

# VISHAY COMPONENTS SMD Varistors and Thermistors



## VISHAY BC COMPONENTS - NTC THERMISTORS, ACCURACY LINE

NTCLE - (Historical number 2322/pb version or 2381/pbF 640 6XXXX) - Series



DIMENSIONS mm

### Applications:

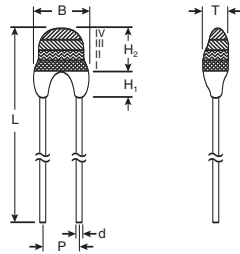
- Temperature sensing and control

### Features:

- Accuracy over a wide temperature range
- High stability over a long life
- Excellent price/performance ratio
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### Specifications:

- Operating temperature range at zero dissipation, continuously: -40 to 125°C
- at zero dissipation, for short periods: 0 to 25°C
- Tolerance on  $R_{25}$  -value:  $\pm 0.5\%$  to  $\pm 3\%$
- Storage temperature range: -25 to +40°C
- Maximum relative humidity: 80%



NOTE 1: Dependent upon  $R_{25}$ -tolerance, the band IV is colored as follows:  
 - for  $R_{25} \pm 3\%$ , Orange  
 - for  $R_{25} \pm 5\%$ , Gold

Code Number 2381 640	$B_{max}$	d	$H_2$		$H_2$ max	L	P	$T_{max}$
			min.	max.				
6.338 to 6.221	5.0	0.6 $\pm 0.06$	1.0	4.0	6.0	24 $\pm 1.5$	2.54	4.0
6.331 to 6.474	3.3 $\pm 0.5$	0.6 $\pm 0.06$	-	2.0 $\pm 1.0$	6.0	24 $\pm 1.5$	2.54	3.0

For quantities greater than 1000, call for quote.

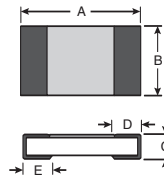
MOUSER STOCK NO.	Vishay Part No.	Vishay Historical No.	$R_{25}$ ( $\Omega$ )	$R_{25}$ Tolerance	Color Code (see drawing and note1)			Price Each			
					I	II	III	1	50	100	500
594-NTCLE100E3109JB0	NTCLE100E3109JB0	2322/pb or 2381/pbF 2381 640 63109	10	5%	brown	black	black	.64	.60	.56	.48
594-NTCLE100E3339JB0	NTCLE100E3339JB0	2322/pb or 2381/pbF 2381 640 63339	33	5%	orange	orange	black	.64	.60	.56	.48
594-NTCLE100E3682JB0	NTCLE100E3682JB0	2322/pb or 2381/pbF 2381 640 63682	6.8K	5%	blue	grey	red	.64	.60	.56	.48
594-NTCLE100E3103JB0	NTCLE100E3103JB0	2322/pb or 2381/pbF 2381 640 63103	10K	5%	brown	black	orange	.64	.60	.56	.48
594-NTCLE100E3103HB0	NTCLE100E3103HB0	2322/pb or 2381/pbF 2381 640 66103	10K	3%	brown	black	orange	.76	.72	.67	.57

## VISHAY DALE TFPT SERIES LINEAR PTC THERMISTORS

DIMENSIONS IN. (mm)

### Features:

- Solderable wraparound terminations
- Alumina substrate base with PTC thin film element
- Operating temperature: -55°C to +125°C
- TCR Tolerance ppm  $^{\circ}C$  is  $\pm 400$



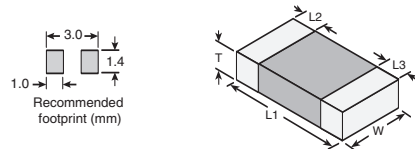
Model	A	B	C	D	E
TFPT0603	0.063 $\pm$ 0.006 (1.60 $\pm$ 0.15)	.031 + .006 - .002 (.80 + .15 - .05)	0.020 $\pm$ 0.004 (0.50 $\pm$ 0.10)	0.012 $\pm$ 0.008 (0.30 $\pm$ 0.20)	0.012 $\pm$ 0.008 (0.30 $\pm$ 0.20)
TFPT0805	0.079 $\pm$ 0.006 (2.60 $\pm$ 0.15)	0.049 $\pm$ 0.006 (1.25 $\pm$ 0.15)	0.020 $\pm$ 0.006 (0.50 $\pm$ 0.15)	0.016 $\pm$ 0.010 (0.40 $\pm$ 0.25)	0.016 $\pm$ 0.010 (0.40 $\pm$ 0.25)
TFPT1206	0.126 $\pm$ 0.006 (3.20 $\pm$ 0.15)	0.063 $\pm$ 0.006 (1.60 $\pm$ 0.15)	0.022 $\pm$ 0.006 (0.56 $\pm$ 0.15)	0.020 $\pm$ 0.010 (0.50 $\pm$ 0.25)	0.020 $\pm$ 0.010 (0.50 $\pm$ 0.25)

MOUSER STOCK NO.	Vishay Part No.	Case Size	Ohmic Value	Tolerance	Max. Working Voltage RCWV	Power Rating	Price Each					Reel Qty.	Price Per Piece
							1	50	100	500	1000		
71-TFPT0603L1501FV	TFPT0603L1501FV	0603	1.5K	1	30	75mW	1.06	.97	.93	.85	.81	5000	.67
71-TFPT0603L1002JV	TFPT0603L1002JV	0603	10K	5	30	75mW	.99	.90	.86	.78	.74	5000	.60
71-TFPT0805L1001FV	TFPT0805L1001FV	0805	1K	1	40	100mW	1.06	.97	.93	.85	.81	5000	.67
71-TFPT0805L1501FV	TFPT0805L1501FV	0805	1.5K	1	40	100mW	1.06	.97	.93	.85	.81	5000	.67
71-TFPT0805L3901FV	TFPT0805L3901FV	0805	3.9K	1	40	100mW	1.06	.97	.93	.85	.81	5000	.67
71-TFPT1206L5601FV	TFPT1206L5601FV	1206	5.6K	1	50	125mW	1.06	.97	.93	.85	.81	5000	.67
71-TFPT1206L1002FV	TFPT1206L1002FV	1206	10K	1	50	125mW	1.06	.97	.93	.85	.81	5000	.67

## VISHAY BC 2322 675 2XXXX SERIES TEMPERATURE SENSING PTC'S

### Features:

- Suitable for reflow and wave soldering
- Contact surfaces are made of Ag, Ni and an external layer of Sn
- Operating temperature range at maximum voltage: -25°C to  $T_n + 15^{\circ}C$
- Resistance at 25°C: 470 $\Omega$   $\pm$  50%
- Maximum voltage: 25V(dc or rms)



DIMENSIONS mm

Model	W	T	L1	L2/L3
2322 675 2xxxx	1.25 $\pm$ 0.2	0.90 $\pm$ 0.15	2.00 $\pm$ 0.2	0.4 $\pm$ 0.25

MOUSER STOCK NO.	Vishay Part No.	$T_n$ ( $^{\circ}C$ )	$R_{max}$ @ $T_n - 5^{\circ}C$	$R_{min}$ @ $T_n + 5^{\circ}C$	$R_{min}$ @ $T_n + 15^{\circ}C$	Price Each					Reel Qty.	Price Per Piece
						1	50	100	500	1000		
594-2322-675-20707	232267520707	70	4700	4700	15000	.88	.78	.64	.61	.52	4000	.30
594-2322-675-20907	232267520907	90	4700	4700	15000	.88	.78	.64	.61	.52	4000	.30
594-2322-675-21007	232267521007	100	4700	4700	15000	.88	.78	.64	.61	.52	4000	.30
594-2322-675-21307	232267521307	130	4700	4700	15000	.88	.78	.64	.61	.52	4000	.30
594-2322-675-21407	232267521407	140	4700	4700	15000	.88	.78	.64	.61	.52	4000	.30

## VISHAY BC 2322 661 97XXX SERIES PTC THERMISTORS FOR OVERLOAD PROTECTION

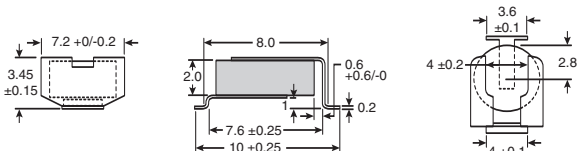
DIMENSIONS mm

### Features:

- Ideal for pick-and-place circuit assembly
- Low mounting height
- Suitable for reflow soldering
- Small ceramic diameter for faster response
- Low heat transfer to substrate
- Flat terminations for stable positioning and good solderability

### Applications:

- Telecom
  - Set top box
  - Modems
  - Central office switching (C.O.)
  - Subscriber terminal equipment (T.E.)
  - Cable TV communications



MOUSER STOCK NO.	Vishay Part No.	$R_{25}$		Voltage max. (V)	$I_{nt}$ @		$I_t$ @ 25°C	Max. Trip-Time		Price Each				Reel Qty.	Price Per Piece
		( $\Omega$ )	(%)		25°C	70°C		$t_t$ (s)	@ $I_t$ (mA)	1	25	50	100		
		594-2322-661-97002	232266197002		40	25		265	80	50	130	2.5	500		
594-2322-661-97012	232266197012	10(1)	20	245	165	100	270	3	1000	1.54	1.36	1.12	1.05	1500	.58
594-2322-661-97016	232266197016	10(1)	20	245	165	100	270	3	1000	1.58	1.40	1.15	1.08	1500	.59

NOTES:  
 1. These types pass "ITU-T K20/21" telecommunication protection recommendation.