z, 12, 21

TABLE 5 - POSITION OF T-1 (3 mm) COMPONENTS IN TAPE		
OPTION	H	PREFERENCE
AS	17.3 ± 0.5 mm	recommended
MS	25.5 ± 0.5 mm	recommended
CS	22.0 ± 0.5 mm	



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

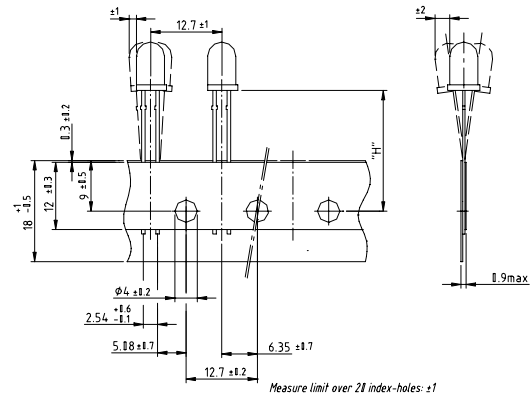
94 8171

Fig. 28 - Taping of T-1 (3 mm) Devices

TAPING OF T-1 3/4 (5 mm) PACKAGES

Polarity options: Z, 12, 21

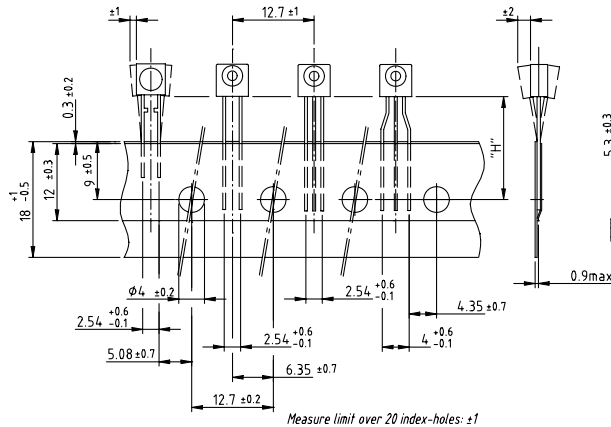
TABLE 6 - POSITION OF T-1 3/4 (5 mm) COMPONENTS IN TAPE		
OPTION	H	PREFERENCE
AS	17.3 ± 0.5 mm	recommended
MS	25.5 ± 0.5 mm	recommended
CS	22.0 ± 0.5 mm	
ES	24.0 ± 0.5 mm	



Quantity per:	Reel (Mat. - No. 1764) 1000
---------------	-----------------------------------

94 8172

Fig. 29 - Taping of T-1 3/4 (5 mm) Devices



Quantity per:	Ampack (Mat. - No. 1763) 2000
---------------	-------------------------------------

18886

Fig. 30 - Taping of Side View Lens Packages

Bend leads:
Lead standard xG
Straight leads:
Lead standard xS

Option	H
AS	16 ± 0.5 mm
ES	24 ± 0.5 mm
FS	27 ± 0.5 mm
GS	29 ± 0.5 mm
EG	24 ± 0.5 mm
FG	27 ± 0.5 mm

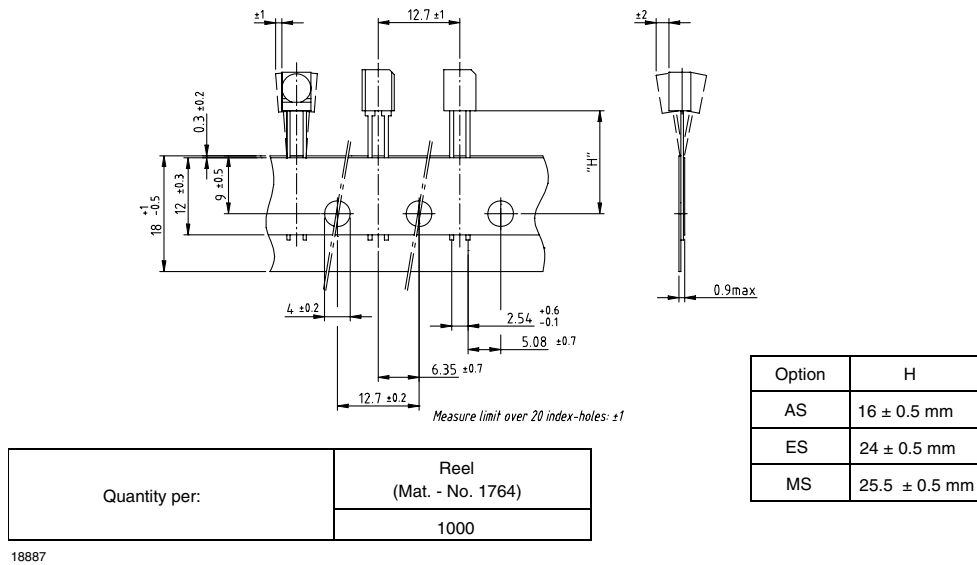


Fig. 31 - Taping of Side View PIN Photodiodes

TUBE PACKAGING OF TOP VIEW PIN PHOTODIODES BP104S AND BPW34S

Dimensions in millimeters

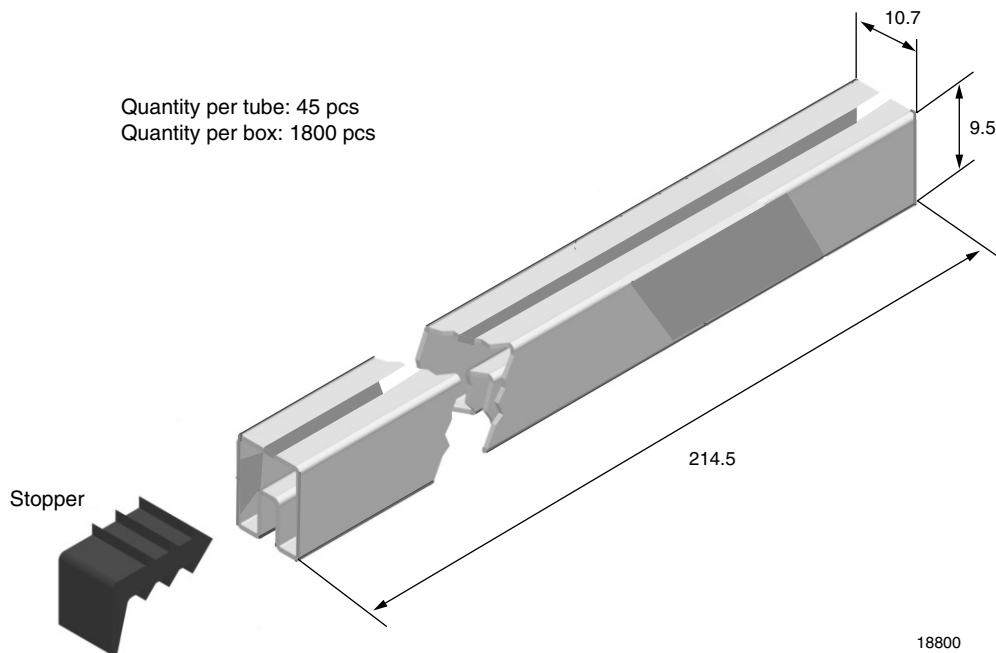


Fig. 32 - Drawing Proportions Not Scaled