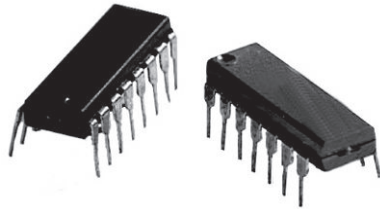


Molded, Dual-In-Line Thin Film Resistor, Through Hole Network



Actual Size

Vishay Dale Thin Film offers two standard circuits in a 14 pins and 16 pins molded dual-in-line over a 100 Ω to 100 kΩ resistance range. The networks feature ratio tolerance to 0.05 % with a TCR tracking of 5 ppm/°C.

FEATURES

- Standard rugged, molded case construction (14 pins and 16 pins)
- Highly stable thin film (500 ppm at +70 °C at 2000 h)
- Low temperature coefficient (± 25 ppm/°C)
- Compatible with automatic insertion equipment
- Standard isolated pin one common schematic
- Isolated and bussed schematics
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



Note

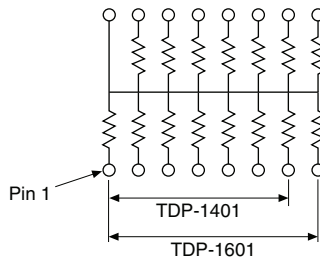
* This datasheet provides information about parts that are RoHS-compliant and/or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information/tables in this datasheet for details.

TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	25	5
	ABSOLUTE	RATIO
TOL.	0.1	0.05

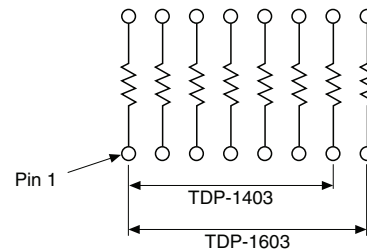
SCHEMATIC

Schematic TDP01



Models: TDP1401 and TDP1601
13 or 15 resistors with one pin common

Schematic TDP03



Models: TDP1403 and TDP1603
7 or 8 isolated resistors

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	14, 16	-
Resistance Range	100 Ω to 100 kΩ	-
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 % to ± 0.5 %	+25 °C
Power Rating: Resistor	0.05 W/resistor = 01 circuit 0.10 W/resistor = 03 circuit	at +25 °C
Power Rating: Package	0.8 W/package	Maximum at +70 °C
Stability: Absolute	$\Delta R \pm 0.05$ %	2000 h at +70 °C
Stability: Ratio	$\Delta R \pm 0.015$ %	2000 h at +70 °C
Voltage Coefficient	< 1 ppm/V (typical)	-
Working Voltage	100 V	-
Operating Temperature Range	-55 °C to +125 °C	-
Storage Temperature Range	-55 °C to +150 °C	-
Noise	< -30 dB	-
Thermal EMF	0.08 μV/°C	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01$ %	1 year at +25 °C
Shelf Life Stability: Ratio	$\Delta R \pm 0.002$ %	1 year at +25 °C

DIMENSIONS AND IMPRINTING in inches and millimeters

	DIMENSION	INCHES	MILLIMETERS
	A	0.755	19.18
	B	0.250	6.35
	C	0.075	1.91
	D	0.100	2.54
	E	0.018	0.46
	F	0.060	1.52
	G	0.025	0.64
	H	0.190	4.83
	J	0.130	3.30
	K	0.320	8.13
	L	0.310	7.87
	M	0.010	0.25
		A	0.755
B		0.250	6.35
C		0.025	0.64
D		0.100	2.54
E		0.018	0.46
F		0.060	1.52
G		0.025	0.64
H		0.190	4.83
J		0.130	3.30
K		0.320	8.13
L		0.310	7.87
M		0.010	0.25



MECHANICAL SPECIFICATIONS	
Resistive Element	Passivated nichrome
Substrate Material	Alumina
Body	Conformal coated
Terminals	Copper alloy
Tin/Lead Option	Sn90
Lead (Pb)-free Option	100 % matte tin
Tin/Lead and Lead (Pb)-free Finish	Hot solder dip

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: TDP14031002BUF

T	D	P	1	4	0	3	1	0	0	2	B	U	F	
T	D	P	T	1	6	0	3	1	0	0	3	A	U	F

GLOBAL MODEL (3 or 4 digits)	PINS	SCHEMATICS	RESISTANCE	TOLERANCE AND RATIO TOLERANCE	PACKAGING												
TDP (Tin lead) TDPT (Lead (Pb)-free) (e3)	14 16	01 = 13 or 15 resistors with 1 common pin 03 = 7 or 8 isolated resistors	First 3 digits are significant figures and the last digit specifies the number of zeroes to follow. e.g.: 1001 = 1K 1002 = 10K	<table border="1"> <thead> <tr> <th>Absolute</th> <th>Ratio</th> </tr> </thead> <tbody> <tr> <td>A = ± 0.1 % ⁽¹⁾</td> <td>± 0.05 %</td> </tr> <tr> <td>B = ± 0.1 %</td> <td>± 0.1 %</td> </tr> <tr> <td>C = ± 0.25 %</td> <td>± 0.1 %</td> </tr> <tr> <td>D = ± 0.5 %</td> <td>± 0.1 %</td> </tr> <tr> <td>F = ± 1.0 %</td> <td>± 0.5 %</td> </tr> </tbody> </table>	Absolute	Ratio	A = ± 0.1 % ⁽¹⁾	± 0.05 %	B = ± 0.1 %	± 0.1 %	C = ± 0.25 %	± 0.1 %	D = ± 0.5 %	± 0.1 %	F = ± 1.0 %	± 0.5 %	UF = Tubed
Absolute	Ratio																
A = ± 0.1 % ⁽¹⁾	± 0.05 %																
B = ± 0.1 %	± 0.1 %																
C = ± 0.25 %	± 0.1 %																
D = ± 0.5 %	± 0.1 %																
F = ± 1.0 %	± 0.5 %																

Historical Part Number example: TDP14031001F (for reference purposes only)

TDP	14	03	1001	F
SERIES	PINS	SCHEMATIC	RESISTANCE	TOLERANCE AND RATIO TOLERANCE

Note

⁽¹⁾ A tolerance on 250 Ω up



Vishay Dale Thin Film Land Patterns

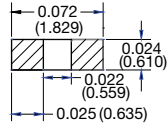
1. Scope

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.

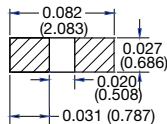
2. Product Series

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

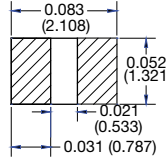
0402 Land Pattern



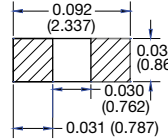
0502 Land Pattern



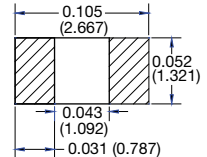
0505 Land Pattern



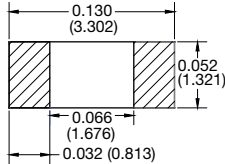
0603 Land Pattern



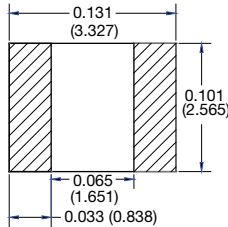
0705 Land Pattern



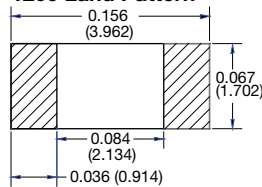
1005 Land Pattern



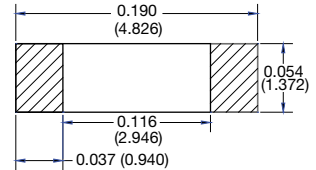
1010 Land Pattern



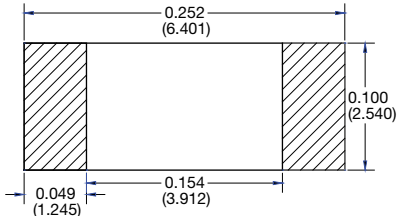
1206 Land Pattern



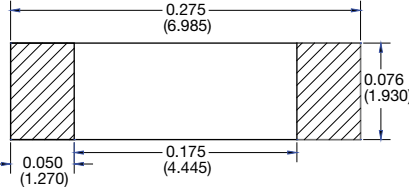
1505 Land Pattern



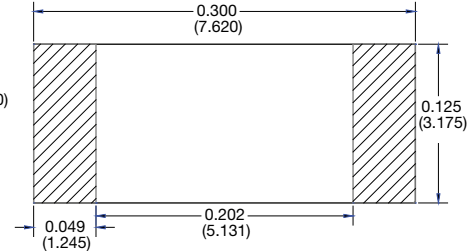
2010 Land Pattern



2208 Land Pattern

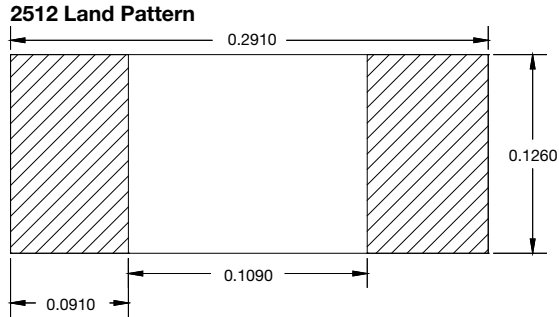
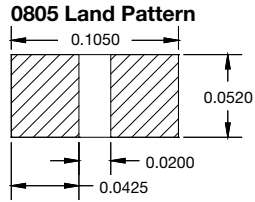
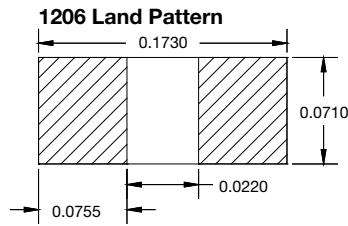
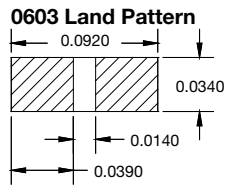


2512 Land Pattern

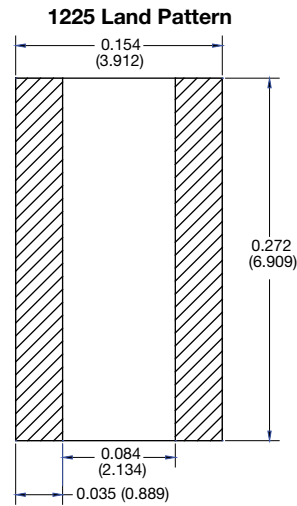
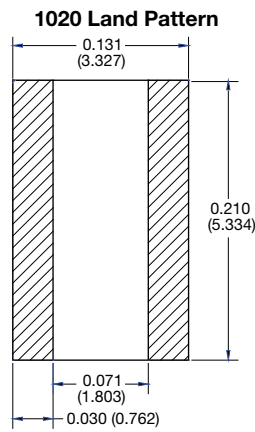
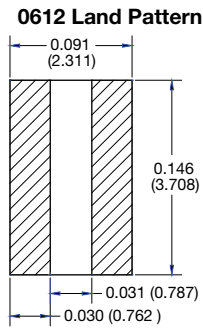
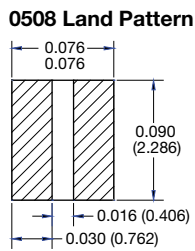




Thin Film Surface Mount Chip Resistors (PHP, PCAN Series)

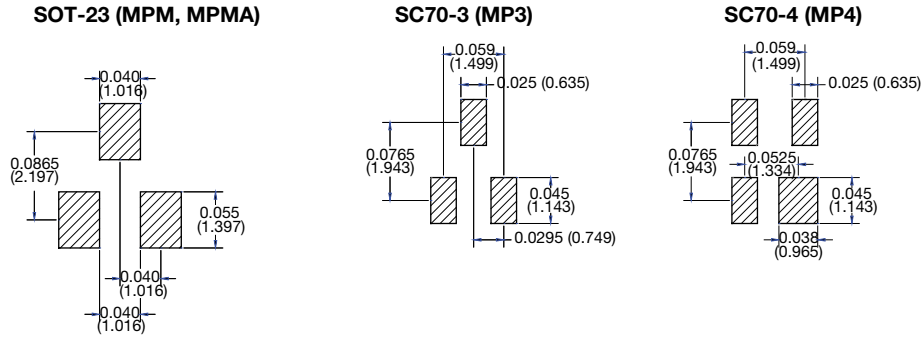


Thin Film Surface Mount Chip Resistors Long Axis Termination (L Series)

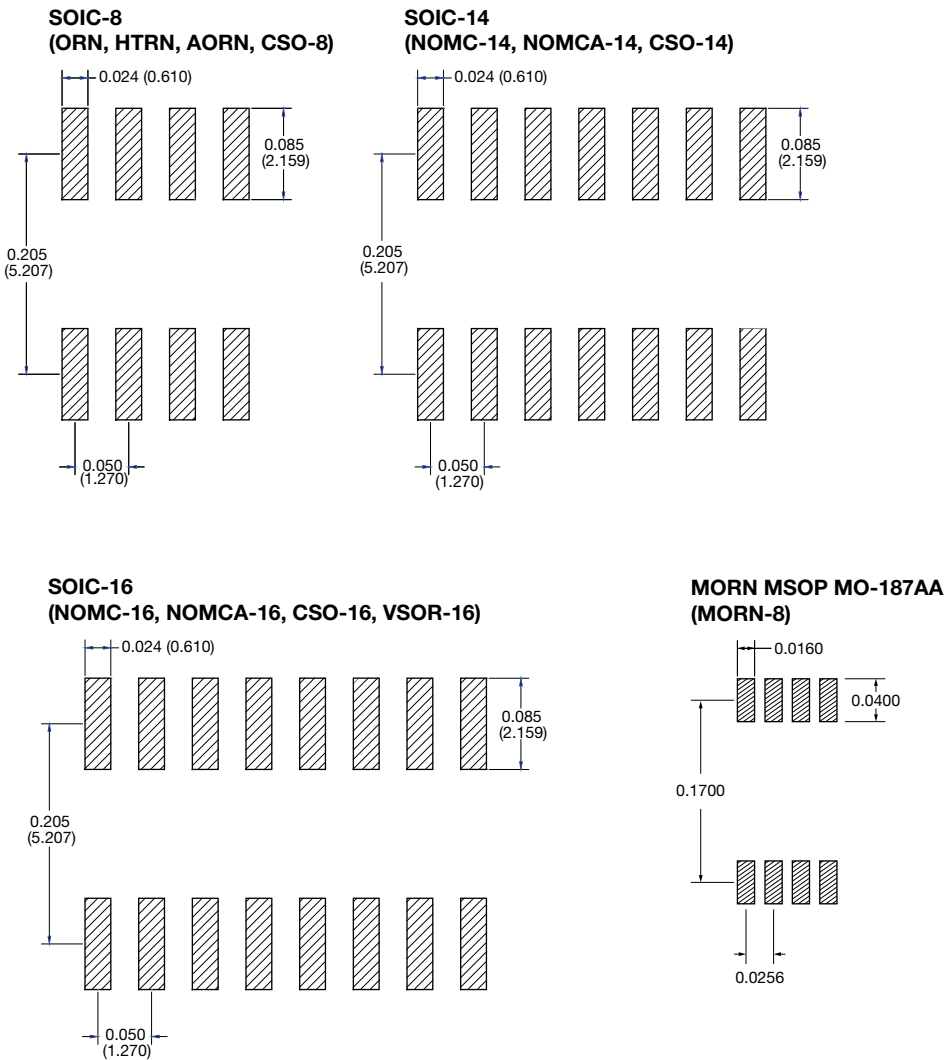




Surface Mount Networks (MPM, MP3, MP4 Series)

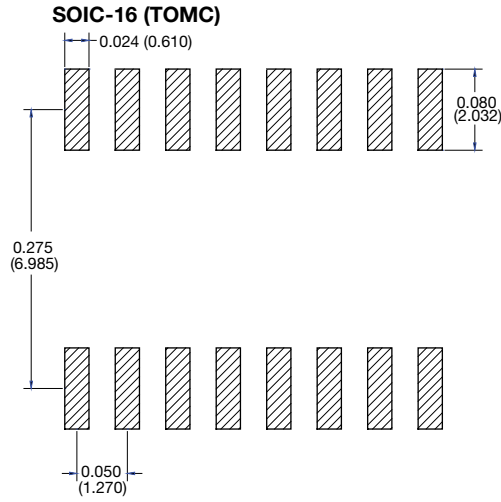


Surface Mount Networks SOIC Narrow Body 150 mils (ORN, CSO, MOMC, HTRN, AORN, MORN Series)

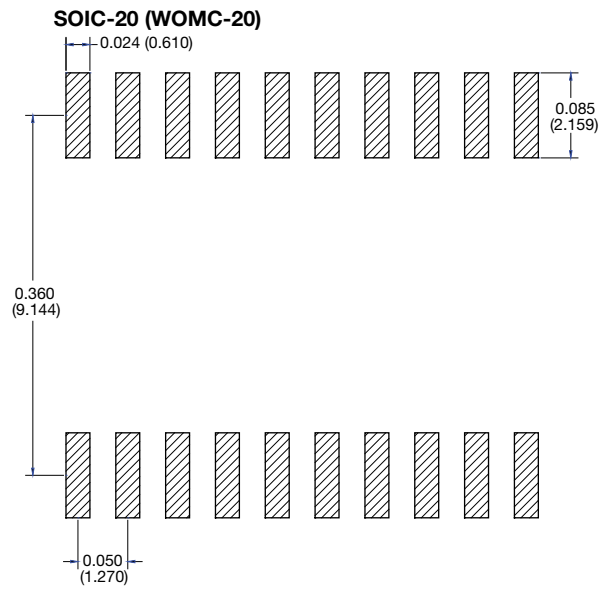
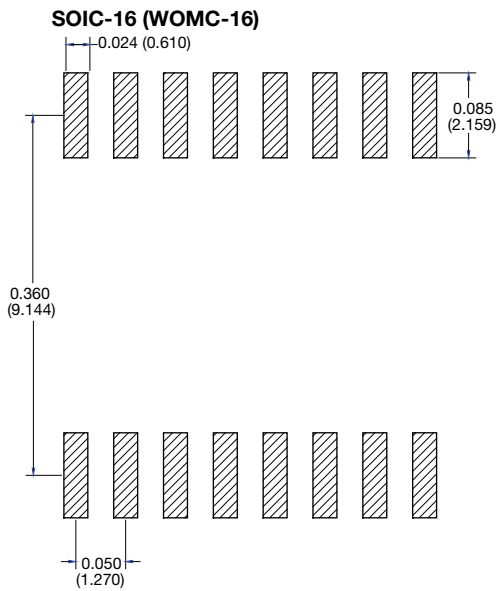




Surface Mount Networks SOIC Medium Body 220 mils (TOMC Series)



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

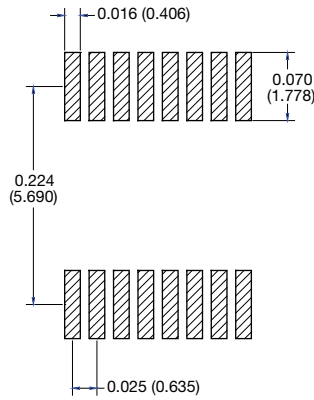




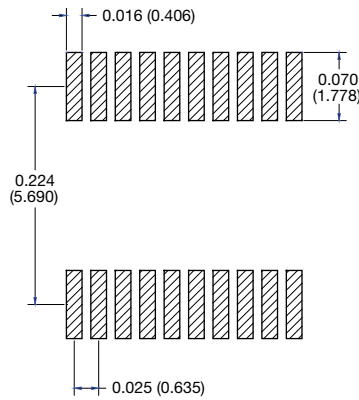
Surface Mount Networks High Density SSOP, TSOP (VSSR, VTSR Series)

SSOP MO-137

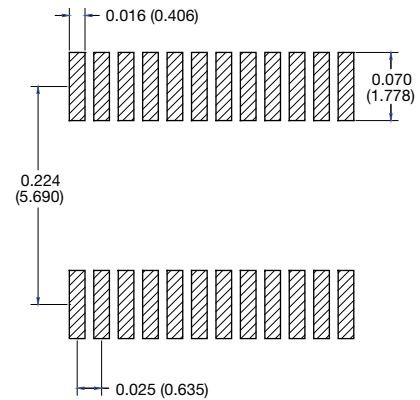
OSOP-16, VSSR-16



OSOP-20, VSSR-20

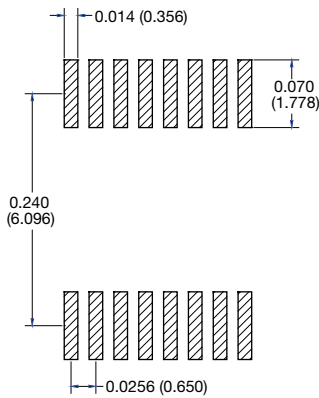


OSOP-24, VSSR-24, HD-CSO-24

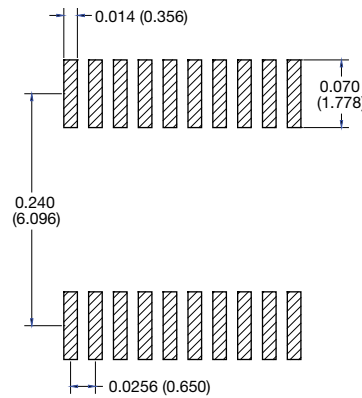


TSSOP MO-153

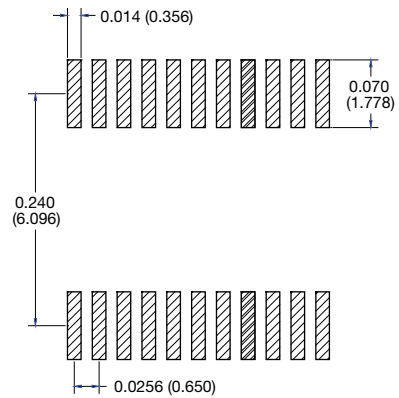
VTSR-16



VTSR-20

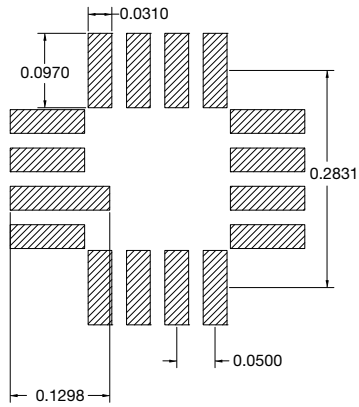


VTSR-24

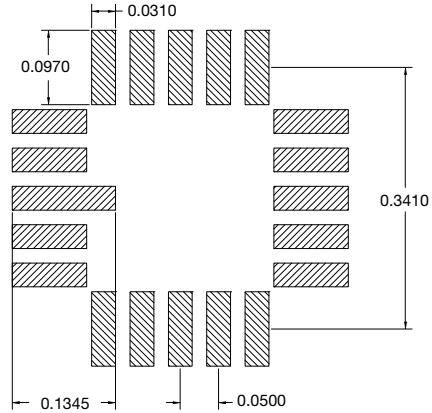


Surface Mount Leadless Networks (LCC Series)

16 Pin LCC

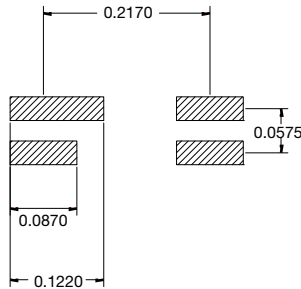


20 Pin LCC



Surface Mount Leadless Networks (MPH Series)

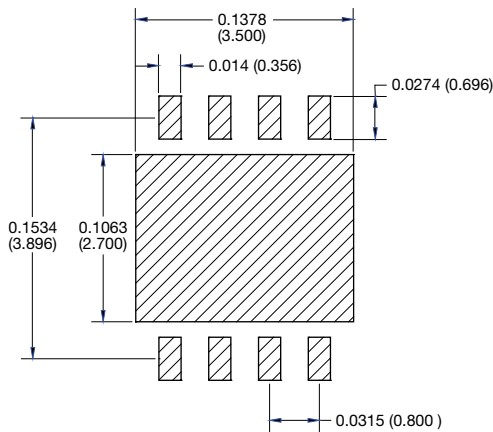
4 Pin LCC



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

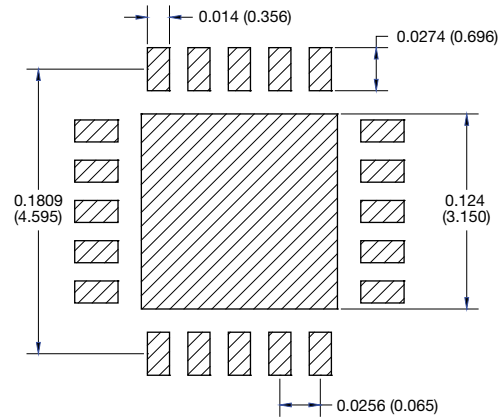
DFN MLP

DFN-8 4 x 5 mm Sq

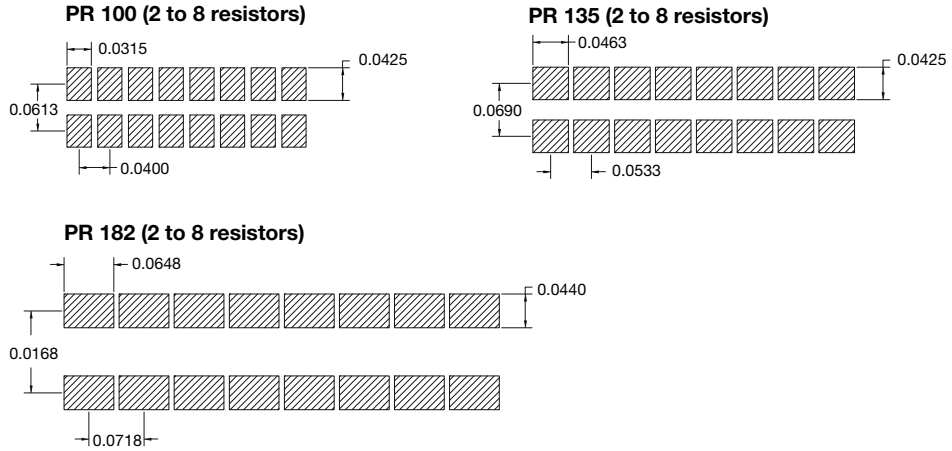


QFN MLP

QFN-20 5 x 5 mm Sq



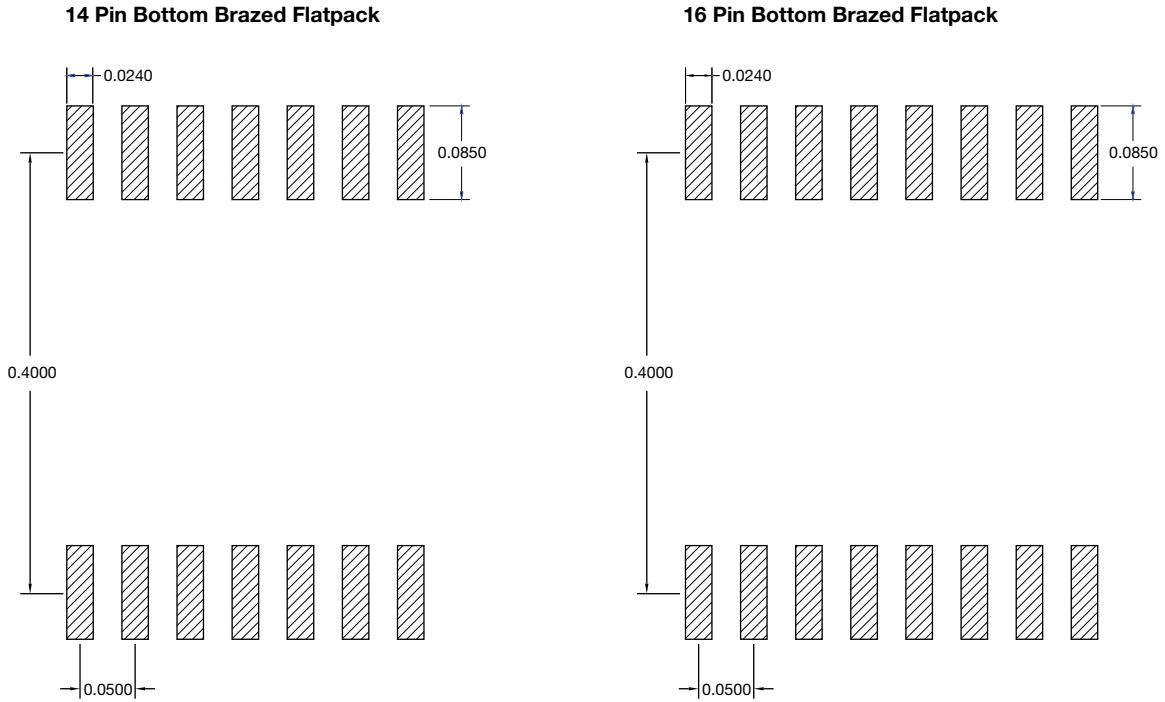
Surface Mount Leadless Resistor Arrays (PR Series)



Note

- All dimensions in inches (mm)

Flatpack





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[M8340107K2261FGD03](#) [M8340107M1501GGD03](#) [M8340108K1001FCD03](#) [M8340108K3240FGD03](#) [M8340108K4991FGD03](#)
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[M8340102K1051FBD04](#) [M8340105M1001JCD03](#) [M8340106K4701GGD03](#) [M8340107K1004GGD03](#) [M8340108K1000GGD03](#)
[M8340108K1202GGD03](#) [M8340108K3901GGD03](#) [M8340108K4992FGD03](#) [M8340108K5111FGD03](#) [M8340109K2202GCD03](#)
[RKC8BD104J](#) [DFNA100-1TS](#) [745X101473JP](#) [RMKD408-10KBW](#)