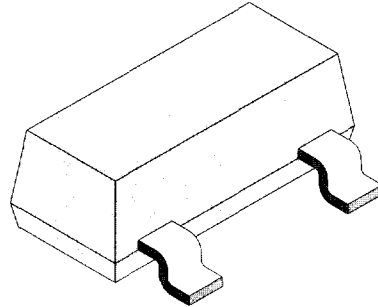


Surface Mount Schottky Barrier Diodes

Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection



94 8550

Absolute Maximum Ratings

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage =Working peak reverse voltage =DC Blocking voltage		V_{RRM} $=V_{RWM}$ $=V_R$	30	V
Peak forward surge current	$t_p < 1\text{s}$, on fiberglass substrate	I_{FSM}	600	mA
Repetitive peak forward current	on fiberglass substrate	I_{FRM}	300	mA
Average forward current		I_{FAV}	100	mA
Forward current	on fiberglass substrate	I_F	200	mA
Power dissipation	on fiberglass substrate	P_d	200	mW
Junction and storage temperature range		$T_j = T_{stg}$	-55...+125	$^\circ\text{C}$

Maximum Thermal Resistance

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient		R_{thJA}	500	K/W

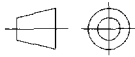
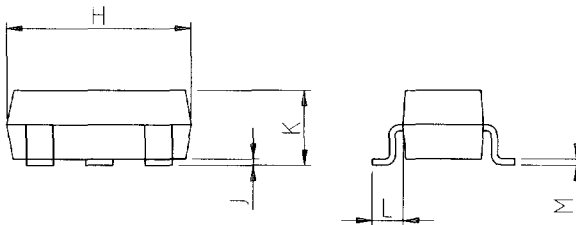


Electrical Characteristics

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=0.1\text{mA}$, $t_p<300\mu\text{s}$, duty cycle $<2\%$	V_F			240	mV
	$I_F=1\text{mA}$, $t_p<300\mu\text{s}$, duty cycle $<2\%$	V_F			320	mV
	$I_F=10\text{mA}$, $t_p<300\mu\text{s}$, duty cycle $<2\%$	V_F			400	mV
	$I_F=30\text{mA}$, $t_p<300\mu\text{s}$, duty cycle $<2\%$	V_F			500	mV
	$I_F=100\text{mA}$, $t_p<300\mu\text{s}$, duty cycle $<2\%$	V_F			1000	mV
Reverse current	$V_R=25\text{V}$, $t_p<300\mu\text{s}$, duty cycle $<2\%$	I_R			2	μA
Breakdown voltage	$I_R=100\mu\text{A}$	$V_{(BR)}$	30			V
Diode capacitance	$V_R=1\text{V}$, $f=1\text{MHz}$	C_D			10	pF
Reverse recovery time	$I_F=10\text{mA}$ through $I_R=10\text{mA}$ to $I_R=1\text{mA}$, $R_L=100\Omega$	t_{rr}			5	ns

Dimensions in mm

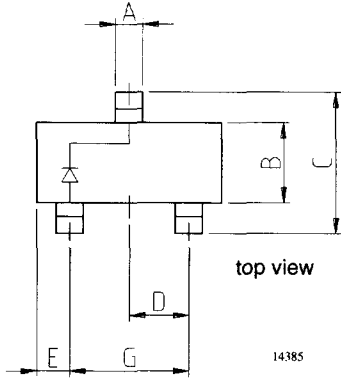


technical drawings
according to DIN
specifications

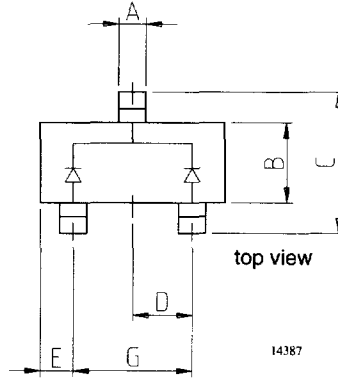
14384

SOT-23		
Dim	Min	Max
A	0.37	0.50
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.79	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.130
All Dimensions in mm		

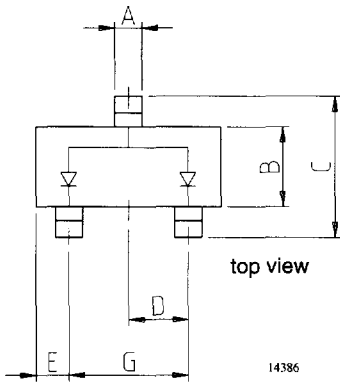
Case: SOT23, molded plastic
 Terminals: Solderable per MIL-STD-202, Method 208
 Polarity: see diagrams below
 Mounting position: any
 Approx. weight: 0.008 grams



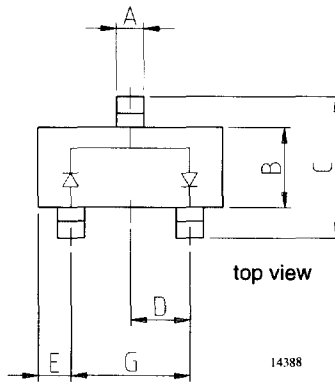
BAT54



BAT54C, common cathode



BAT54A, common anode



BAT54S, connected in series

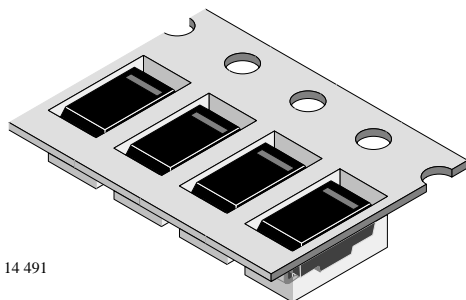
Tape and Reel Standards

Surface Mount

Body	Available Packaging	
	Tape and Reel	
	7"Ø Quantity	13"Ø Quantity
DO214AC	1500	6K
SMA	1500	5K
SMB	500	3K
SMC	–	3K
DFS	–	1.5K
D ² PAK	–	800

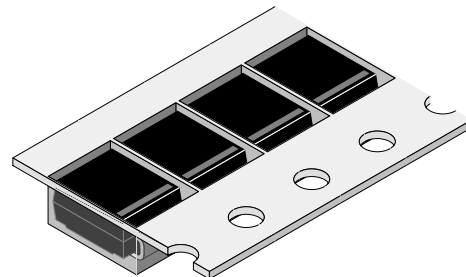
Tape Dimensions and Orientation: (Dimensions in mm)

DO214AC (12mm)



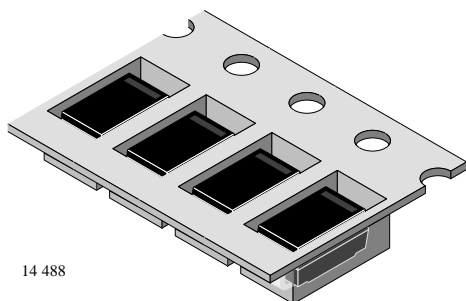
14 491

SMB (12mm)



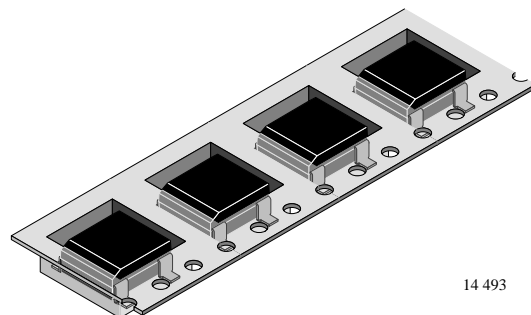
14 489

SMA (12mm)



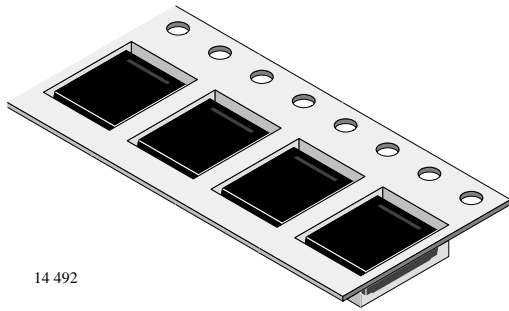
14 488

DF-S (16mm)



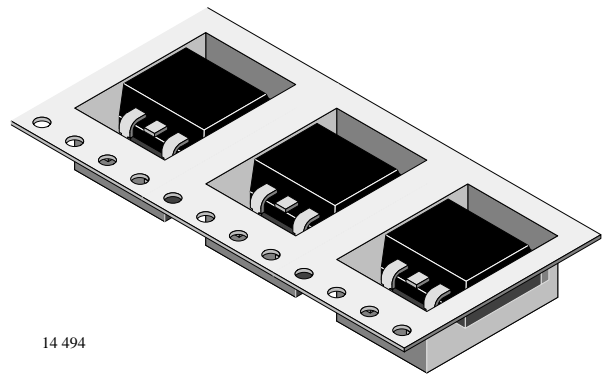
14 493

SMC (16mm)



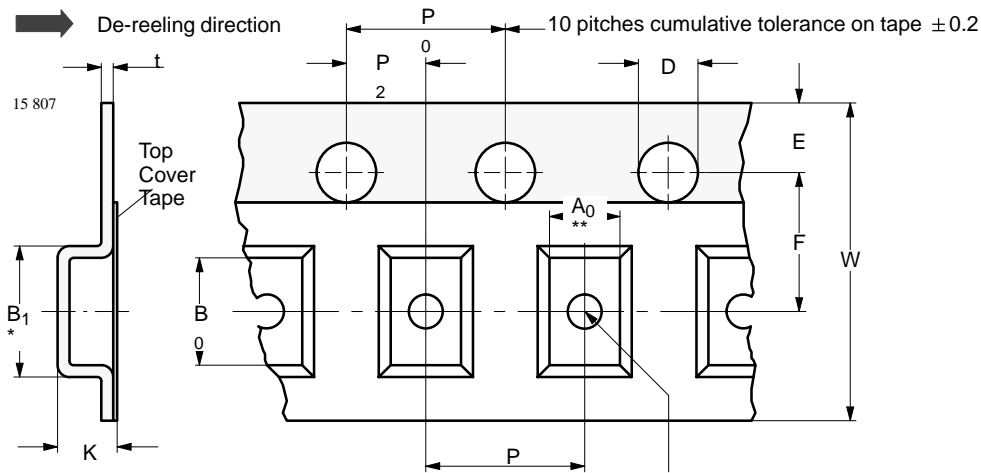
14 492

D²PAK (24mm)



14 494

Surface Mount



* For machine reference only, including draft and radii concentric around B₀
 ** See note 1 and table

D₁ for components
 2.0 mm x 1.2 mm and larger

Embossed Carrier Tape Specification (12, 16, 24mm Tape)

12, 16, 24mm Embossed Tape Dimensions
 (All dimensions in mm)

Tape Size	D	E	P ₀	t _{max}	A ₀ B ₀ K ₀	Constant Dimensions
12, 16, 24 mm	1.55(+0.10 -0.0)	1.75 ± 0.10	4.0 ± 0.10	0.400	see Note 1	

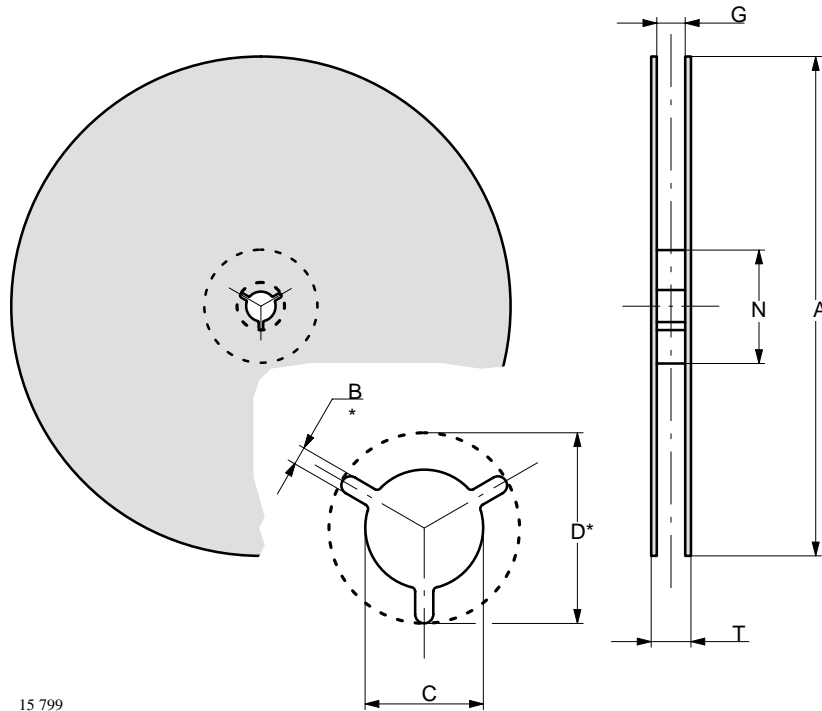
Tape Size	B ₁ Max	D ₁ Min	F	K Max	P ₂	R Min	W	Product Type
12mm	8.2	1.5	5.5 ± 0.05	4.5	2.0 ± 0.05	30	12.0 ± 0.30	DO214AC, SMA, SMB
16mm	12.1	1.5	7.5 ± 0.10	3.29 3.70	2.0 ± 0.10 4.0 ± 0.10	40	16.0 ± 0.30	SMC, DFS
24mm	20.1	1.5	11.5 ± 0.10	6.5	2.0 ± 0.10	50	24.0 ± 0.30	D ² PAK

Tape Size	P			
	4.0 ± 0.10	8.0 ± 0.10	12.0 ± 0.10	16.0 ± 0.10
12mm	X	X	-	-
16mm	-	X	X	-
24mm	-	-	-	X

Notes: 1. A₀ B₀ K₀ are determined by component size. The clearance between the component and the cavity must be within 0.05mm min. to 0.50mm max. for 8mm tape, 0.05mm min. to 0,65mm max. for 12mm tape and 0.15mm min. to 0.90mm max. for 16mm tape. Add 0.05mm min. to 1.00mm min. for 24mm tape and larger. The component cannot rotate more than 20° within the determined cavity, see sketch next page.

2. Tape and components shall pass around radius 'R' without damage.

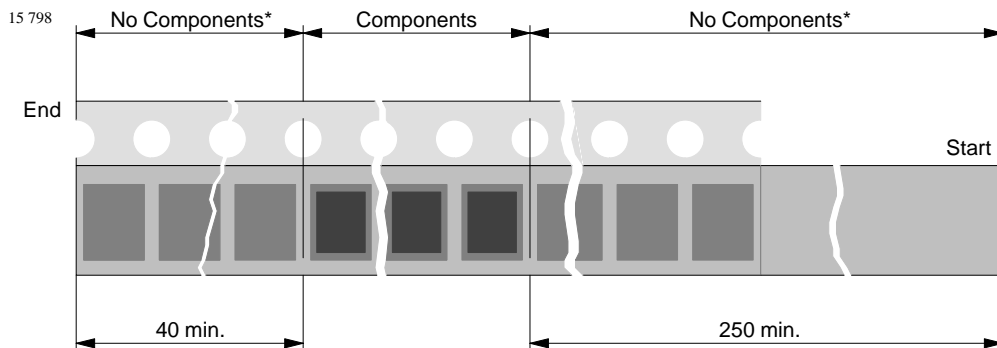
Surface Mount (continued)



15 799

Tape Size	A Max	B Max	C	D Max	N Min	G	T Max
12mm	330	1.5	13.0 ± 0.20	20.2	50	12.4 ^{+2.0} _{-0.0}	18.4
12mm	180	1.5	13.0 ± 0.20	20.2	50	12.4 ^{+2.0} _{-0.0}	18.4
16mm	330	1.5	13.0 ± 0.20	20.2	50	16.4 ^{+2.0} _{-0.0}	22.4
24mm	330	1.5	13.0 ± 0.20	20.2	50	24.4 ^{+2.0} _{-0.0}	30.4

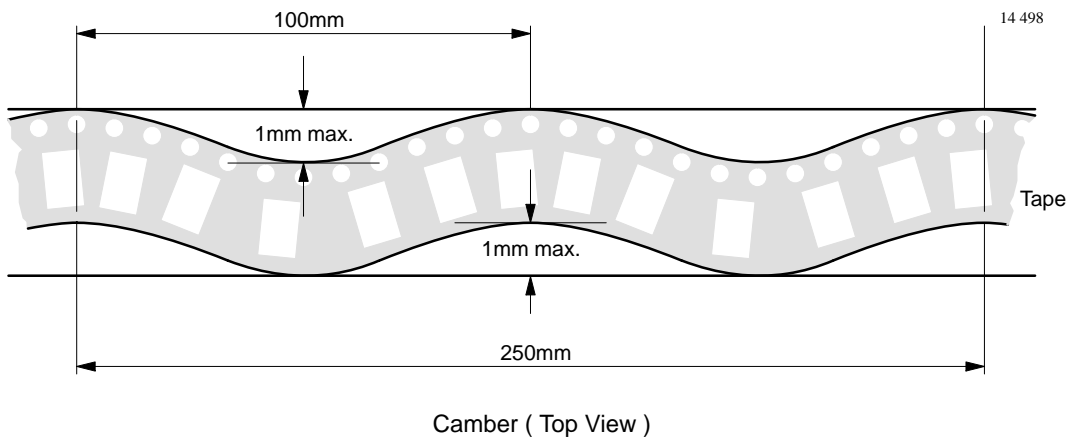
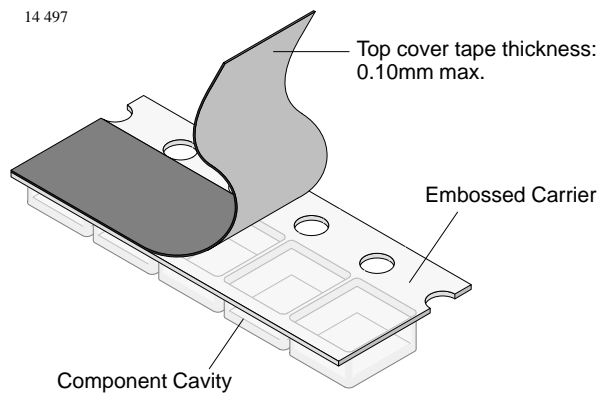
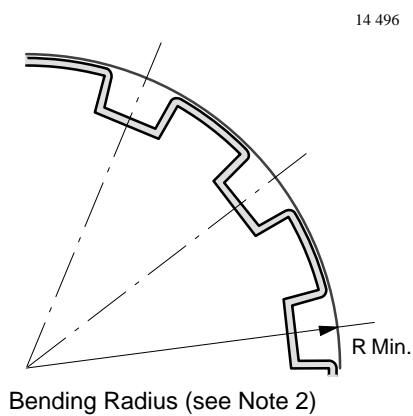
Start and Finish Specifications



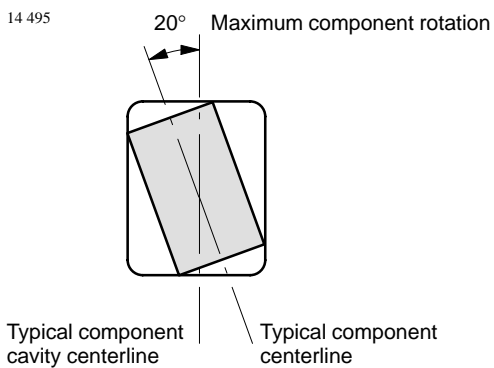
* Empty component pockets sealed with cover tape

User direction of feed →

Surface Mount (continued)



Allowable camber to be 1mm/ 100mm non-accumulative over 250mm.





Through– Hole

Device Type	Avaliable Packaging					
	Bulk		13" Tape&Reel	13"(P) Tape & Reel	10"(P) Tape & Reel	Ammo Pack
	Quantity per Tube	Quantity per Tray	Quantity per Reel	Quantity per Reel	Quantity per Reel	Quantity per Box
A405			5K			3K
DFM	50					
DO15			4K			2K
DO201			1.2K			1K
DO201AD			1.2K			1K
DO41			5K			3K
DO220	1800					
DOT30B					5000	5000
GBJ	15					
GBPC/W		100				
KBJ	20					
KBP	35					
KBPC/W		100				
MP/W		100				
PBL		100				
PBPC3		200				
PBPC8						
PBU		100				
R6			700			
SOD57					5000	5000
SOD64				5000		2500
T1			5K			3K
TO220	50					
TO3P	30					
WOG						

Through-Hole (continued)

Reel Dimensions

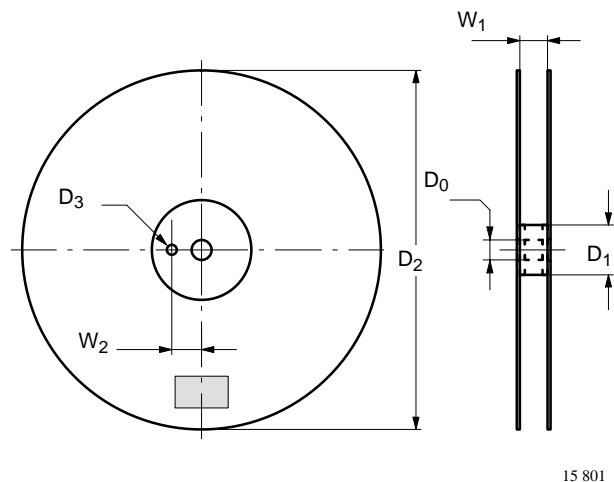
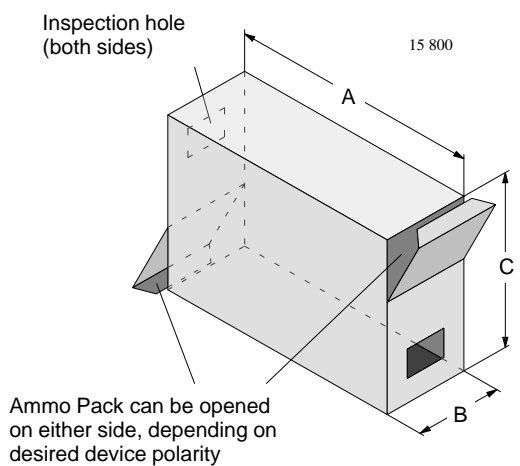
Description	Symbol	Reel Size				
		13"			13"(P)	10"(P)
Arbor Hole Diameter	D ₀	16.6 typ.	26.0 typ.	30.0 typ.	55	55
Core Diameter (O.D.)	D ₁	81.0 typ.			60	60
Reel Diameter	D ₂	345.0 ± 15.0			350	250
Drive Hole Diameter	D ₃	9.5 ± 0.5	7.6 ± 0.8		–	–
Reel Width	W ₁	80.0 ± 5.0			69	69
Drive/Arbor Hole Spacing	W ₂	26.9 ± 1.1			–	–
Core Material		Plastic or Metal			Plastic	Plastic
Reel Material		Plastic / Corrugated Board			Plastic	Plastic

Ammo Pack Dimensions

Description	Symbol	Specification	
		Inches	Millimeters
Length	A	10.25 ± 0.2	260 ± 5.0
Width	B	2.75 ± 0.2	70 ± 5.0
Height	C	5.75 ± 0.65	146 ± 16.0

Material: corrugated board (neutral)

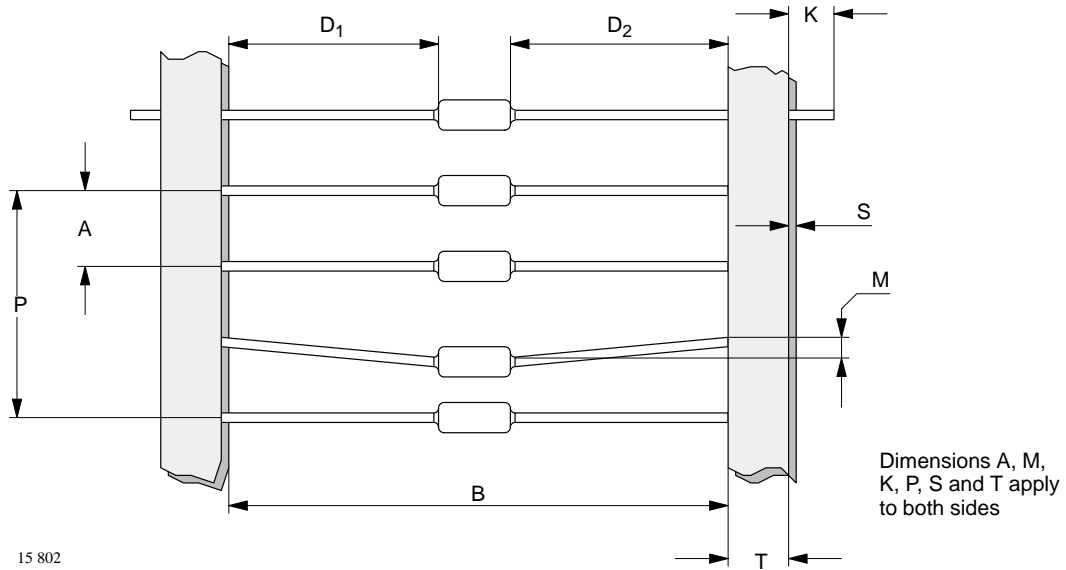
Thickness: 3.00 ± 0.5mm (0.12 ± 0.02")



Through-Hole (continued)

Reel and Ammo Pack Taping Specifications

Description	Symbol	Body	Specification (mm)
Component Pitch	A	DO15, DO41, A405, DOT30B, SOD57, DO201, DO201AD, R6, SOD64	5.0 ± 0.5 10.0 ± 0.5
Inside Tape Spacing	B	All	52.4 ± 1.5
Lead to Lead Eccentricity	ID1–D2I	All	1.4 max
Lead Extension	K	All	0.8 max
Lead Bending	M	All	1.2 max
Cumulative Pitch	P	All	2.0 per 10 pitch
Exposed Adhesive	S	All	0.8 max
Tape Width	T	All	6.0 ± 0.4
Tape Leader	Beginning and end of reel or ammo pack.		300.0 min
Empty Spaces	Consecutive missing components not allowed		< 0.1%
Polarity Marking	All polarized components shall be oriented in the same direction. The cathode tape shall be colored, and the anode tape shall be white or light beige.		





Vishay Telefunken

Packaging Ordering Code

Suffix to Partnumber	Packaging Version
- TR	Tape and Reel (10" / 13") Leaded (Sinterglass)
- T	Tape and Reel (13") Leaded (Plastic Packages)
- B	Bulk / Tray (Bridges)
-7 , -TR	7" SMD - Reel
-13 , -TR3	13" SMD - Reel
-A , -TAP	Ammobox
- P	Tube