

## SMD NTC Thermistors with Enhanced Stability



### FEATURES

- Monolithic SMD with nickel barrier and pure tin
- Wide temperature range from - 40 °C to + 125 °C
- Enhanced stability throughout the lifetime (maximum variation of initial  $R_{25\text{ °C}}$  of  $\pm 0.5\%$  after 10 000 hours at any temperature)
- Ideal for wave and reflow soldering
- One  $R_{25\text{ °C}}$ -value per case 0402, 0603, 0805
- Delivered on punched paper tape on reel
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	100K to 210K	$\Omega$
Tolerance on $R_{25}$ -value	1	%
$B_{25/85}$ -value	3590	K
Tolerance on $B_{25/85}$ -value	$\pm 1$	%
Maximum power dissipation (by case)	70 (0402), 120 (0603), 210 (0805)	mW
Response time (63.2 % 25 °C to 750 °C still air (for info by case)	4 (0402), 6 (0603), 10 (0805)	s
Dissipation factor $\delta$ in still air (for each case)	2 (0402), 3 (0603), 3.5 (0805)	mW/K
Operating temperature range	- 40 to + 125	°C
Weight	1 to 7	mg

### APPLICATIONS

- All applications that require the utmost stability in time (medical application, heat counting)

### MOUNTING

Please refer to information provided for generic NTCS serie.

### PACKAGING

Available in 8 mm punched paper tape on reel package of 4000 units (case 0603 and 0805) and 10 000 (case 0402).

### DESIGN-IN SUPPORT

For complete Curve Computation, visit:

[www.vishay.com/resistors-non-linear/ntc-curve-list/](http://www.vishay.com/resistors-non-linear/ntc-curve-list/)

ELECTRICAL DATA AND ORDERING INFORMATION					
VISHAY SAP ORDERING NUMBER	$R_{25}$ -VALUE (k $\Omega$ )	TOLERANCE ON $R_{25}$ (%)	$B_{25/85}$ -VALUE (K)	$B_{25/85}$ -TOLERANCE (%)	DESCRIPTION
NTCS0402E3214SMT	210	1	3590	$\pm 1$	SMD NTC thermistor 0402 Ni barrier
NTCS0603E3124SMT	122	1	3590	$\pm 1$	SMD NTC thermistor 0603 Ni barrier
NTCS0805E3104SMT	100	1	3590	$\pm 1$	SMD NTC thermistor 0805 Ni barrier

DIMENSIONS in millimeters				
	PARAMETER	VALUE		
	Case	0402	0603	0805
W	W	0.5 $\pm$ 0.15	0.8 $\pm$ 0.15	1.25 $\pm$ 0.15
T	T	0.5 $\pm$ 0.15	0.8 $\pm$ 0.15	0.8 $\pm$ 0.15
L1, L3	L1, L3	0.1 min.	0.2 min.	0.2 min.
L2	L2	0.3 min.	0.4 min.	0.55 min.
L	L	1 $\pm$ 0.15	1.6 $\pm$ 0.15	2 $\pm$ 0.2

#### Note

- Non-dimensioned details do not affect the performance of the thermistors.



RELIABILITY INFORMATION

After a test of storage at any temperature within the temperature range, the drift of electrical resistance at 25 °C is always lower than ± 0.5 % (see here under typical figures for drift after storage during 10 000 h at maximal temperature 125 °C). The same type of stability is also observed in thermal shocks between the two extreme values of the temperature range. The tests are performed according to IEC 60068-2-2 and 2-14.

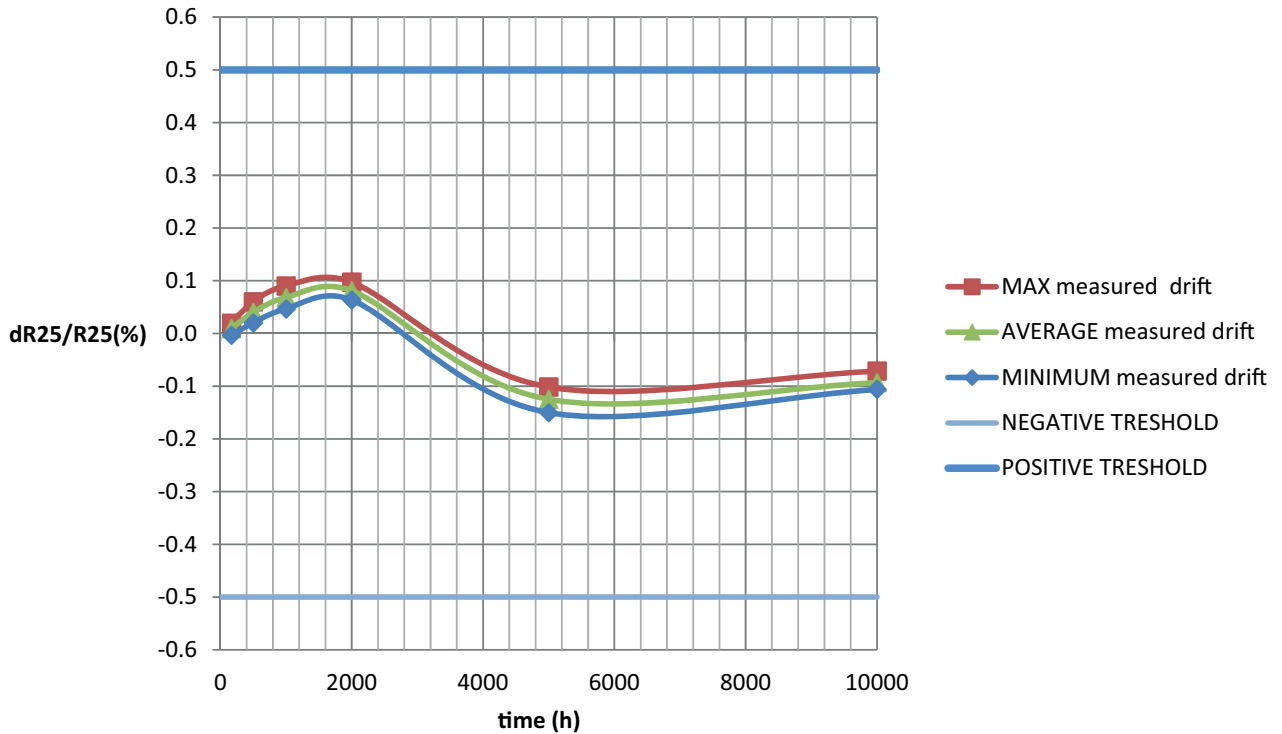


Fig. 1 - R<sub>25</sub> °C Drift after Storage at 125 °C for 0603 Case

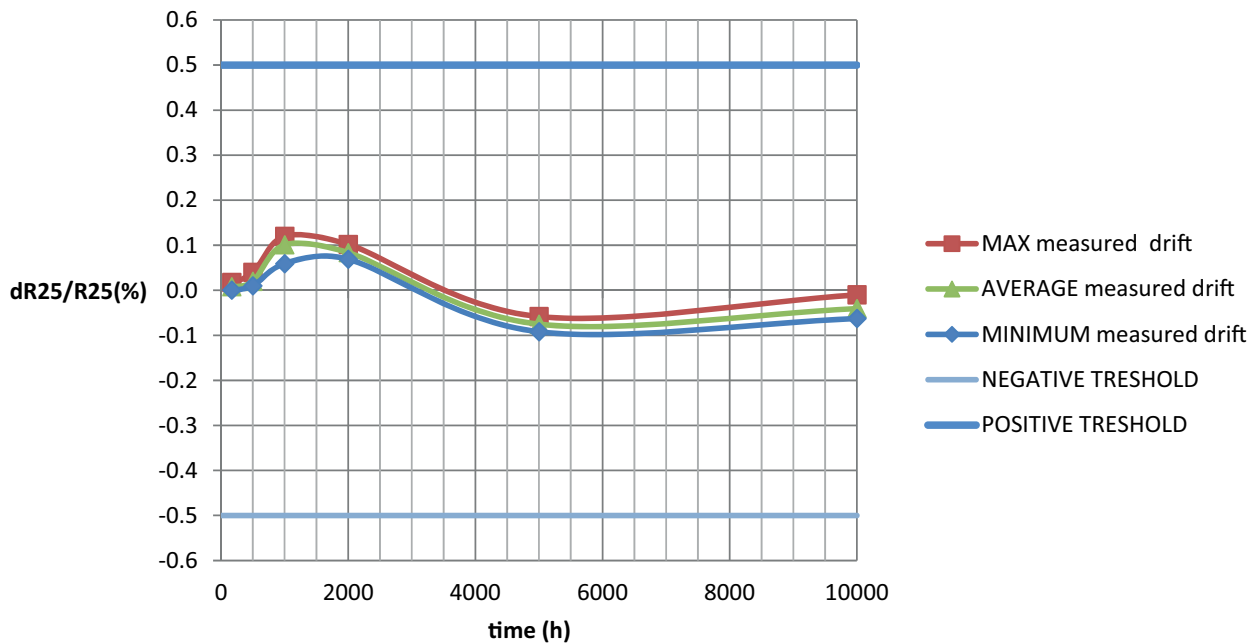


Fig. 2 - Drift in Storage at 125 °C for 0402 Case

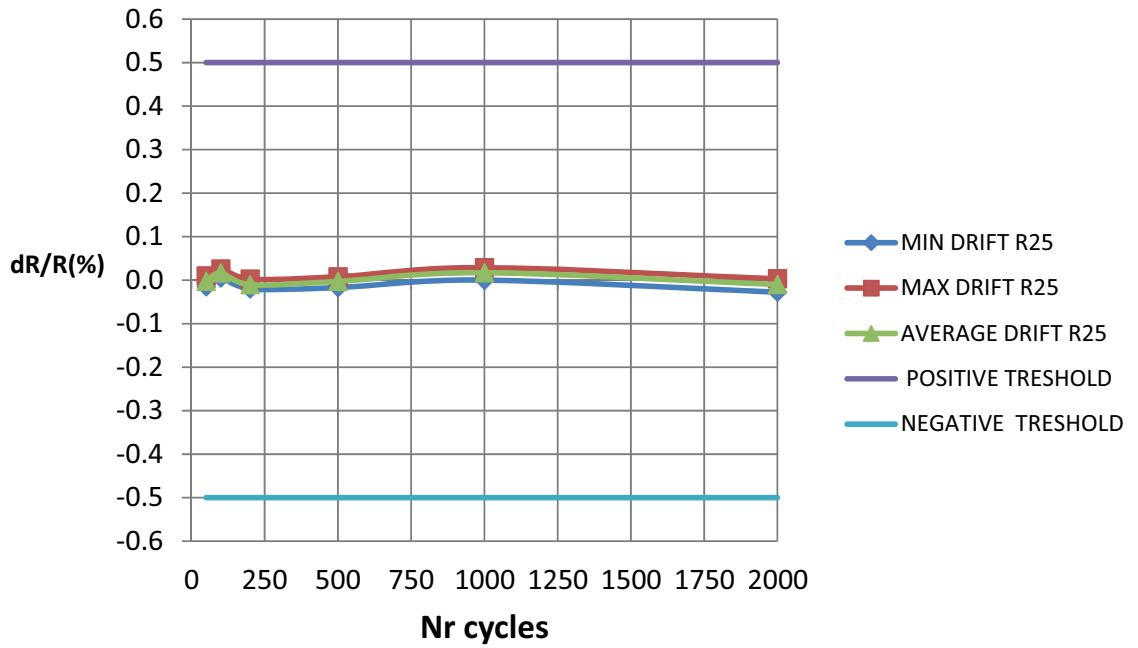


Fig. 3 -  $R_{25}^{\circ C}$  Drift in Thermal Shocks - 40 °C, 15 min/125 °C, 15 min



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