

Leadless NTC Thermistor Die Intended for Wire Bonding



QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	5063	Ω
Resistance value at 100 °C	493.3	Ω
Tolerance on R_{100} -value	± 5	%
$B_{25/85}$ -value	3435	K
Tolerance on $B_{25/85}$ -value	± 1	%
Operating temperature range	-55 to +175	°C
Response time (63.2 %) 25 °C to 85 °C still air (for info)	3	s
Dissipation factor δ in still air (for info, non-mounted die)	3	mW
Maximum power dissipation	50	mW
Weight	3	mg

MOUNTING

The thermistors are primarily intended for wire bonding. The parameters of the assembly process should be chosen in accordance with the lead-wire material.

The mounting process should be in compliance with the following guidelines and recommendations:

Die bonding:

- Gold electrode: silver epoxy gluing
- Silver electrode: SAC reflow soldering - silver epoxy gluing - nano silver sintering

Soldering process under reducing atmosphere (e.g. forming or formic gases) and ultrasonic cleaning processes can be applied under the condition that NTC die is not damaged. Consult Vishay for further assistance.

Wire bonding:

- The gold electrode has been tested for gold wire bonding with a wire diameter of 32 μm
- The silver electrode has been tested for aluminum wire bonding with a wire diameter of 300 μm

ELECTRICAL DATA AND ORDERING INFORMATION					
R_{25} (Ω)	R_{25} -TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$ -TOL. (± %)	DESCRIPTION	SAP MATERIAL AND ORDERING NUMBER
5063	7.43	3435	1	Bare die with top / bottom silver termination	NTCC200E4C90008

FEATURES

- Flat chip contacted top and bottom (silver)
- Wide temperature range from -55 °C to +175 °C
- Specified at 100 °C for better temp. control
- Highly resistant to thermal shocks
- Ideal for wire bonding (aluminum or gold depending on metalization type)
- Delivered on blister tape
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



APPLICATIONS

- High temperature sensing, control and compensation. E.g. IGBT modules (inverters in EV and HEV vehicles)
- IC and semiconductor protecting
- DC/AC power inverters and HIC overheat protecting

DESIGN-IN SUPPORT

For complete curve computation, please visit: www.vishay.com/thermistors/ntc-curve-list/

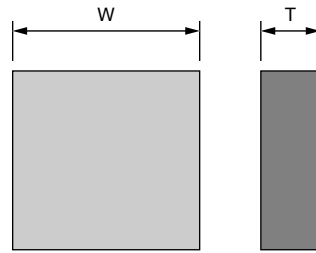
MARKING

The thermistors have no marking and have electrode termination design without orientation.

Encapsulation:

- In order to preserve the characteristics of the bonded die at long term an encapsulation is mandatory
- The encapsulation is defined by the customer. Silicon and epoxy encapsulations have been tested. For recommendations on compatible encapsulants contact Vishay

The behavior of the connected die is strongly depending on the particular processing and application conditions and we recommend to the users to test, verify, and validate for themselves their particular application. Vishay will not endorse any responsibility of an abnormal behavior of components having been processed in non validated executions.

DIMENSIONS in millimeters


Wire bondable surface

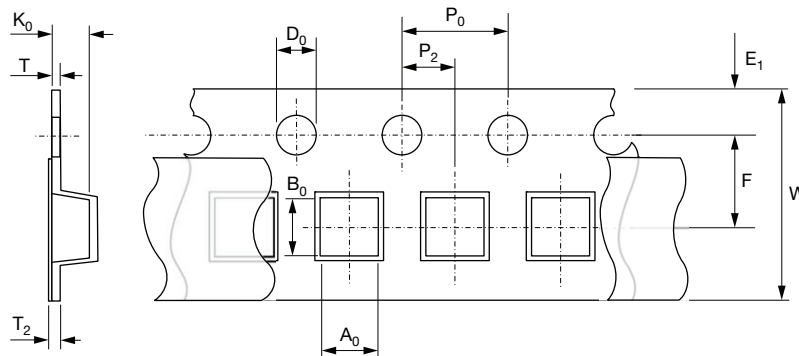
PARAMETER	VALUE
W	2 ± 0.1
T	0.7 max.

Note

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

PACKAGING INFORMATION

The components are delivered on 8 mm embossed blister tape (conductive polystyrene) conforming to EIA-481, with 2000 die per reel.



PARAMETER	VALUE
A ₀	Adapted to die dimensions
B ₀	Adapted to die dimensions
K ₀	Adapted to die dimensions
W	8 ± 0.3
F	3.5 ± 0.05
E ₁	1.75 ± 0.1
P ₀	4.0 ± 0.1
P ₂	2.0 ± 0.05
D ₀	1.5 ± 0.1
T	0.35 max.
T ₂	0.50 max.



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.