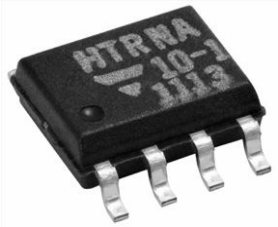
Molded, 50 mil Pitch, High Temperature (215 °C); Thin Film Surface Mount, Dual-In-Line Resistor Network



FEATURES

- Ratio tolerance to ± 0.05 %
- Ratio stability ± 0.1 %
- - 55 °C to 215 °C operating temperature range
- 0.068" (1.73 mm) maximum seated height
- Rugged molded case construction with no internal solder
- Low temperature coefficient (± 25 ppm/°C)
- JEDEC MS-012 STD variation AA package
- Gold terminations for durable attach bonds
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition

Pb-free Available

RoHS COMPLIANT

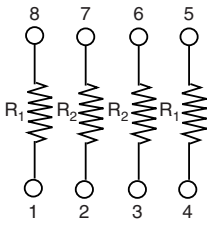
HALOGEN FREE

HTRN series resistor networks feature four isolated resistors with standard 50 mil pitch lead spacing. HTRN is ideal to be used in oil/gas exploration industry, automotive under the hood applications, and aerospace engine control high temperature applications. The networks feature close TCR tracking and tight ratio tolerance and are ideally suited for unity gain operational amplifier circuitry. The standard resistance offering listed are available for immediate delivery.

TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	25	5
	ABSOLUTE	RATIO
TOL.	0.1	0.05

SCHEMATIC



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
4:1	4K	1K

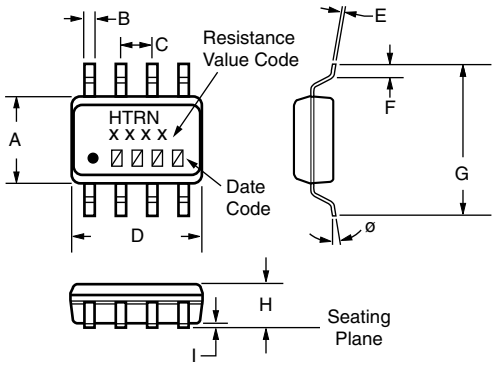
Note

- Consult factory for additional values and schematics

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	8	-
Resistance Range	1000 Ω to 100 kΩ per resistor	-
TCR: Absolute	± 25 ppm/°C	- 55 °C to + 125 °C
TCR: Tracking	± 5 ppm/°C	- 55 °C to + 125 °C
Tolerance: Absolute	0.1 %	+ 25 °C
Tolerance: Ratio	0.05 %	+ 25 °C
Power Rating: Resistor	100 mW	Maximum at + 70 °C
Power Rating: Package	400 mW	Maximum at + 70 °C
Stability: Absolute	ΔR ± 0.5 %	2000 h at + 215 °C at 25 % rated power
Stability: Ratio	ΔR ± 0.1 %	2000 h at + 215 °C at 25 % rated power
Voltage Coefficient	0.1 ppm/V (typical)	-
Working Voltage	100 V max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	- 55 °C to + 215 °C	-
Storage Temperature Range	- 55 °C to + 215 °C	-
Noise	< - 30 dB	-
Thermal EMF	0.08 µV/°C	-
Shelf Life Stability: Absolute	ΔR ± 0.01 %	1 year at + 25 °C
Shelf Life Stability: Ratio	ΔR ± 0.002 %	1 year at + 25 °C

DIMENSIONS AND IMPRINTING in inches and millimeters



DIMENSION	INCHES	MILLIMETERS
A	0.157	3.99
B	0.0165 ± 0.0025	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°

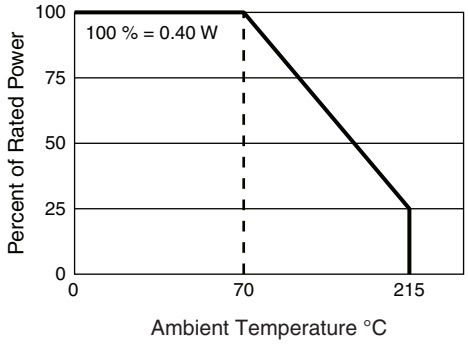
Note

- Marking - Vishay symbol, part number from ordering information

MECHANICAL SPECIFICATIONS

Resistive Element	Passivated nichrome
Substrate Material	Silicon
Body	Molded epoxy
Terminals	Copper
Termination Finish	Plated Ni/Pd/Au

DERATING CURVE



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: HTRN5-1UF

H	T	R	N	5	-	1	U	F

GLOBAL MODEL (4 digits)	RESISTANCE (3, 4 or 5 digits)	PACKAGING
HTRN	**2-1** **4-1** **5-1** **10-1** **20-1** **25-1** **50-1** **100-1**	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 3000 **TS** = 100 min., 1 mult **UF** = TUBED

Vishay Dale Thin Film Land Patterns

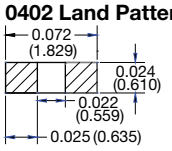
1. Scope

This technical note provides sample land patterns for Vishay Dale Thin Film SMT resistive products. The following drawings are based on IPC-SM-782 Surface Mount Design and Land Pattern Standard. These drawings are for reference only Vishay Thin Film recommends that the user contacts their PC board supplier for actual land patterns required. The pads are intended for lead (Pb)-free and tin / lead solder types.

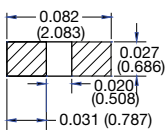
2. Product Series

Thin Film Surface Mount Chip Resistors (FC, L, P, PTN, PLT, PLTT. PLTU, PAT, PATT, PNM, M/D55342 QPL Series)

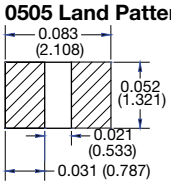
0402 Land Pattern



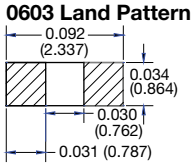
0502 Land Pattern



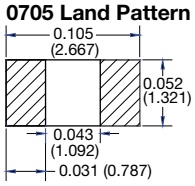
0505 Land Pattern



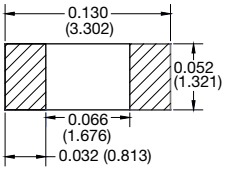
0603 Land Pattern



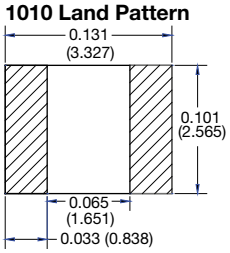
0705 Land Pattern



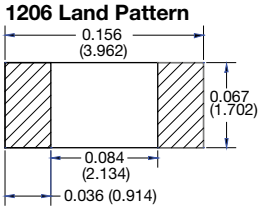
1005 Land Pattern



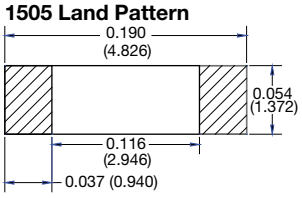
1010 Land Pattern



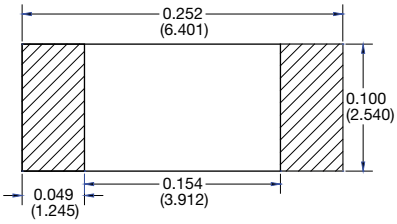
1206 Land Pattern



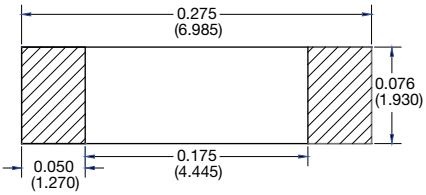
1505 Land Pattern



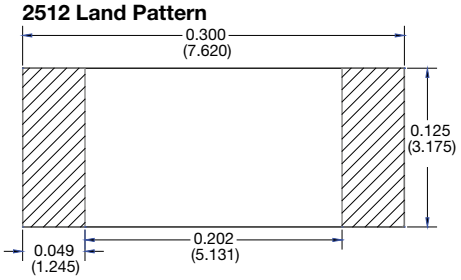
2010 Land Pattern



2208 Land Pattern

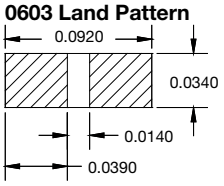


2512 Land Pattern

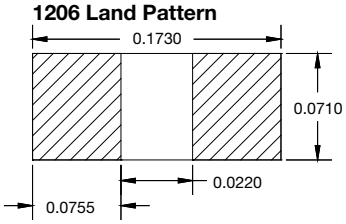


Thin Film Surface Mount Chip Resistors (PHP, PCAN Series)

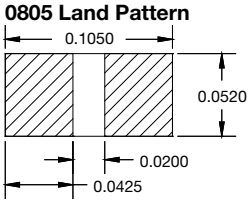
0603 Land Pattern



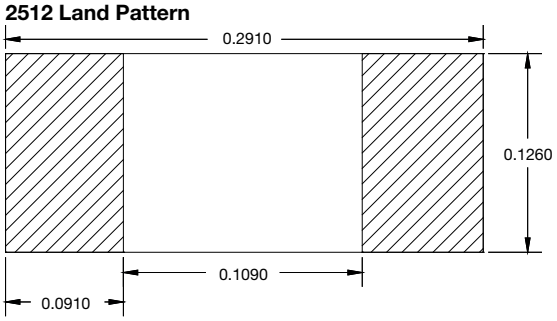
1206 Land Pattern



0805 Land Pattern

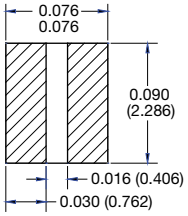


2512 Land Pattern

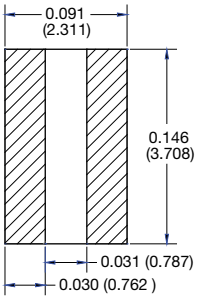


Thin Film Surface Mount Chip Resistors Long Axis Termination (L Series)

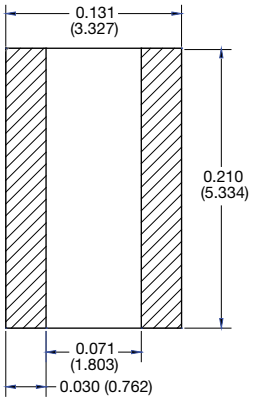
0508 Land Pattern



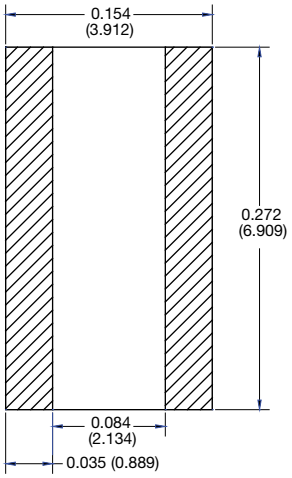
0612 Land Pattern



1020 Land Pattern

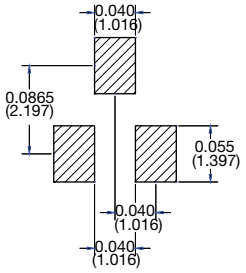


1225 Land Pattern

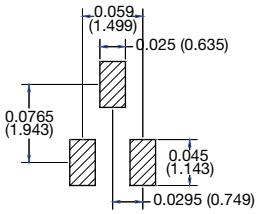


Surface Mount Networks (MPM, MP3, MP4 Series)

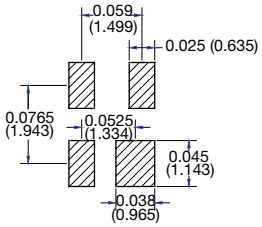
SOT-23 (MPM, MPMA)



SC70-3 (MP3)

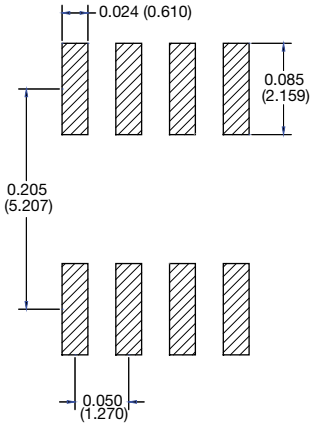


SC70-4 (MP4)

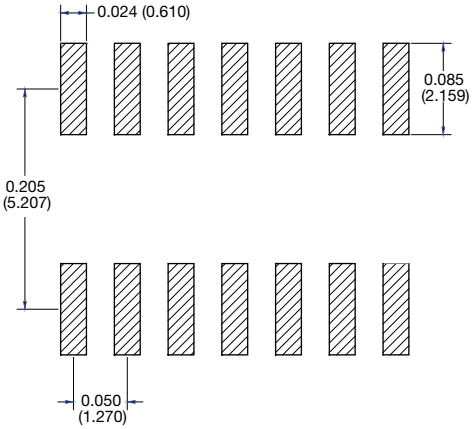


Surface Mount Networks SOIC Narrow Body 150 mils (ORN, CSO, MOMC, HTRN, AORN, MORN Series)

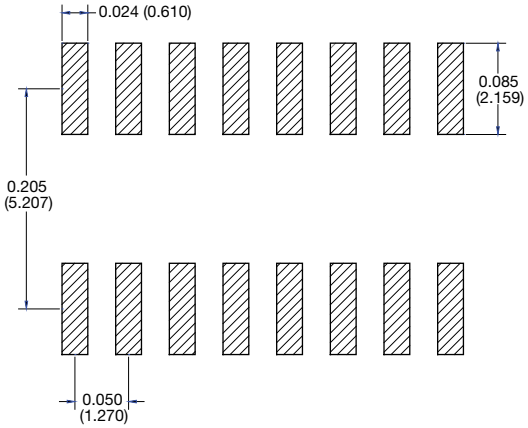
SOIC-8
(ORN, HTRN, AORN, CSO-8)



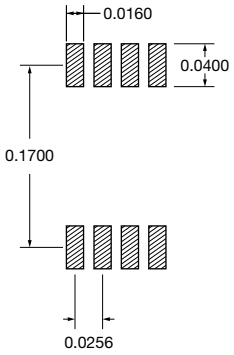
SOIC-14
(NOMC-14, NOMCA-14, CSO-14)



SOIC-16
(NOMC-16, NOMCA-16, CSO-16, VSOR-16)

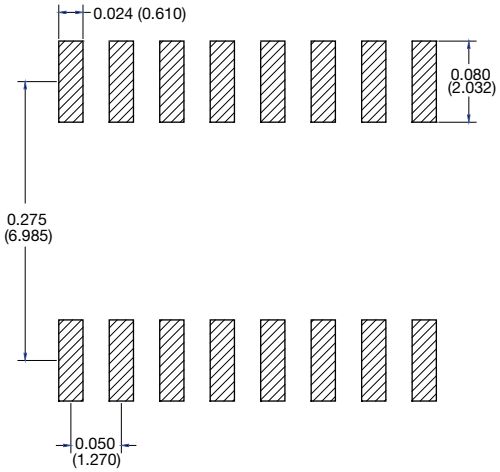


MORN MSOP MO-187AA
(MORN-8)



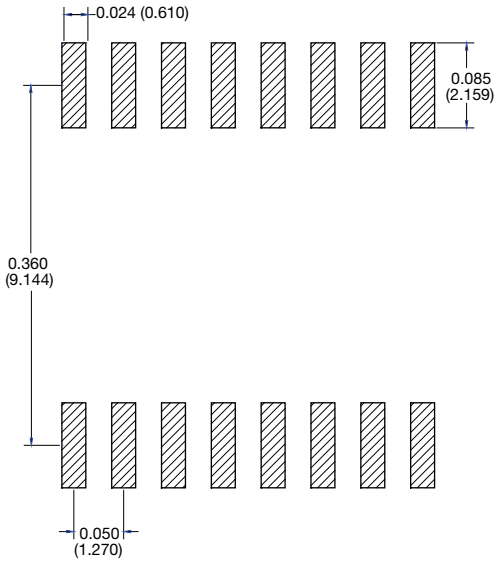
Surface Mount Networks SOIC Medium Body 220 mils (TOMC Series)

SOIC-16 (TOMC)

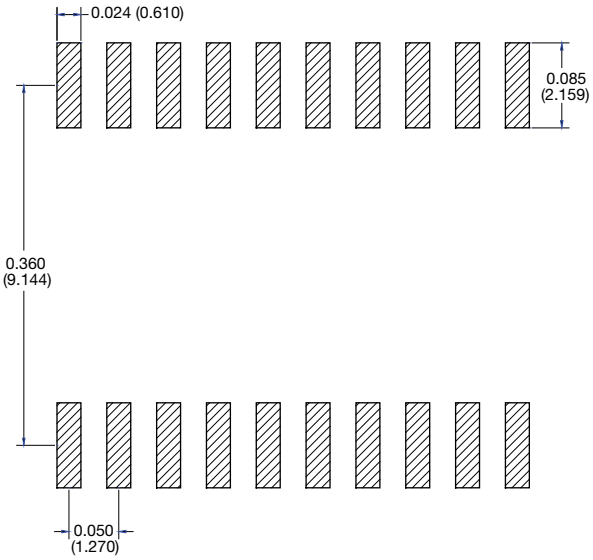


Surface Mount Networks SOIC Wide Body 300 mils (WOMC Series)

SOIC-16 (WOMC-16)



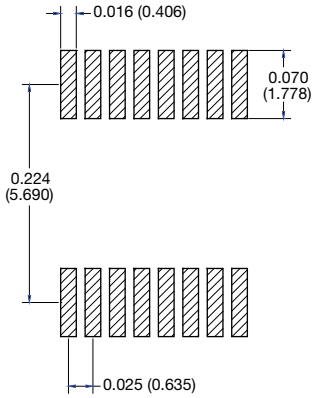
SOIC-20 (WOMC-20)



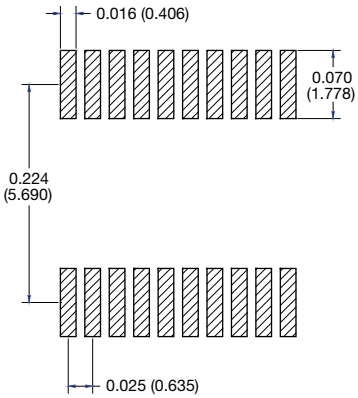
Surface Mount Networks High Density SSOP, TSOP (VSSR, VTSR Series)

SSOP MO-137

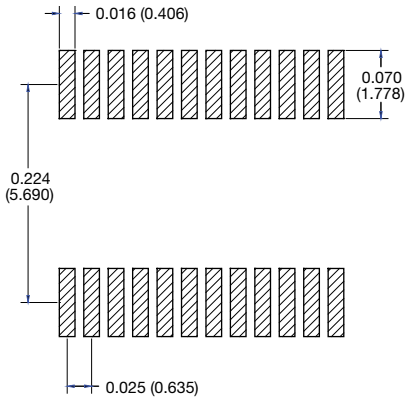
OSOP-16, VSSR-16



OSOP-20, VSSR-20

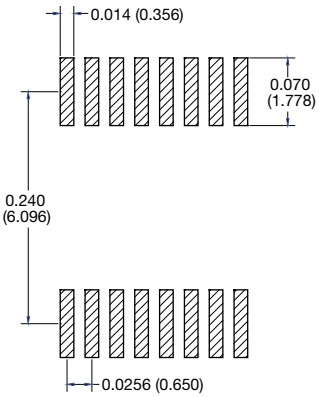


OSOP-24, VSSR-24, HD-CSO-24

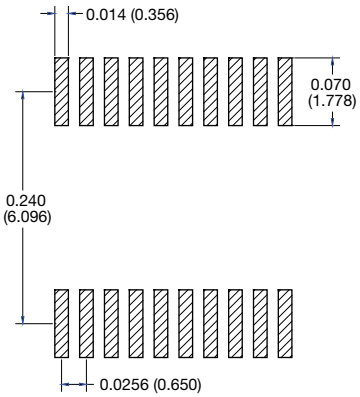


TSSOP MO-153

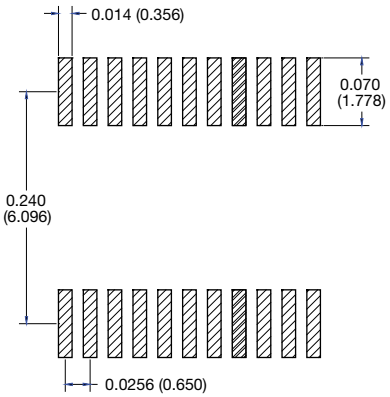
VTSR-16



VTSR-20

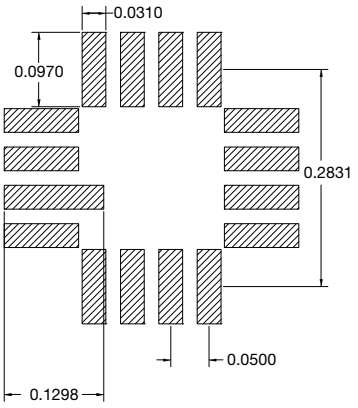


VTSR-24

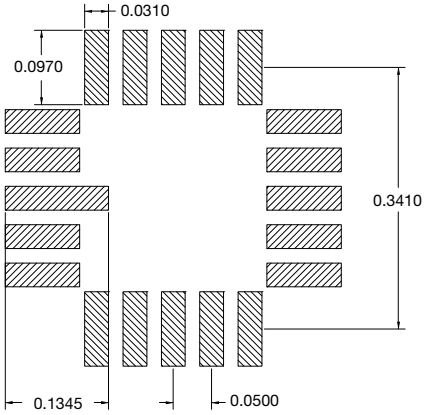


Surface Mount Leadless Networks (LCC Series)

16 Pin LCC

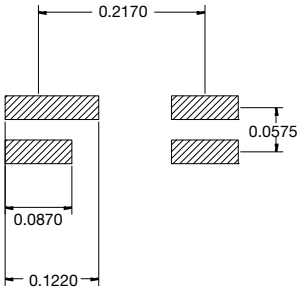


20 Pin LCC



Surface Mount Leadless Networks (MPH Series)

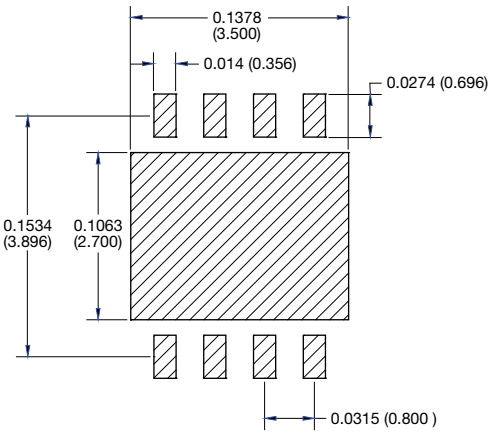
4 Pin LCC



Surface Mount Leadless Packages DUAL/ QUAD Flat No Lead (DFN, QFN Series)

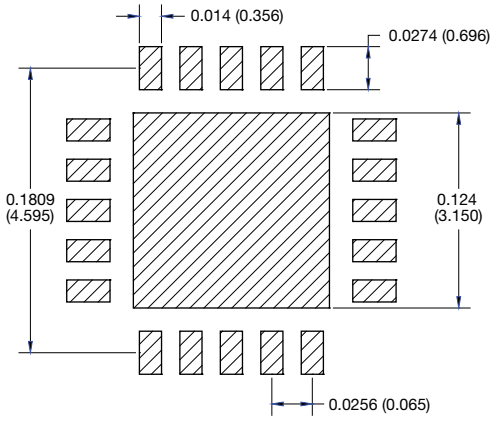
DFN MLP

DFN-8 4 x 5 mm Sq



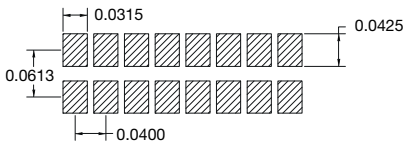
QFN MLP

QFN-20 5 x 5 mm Sq

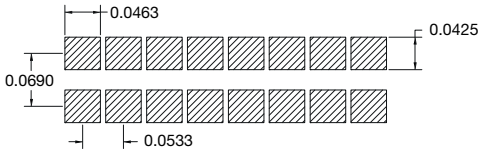


Surface Mount Leadless Resistor Arrays (PR Series)

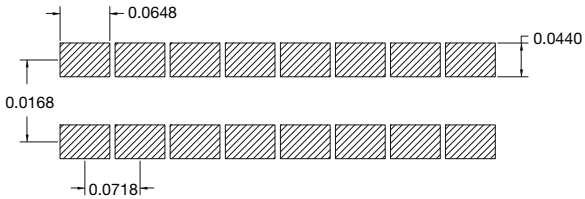
PR 100 (2 to 8 resistors)



PR 135 (2 to 8 resistors)



PR 182 (2 to 8 resistors)

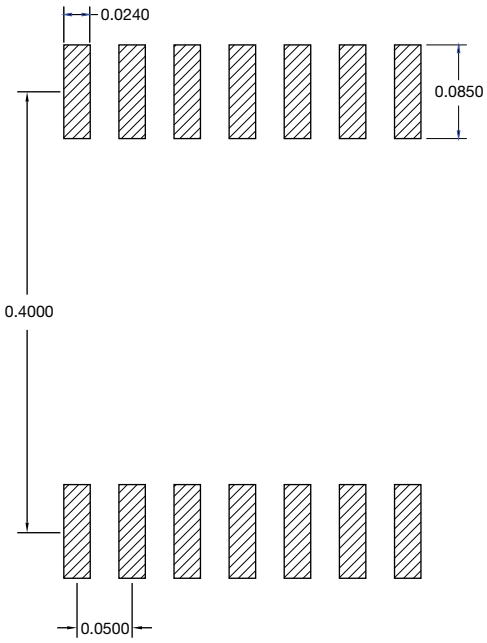


Note

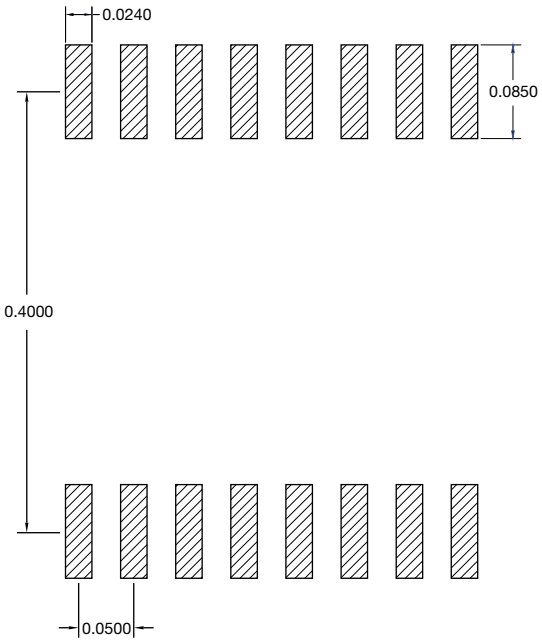
- All dimensions in inches (mm)

Flatpack

14 Pin Bottom Brazed Flatpack



16 Pin Bottom Brazed Flatpack



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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Resistor Networks & Arrays ***category:***

Click to view products by Vishay ***manufacturer:***

Other Similar products are found below :

M8340105K1002FGD03 M8340105K3301JCD03 M8340106M2002GCD03 M8340107K1471FGD03 M8340107K2002GCD03 M8340107K2261FGD03 M8340107M1501GGD03 M8340108K1001FCD03 M8340108K3240FGD03 M8340108K4991FGD03 M8340108K6192FGD03 M8340109MA010GHD03 EXB-24N121JX EXB-24N330JX EXB-24N470JX 744C083101JTR EXB-U14360JX EXB-U18390JX 744C083270JTR 745C102472JP 767161104G 770101223 ACAS06S0830339P100 ACAS06S0830343P100 ACAS06S0830344P100 RM2012A-102/104-PBVW10 RM2012A-102503-PBVW10 RM2012A-502104-PBVW10 8B472TR4 268-15K ACAS06S0830341P100 ACAS06S0830342P100 ACAS06S0830345P100 EXB-U14470JX EXB-U18330JX 266-10K M8340102K1051FBD04 M8340105M1001JCD03 M8340106K4701GGD03 M8340107K1004GGD03 M8340108K1000GGD03 M8340108K1202GGD03 M8340108K3901GGD03 M8340108K4992FGD03 M8340108K5111FGD03 M8340109K2202GCD03 RKC8BD104J DFNA100-1TS 745X101473JP RMKD408-10KBW