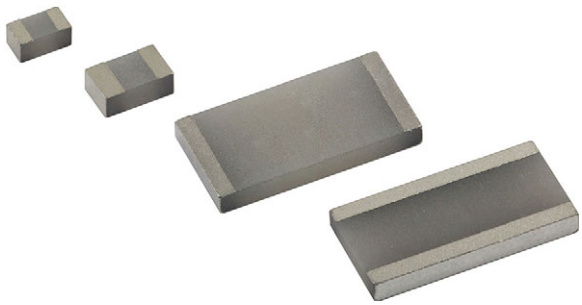
ThermaWick™ Thermal Jumper Surface Mount Chip



FEATURES

- Electrically isolated thermal conductor
- High thermal conductivity AlN substrate (170 W/m°K)
- Electrically isolated terminations
- Low capacitance
- Available with SnPb or lead (Pb)-free wrap terminations
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

RoHS* Available

HALOGEN FREE GREEN (5-2008) Available

ADDITIONAL RESOURCES

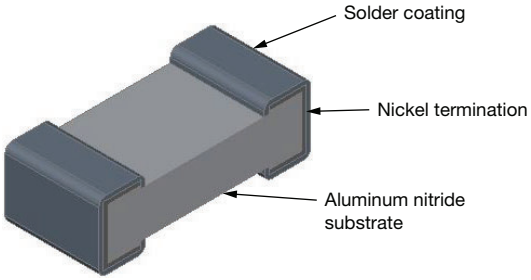
3D Models

THJP surface mount chips are designed to provide an electrically isolated thermal conductive pathway to a ground plane or heat sink while maintaining the electrical isolation of the device. The devices are constructed with aluminum nitride substrates in both SnPb and Pb-free wraparound termination styles. The low capacitance of the device makes them an excellent choice for high frequency and thermal ladder applications. Custom sizes available.

APPLICATIONS

- Power supplies and converters
- RF amplifiers
- Synthesizers
- Switch mode power supplies
- Pin and laser diodes
- Filters

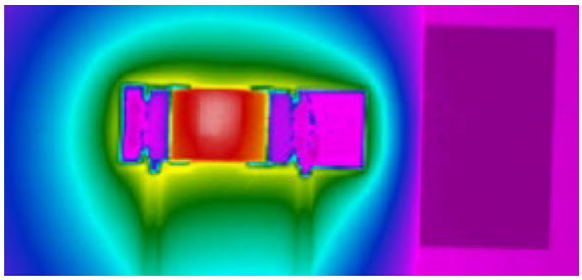
CONSTRUCTION



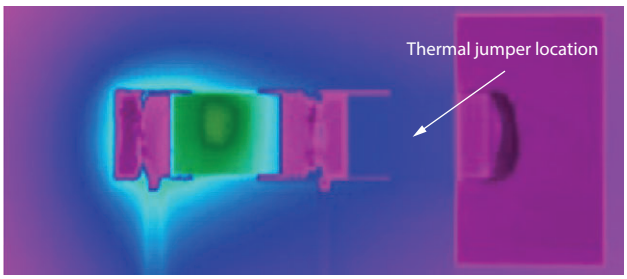
HEAT TRANSFER DEMONSTRATION

Chip surface temperature was measured using a FLIR SC645 thermal imaging system under ambient conditions. The devices were mounted to an FR4 test card designed with a 25 mm x 19 mm copper heat sink. Power was supplied to device to cause the surface temperature to stabilize at 150 °C. The device was then retested at the same power level with the thermal jumper connecting the device to the heat sink.

Example THJP 1206 Thermal Jumper Showing 36 % Surface Temperature Reduction



Ceramic Resistor Chip Without Thermal Jumper (149.8 °C)

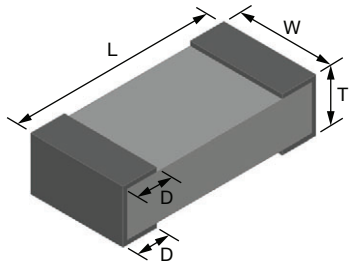


Ceramic Chip Resistor With Thermal Jumper (95.5 °C)

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

DIMENSIONS in inches



CASE SIZE	L	W	T	D
0603	0.061 ± 0.005	0.033 ± 0.005	0.030 ± 0.005	0.015 ± 0.005
0612	0.063 ± 0.005	0.126 ± 0.005	0.030 ± 0.005	0.015 ± 0.005
0805	0.079 ± 0.005	0.047 ± 0.005	0.030 ± 0.005	0.020 ± 0.005
1206	0.126 ± 0.005	0.063 ± 0.005	0.030 ± 0.005	0.020 ± 0.005
1225	0.126 ± 0.005	0.252 ± 0.005	0.030 ± 0.005	0.020 ± 0.005
2512	0.252 ± 0.005	0.126 ± 0.005	0.030 ± 0.005	0.020 ± 0.005

TYPICAL CHARACTERISTICS

CASE SIZE	0603	0612	0805	1206	1225	2512
Thermal resistance (°C/W)	14	4	13	15	4	15
Thermal conductance (mW/°C)	70	259	77	65	259	65
Capacitance (pF)	0.07	0.26	0.15	0.07	0.26	0.07

STANDARD MATERIAL SPECIFICATIONS

Substrate material	Aluminum nitride (170 W/m°K)
Termination (tin / lead)	Electroplate tin / lead over electroplate nickel
Termination (lead (Pb)-free)	Electroplate tin (e3) over electroplate nickel

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: THJP1206AST1

T	H	J	P	1	2	0	6	A	S	T	1

GLOBAL MODEL	CASE SIZE	THICKNESS	TERMINATION	PACKAGING
THJP	**0603** **0805** **0612** **1206** **1225** **2512**	**A** = 0.030"	**B** = wraparound Sn/Pb solder with nickel termination **S** = wraparound Sn (e3) solder with nickel termination RoHS compliant	**BS** = BULK 100 min., 1 mult. TAPE AND REEL **T0** = 100 min., 100 mult. **T1** = 1000 min., 1000 mult. **T3** = 300 min., 300 mult. **T5** = 500 min., 500 mult. **TF** = full reel **TS** = 100 min., 1 mult. **TI** = 100 min., 1 mult. (item single lot date code) **TP** = 100 min., 1 mult. (package unit single lot date code)

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. 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.

© 2019 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED