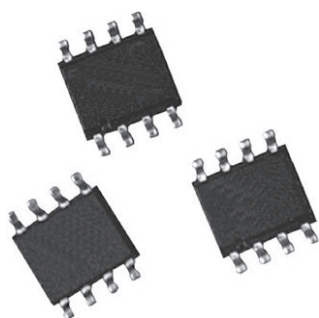


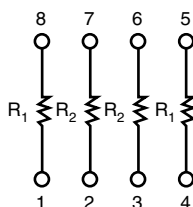
## Molded, 50 mil Pitch, Dual-In-Line Thin Film Divider, Surface Mount Resistor Network



 Actual Size

Vishay Dale Thin Film ORN series Dividers provide optimum ratio precision, small size and exceptional stability for most applications. They offer a wide ratio range that is listed in the selection guide and are available for immediate delivery. The tight ratio tolerance offered on the standard ratios will provide exceptional performance throughout life.

### SCHEMATIC



### FEATURES

- 0.068" (1.73 mm) maximum seated height
- Rugged molded case construction with no internal solder (JEDEC MS-012 variation AA package)
- Low TCR tracking  $\pm 5$  ppm/ $^{\circ}\text{C}$
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



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

### Note

\* Pb containing terminations are not RoHS compliant, exemptions may apply

### TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	25	5
	ABSOLUTE	RATIO
TOL.	0.1	0.05

### STANDARD RESISTANCE OFFERING ( $R_1/R_2$ )

RATIO	$R_1$	$R_2$
100:1	100K	1K
50:1	50K	1K
25:1	25K	1K
20:1	20K	1K
10:1	10K	1K
5:1	10K	2K
2:1	10K	5K

### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	8	-
Resistance Range	1000 $\Omega$ to 100 k $\Omega$ per resistor	-
TCR: Absolute	$\pm 25$ ppm/ $^{\circ}\text{C}$	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$
TCR: Tracking	$\pm 5$ ppm/ $^{\circ}\text{C}$	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$
Tolerance: Absolute	$\pm 0.1$ %	+ 25 $^{\circ}\text{C}$
Tolerance: Ratio	$\pm 0.05$ %	+ 25 $^{\circ}\text{C}$
Power Rating: Resistor	100 mW	Maximum at + 70 $^{\circ}\text{C}$
Power Rating: Package	400 mW	Maximum at + 70 $^{\circ}\text{C}$
Stability: Absolute	$\Delta R \pm 0.05$ %	2000 h at + 70 $^{\circ}\text{C}$
Stability: Ratio	$\Delta R \pm 0.015$ %	2000 h at + 70 $^{\circ}\text{C}$
Voltage Coefficient	< 0.1 ppm/V	-
Working Voltage	100 V max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$	-
Storage Temperature Range	- 55 $^{\circ}\text{C}$ to + 150 $^{\circ}\text{C}$	-
Noise	< - 30 dB	-
Thermal EMF	0.08 $\mu\text{V}/^{\circ}\text{C}$	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01$ %	1 year at + 25 $^{\circ}\text{C}$
Shelf Life Stability: Ratio	$\Delta R \pm 0.002$ %	1 year at + 25 $^{\circ}\text{C}$

### Note

- Tantalum nitride film is custom, consult factory

**DIMENSIONS AND IMPRINTING** in inches and millimeters

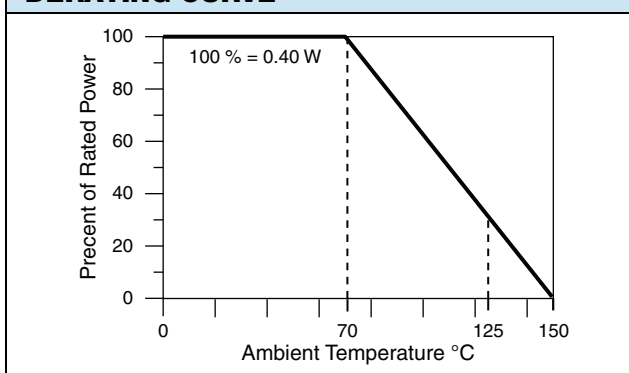
	DIMENSION	INCHES	MILLIMETERS
	A	0.157	3.99
	B	0.0165 ± 0.005	0.4 ± 0.06
	C	0.050	1.27
	D	0.195 max.	4.93
	E	0.008 ± 0.001	0.20 ± 0.03
	F	0.028 ± 0.001	0.71 ± 0.02
	G	0.239 ± 0.005	6.07 ± 0.13
	H	0.068 max.	1.73
	I	0.008 ± 0.002	0.22 ± 0.06
	Ø	2° to 6°	2° to 6°

**Note**

- Marking - Vishay symbol, part number from ordering information

**MECHANICAL SPECIFICATIONS**

Resistive Element	Passivated nichrome
Substrate Material	Silicon
Body	Molded epoxy
Terminals	Copper alloy
Lead (Pb)-free Option	100 % matte tin
Tin Lead Option	Sn90
Tin Lead and Lead (Pb)-free Finish	Plated

**DERATING CURVE**

**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: ORNA5-1UF

	O	R	N	A		5	-	1		U	F
O	R	N	T	A	1	0	0	-	1	U	F

GLOBAL MODEL (4 or 5 digits)
<b>ORNA</b> (Tin/lead)
<b>ORNTA</b> (Lead (Pb)-free) (e3)

RESISTANCE (3, 4 or 5 digits)
2-1
5-1
10-1
20-1
25-1
50-1
100-1

PACKAGING
TAPE AND REEL
<b>T0</b> = 100 min., 100 mult
<b>T1</b> = 1000 min., 1000 mult
<b>T3</b> = 300 min., 300 mult
<b>T5</b> = 500 min., 500 mult
<b>TF</b> = Full reel 3000
<b>TS</b> = 100 min., 1 mult
<b>UF</b> = TUBED

Historical Part Number example: ORNA2-1 (for reference purposes only)

ORNA2-1	2:1	10K	5K	2
PART NUMBER	DIVIDER NETWORK	R <sub>1</sub> VALUE	R <sub>2</sub> VALUE	R <sub>1</sub> /R <sub>2</sub> RATIO



## 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.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9