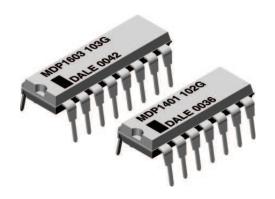
Vishay Dale

## Thick Film Resistor Networks, Dual-In-Line, Molded DIP, 01, 03, 05 Schematics





#### **FEATURES**

- 0.160" [4.06mm] maximum seated height and rugged, molded case construction.
- · Highly stable thick film
- Low temperature coefficient (- 55°C to + 125°C) ± 100ppm/°C
- · Reduces total assembly costs
- Compatible with automatic inserting equipment
- Wide resistance range
- Uniform performance characteristics
- · Available in tube pack

STANDARD ELECTRICAL SPECIFICATIONS							
MODEL/ NO. OF PINS	SCHEMATIC	RESISTOR POWER RATING Max. @ 70°C*	RESISTANCE RANGE	STANDARD TOLERANCE		TCR TRACKING** (- 55°C to + 125°C)	WEIGHT
		W	Ω	%	ppm/°C	ppm/°C	g
MDP 14	01 03	0.125 0.250	10 - 2.2M 10 - 2.2M	$\pm$ 1, $\pm$ 2, $\pm$ 5 $\pm$ 1, $\pm$ 2, $\pm$ 5	± 100	± 50 ± 50	1.3
	05	0.125	Consult factory	$\pm$ 1, $\pm$ 2, $\pm$ 5		± 100	
MDP 16	01 03 05	0.125 0.250 0.125	10 - 2.2M 10 - 2.2M Consult factory	$\pm$ 1, $\pm$ 2, $\pm$ 5 $\pm$ 1, $\pm$ 2, $\pm$ 5 $\pm$ 1, $\pm$ 2, $\pm$ 5	± 100	± 50 ± 50 ± 100	1.5

<sup>\*</sup> For resistor power ratings @ + 25°C see derating curves.

	INFO	

01 and 03 Sc	hematics
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**MDP** 03 SCHEMATIC 101 RESISTANCE VALUE 14 NUMBER OF PINS TOLERANCE MODEL

> First 2 digits (3 for "F"  $F = \pm 1\%$ tolerance) are significant figures. Last digit  $G = \pm 2\%$  $J = \pm 5\%$ specifies number of zeros

to follow.

#### 05 Schematic

**MDP** 05 SCHEMATIC **221**RESISTANCE VALUE R<sub>1</sub> **271** RESISTANCE VALUE R<sub>2</sub> **G** TOLERANCE NUMBER OF PINS **MODEL** 

> First two digits (3 for "F" tolerance) are significant  $F = \pm 1\%$ figures. The last digit specifies the number  $G = \pm 2\%$ of zeros to follow.  $J = \pm 5\%$

#### **EXAMPLE:**

MDP14-03-101G = A dual-in-line thick film resistor network with 14 pins on 0.100" [2.54mm] centers, 03 Schematic, resistance of 100 ohm and a tolerance of  $\pm$  2%.

#### **EXAMPLE:**

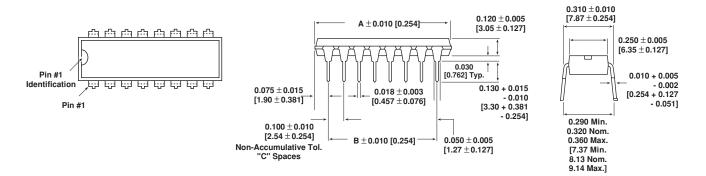
MDP14-05-221/271G = A 14 pin dual-in-line thick film resistor network with 12 series pair of resistors of 220 ohm and 270 ohm per pair and a tolerance of  $\pm$  2%.

<sup>\*\*</sup> Tighter tracking available

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#### **DIMENSIONS** in inches [millimeters]



MODEL	Α	В	С
MDP 14	0.750 [19.05]	0.600 [15.24]	6
MDP 16	0.850 [21.59]	0.700 [17.78]	7

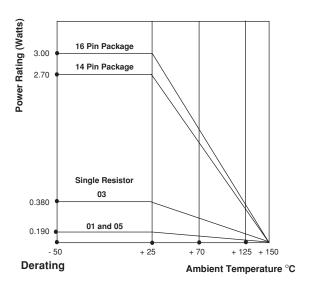
TECHNICAL SPECIFICATIONS				
PARAMETER	UNIT	MDP-14	MDP-16	
Package Power Rating (Maximum at + 70°C)	W	1.73	1.92	
Voltage Coefficient of Resistance	V <sub>eff</sub>	< 50ppm typical		
Dielectric Strength	VAC		200	
Insulation Resistance	Ω	> 10,000	M minimum	
Operating Temperature Range	°C	- 55 to + 125		
Storage Temperature Range:	°C	- 55 to + 150		

MECHANICAL SPECIFICATIONS			
Marking Resistance to Solvents:	Permanency testing per MIL-STD-202, Method 215.		
Solderability:	Per MIL-STD-202, Method 208E.		
Body:	Molded epoxy.		
Terminals:	Copper alloy, tin-lead plated.		
Weight:	14 pin = 1.3 grams; 16 pin = 1.5 grams		

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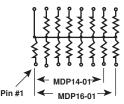
### Thick Film Resistor Networks, DIP, Molded





#### **CIRCUIT APPLICATIONS**

#### 01 Schematic

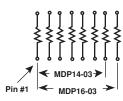


#### 13 and 15 resistors with one pin common

The MDPXX-01 circuit provides a choice of 13 and 15 nominally equal resistors, each connected between a common pin (14 and 16) and a discrete PC board pin. Commonly used in the following applications:

- MOS/ROM Pull-up/Pull-down
- Open Collector Pull-up
- "Wired OR" Pull-up
- Power Driven Pull-up
- TTL Input Pull-down
- Digital Pulse Squaring
- TTL Unused Gate Pull-up
- High Speed Parallel Pull-up

#### 03 Schematic

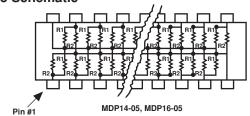


#### 7 and 8 isolated resistors

The MDPXX-03 provides a choice of 7 and 8 nominally equal resistors, each resistor isolated from all others and wired directly across. Commonly used in the following applications:

- "Wired OR" Pull-up
- Power Driven Pull-up
- · Powergate Pull-up
- Line Termination
- · Long-line Impedance Balancing
- LED Current Limiting
- ECL Output Pull-down
- TTL Input Pull-down

#### 05 Schematic



#### TTL dual-line terminator; pulse squaring

The MDPXX-05 circuit contains 12 and 14 series pair of resistors. Each series pair is connected between ground and a common line. The junction of these resistor pairs is connected to the input terminals. The 05 circuits are designed for TTL dual-line termination and pulse squaring.

Standard E-24 resistance values stocked. Consult factory



## Thick Film Resistor Networks, DIP, Molded

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PERFORMANCE				
TEST	CONDITIONS	MAX. ∆R (Typical Test Lots)		
Power Conditioning	1.5 rated power, applied 1.5 hours "ON" and 0.5 hour "OFF" for 100 hours $\pm4$ hours at + 25°C ambient temperature	± 0.50% ΔR		
Thermal Shock	5 cycles between - 65°C and + 125°C	± 0.50% ΔR		
Short Time Overload	2.5 x rated working voltage 5 seconds	± 0.25% ΔR		
Low Temperature Operation	45 minutes at full rated working voltage at - 65°C	± 0.25% ΔR		
Moisture Resistance	240 hours with humidity ranging from 80% RH to 98% RH	± 0.50% ΔR		
Resistance to Soldering Heat	Leads immersed in + 350°C solder to within 1/16" of device body for 3 seconds	± 0.25% ΔR		
Shock	Total of 18 shocks at 100 G's	± 0.25% ΔR		
Vibration	12 hours at maximum of 20 G's between 10 and 2,000 Hz	± 0.25% ΔR		
Load Life	1000 hours at + 70°C, rated power applied 1.5 hours "ON, 0.5 hour "OFF" for full 1000 hour period. Derated according to the curve.	± 1.00% ΔR		
Terminal Strength	4.5 pound pull for 30 seconds	± 0.25% ΔR		
Insulation Resistance	10,000 Megohm (minimum)	_		
Dielectric Withstanding Voltage	No evidence of arcing or damage (200 VRMS for 1 minute)	_		