



**THE DATASHEET OF  
NTCS0805E3103FMT**



## SMD 0805, Glass Protected NTC Thermistors



### LINKS TO ADDITIONAL RESOURCES



QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	1K to 680K	Ω
Tolerance on $R_{25}$ -value	± 1; ± 2; ± 3; ± 5	%
$B_{25/85}$ -value	3370 to 4125	K
Tolerance on $B_{25/85}$ -value	± 1; ± 3	%
Maximum power dissipation at 25 °C $P_{max25}$	210	mW
Thermal time constant $\tau$	≈ 10	s
Dissipation factor D	3.5	mW/K
Operating temperature range at zero power <sup>(1)</sup>	-55 to +150	°C
Storage temperature range	-55 to +150	°C
Weight	≈ 0.008	g

#### Note

<sup>(1)</sup> Zero power is considered as measuring power maximum 1 % of  $P_{max25}$

### AGENCY APPROVALS

Agency approval documents, please see:  
[www.vishay.com/ppg?29044&documents](http://www.vishay.com/ppg?29044&documents)

### DESIGN-IN SUPPORT

For complete curve computation, please visit:  
[www.vishay.com/thermistors/ntc-rt-calculator/](http://www.vishay.com/thermistors/ntc-rt-calculator/)

### FEATURES

- TCR ranging from -6 %/K at -40 °C to -2 %/K at 150 °C
- Tolerance on  $R_{25}$  down to 1 %, and on  $B_{25/85}$  down to 1 %
- Suitable for wave or reflow soldering
- NiSn terminations
- Fully glass coated and protected
- cULus recognized, file E148885 (UL category XGPU2 / XGPU8)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE GRADE


**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**

### APPLICATIONS

- Temperature sensing, protection and compensation in automotive, industrial, telecom and consumer applications. Examples are:
  - Battery chargers
  - Power supplies
  - Office equipment
  - LCD compensation
  - In-car entertainment

### DESCRIPTION

Size 0805 (M2012) glass protected SMD chip thermistor with negative temperature coefficient (TCR) and matte tin (Sn) plated terminations. The device has no marking.

### PACKAGING

Available in 8 mm punched paper tape on reel package of 4000 units.

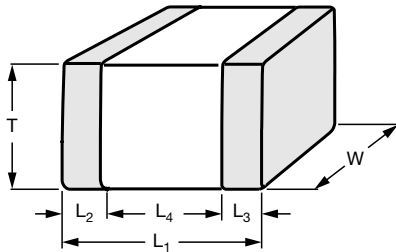
### CAUTIONS AND WARNINGS ON MOUNTING AND HANDLING

Please read the special instructions: see [www.vishay.com/doc?29224](http://www.vishay.com/doc?29224).

ELECTRICAL DATA AND ORDERING INFORMATION					
$R_{25}$ (Ω)	$R_{25}$ -TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$ -TOL. (± %)	UL RECOG. 	SAP MATERIAL AND ORDERING NUMBER <sup>(1)</sup>
1000	3, 5	3370	1		NTCS0805E3102*LT
1500	3, 5	3420	1		NTCS0805E3152*LT
2200	1, 2, 3, 5	3600	1	✓	NTCS0805E3222*MT
4700	1, 2, 3, 5	3500	1		NTCS0805E3472*MT
5000	1, 2, 3, 5	3480	1		NTCS0805E3502*LT
10 000	1, 2, 3, 5	3430	3	✓	NTCS0805E3103*LT
10 000	1, 2, 3, 5	3570	3	✓	NTCS0805E3103*MT
10 000	1, 2, 3, 5	3940	1	✓	NTCS0805E3103*HT
15 000	1, 2, 3, 5	3700	1	✓	NTCS0805E3153*MT
22 000	1, 2, 3, 5	3800	1	✓	NTCS0805E3223*HT
33 000	1, 2, 3, 5	3920	1	✓	NTCS0805E3333*HT
47 000	1, 2, 3, 5	3960	1	✓	NTCS0805E3473*HT
68 000	1, 2, 3, 5	4100	1	✓	NTCS0805E3683*XT
100 000	1, 2, 3, 5	3590	1	✓	NTCS0805E3104*MT
100 000	1, 2, 3, 5	4100	1	✓	NTCS0805E3104*XT
330 000	1, 2, 3, 5	3930	1	✓	NTCS0805E3334*HT
470 000	1, 2, 3, 5	4025	1	✓	NTCS0805E3474*XT
680 000	1, 2, 3, 5	4125	1	✓	NTCS0805E3684*XT

#### Note

<sup>(1)</sup> Replace \* in SAP material number by J for ± 5 %, H for ± 3 %, G for ± 2 %, F for ± 1 % tolerance on  $R_{25}$

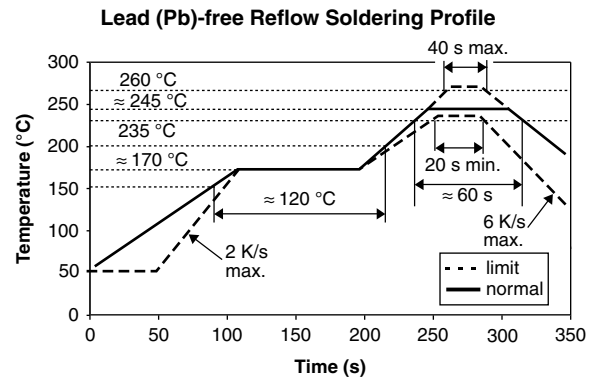
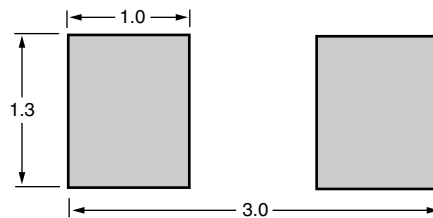
**DIMENSIONS**


L <sub>1</sub>	W	T	L <sub>2</sub> AND L <sub>3</sub> MIN.	L <sub>4</sub> MIN.
2.0 ± 0.2	1.25 ± 0.15	0.8 ± 0.15	0.2	0.55

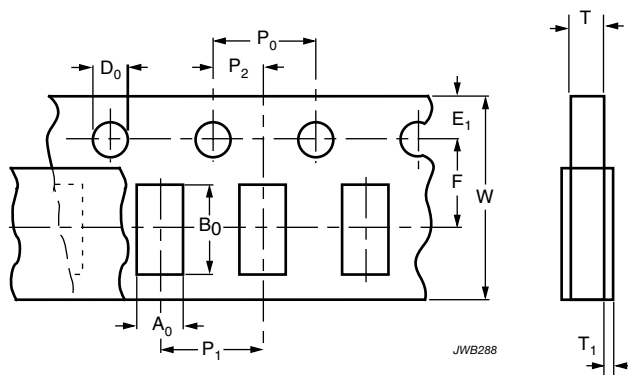
**SOLDERING CONDITIONS**

 Soldering, handling, and mounting conditions are detailed in the instructions document: see [www.vishay.com/doc?29224](http://www.vishay.com/doc?29224).

Typical examples of a soldering processes that will provide reliable joints without damage, are shown below.


**Dimensions of the solder lands**

**PACKAGING**
**TAPE SPECIFICATIONS**

All tape specifications are in accordance with IEC 60286-3. Basic dimensions are given below. Carrier tape material is paper.

**PAPER TAPE**

**DIMENSIONS OF PAPER TAPE in millimeters**

PARAMETER	DIMENSION
A <sub>0</sub> <sup>(1)</sup>	1.7 ± 0.2
B <sub>0</sub> <sup>(1)</sup>	2.35 ± 0.1
W	8.0 ± 0.2
E <sub>1</sub>	1.75 ± 0.1
F	3.5 ± 0.05
D <sub>0</sub>	1.55 ± 0.05
P <sub>0</sub> <sup>(2)</sup>	4.0 ± 0.1
P <sub>1</sub>	4.0 ± 0.1
P <sub>2</sub>	2.0 ± 0.05
T tape thickness max.	1.1
T <sub>1</sub> cover tape thickness max.	0.1

**Notes**

- (1) Measured 0.3 mm above base pocket
- (2) P<sub>0</sub> pitch cumulative error over any 10 pitches ± 1.0 mm



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