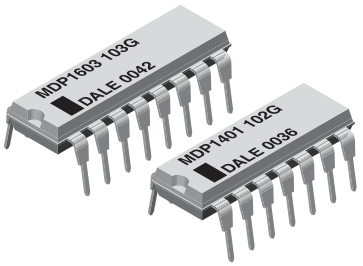
Thick Film Resistor Networks, Dual-In-Line, Molded DIP, 01, 03, 05 Schematics



FEATURES

- 0.160" [4.06 mm] maximum seated height and rugged, molded case construction
- Thick film resistive elements
- Low temperature coefficient (- 55 °C to + 125 °C) ± 100 ppm/°C
- Reduces total assembly costs
- Compatible with automatic insertingbequipment
- Wide resistance range (10 Ω to 2.2 MΩ)
- Uniform performance characteristics
- Available in tube pack
- Lead (Pb)-free version is RoHS compliant

Pb Available

e1 **RoHS*** COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

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

* For resistor power ratings at + 25 °C see derating curves
** Tighter tracking available
*** ± 1 % and ± 5 % tolerences available on request

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MDP1403100RGD04 (preferred part numbering format)

M	D	P	1	4	0	3	1	0	0	R	G	D	0	4			

GLOBAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
MDP	**14** = 14 Pin **16** = 16 Pin	**01** = Bussed **03** = Isolated **00** = Special	**R** = Decimal **K** =Thousand **M** = Million **10R0** = 10 Ω **680K** = 680 kΩ **1M00** = 1.0 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **S** = Special	**E04** = Lead (Pb)-free, Tube **D04** = Tin/Lead,Tube	Blank = Standard (Dash Number) (up to 3 digits) From **1-999** as applicable

Historical Part Number example: MDP1403101G (will continue to be accepted)

MDP	14	03	101	G	D04
HISTORICAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

New Global Part Numbering: MDP1405121CGD04 (preferred part numbering format)

M	D	P	1	4	0	5	1	2	1	C	G	D	0	4			

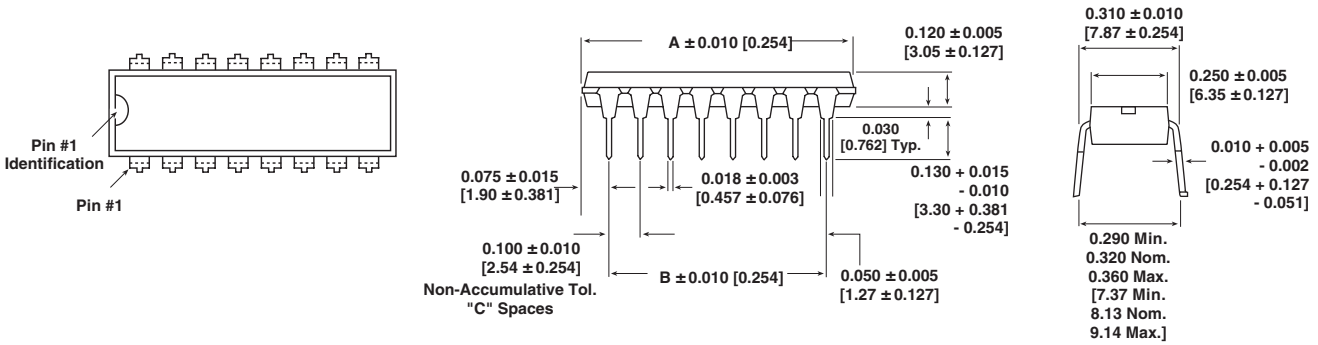
GLOBAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
MDP	**14** = 14 Pin **16** = 16 Pin	**05** = Dual Terminator	3 digit Impedance code followed by Alpha modifier (see Impedence codes table)	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**E04** = Lead (Pb)-free, Tube **D04** = Tin/Lead,Tube	Blank = Standard (Dash Number) (up to 3 digits) From **1-999** as applicable

Historical Part Number example: MDP1405221271G (will continue to be accepted)

MDP	14	05	221	271	G	D04
HISTORICAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE 1	RESISTANCE VALUE 2	TOLERANCE CODE	PACKAGING

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

DIMENSIONS in inches [millimeters]



GLOBAL MODEL	A	B	C
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**	**MDP14**	**MDP16**
Package Power Rating (Maximum at + 70 °C)	W	1.73	1.92
Voltage Coefficient of Resistance	V_{eff}	< 50 ppm typical	
Dielectric Strength	VAC	200	
Insulation Resistance	Ω	> 10 000M minimum	
Operating Temperature Range	°C	- 55 to + 125	
Storage Temperature Range	°C	- 55 to + 150	

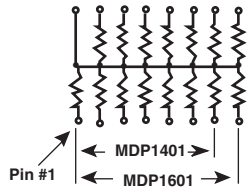
MECHANICAL SPECIFICATIONS	
Marking Resistance to Solvents:	Permanency testing per MIL-STD-202, Method 215
Solderability:	Per MIL-STD-202, Method 208E
Body:	Molded epoxy
Terminals:	Solder plated leads
Weight:	14 pin = 1.3 grams; 16 pin = 1.5 grams

IMPEDANCE CODES

CODE	R1(Ω)	R2(Ω)	CODE	R1(Ω)	R2(Ω)
500B	82	130	141A	270	270
750B	120	200	181A	330	390
800C	130	210	191A	330	470
990A	160	260	221B	330	680
101C	180	240	281B	560	560
111C	180	270	381B	560	1.2K
121B	180	390	501C	620	2.7K
121C	220	270	102A	1.5K	3.3K
131A	220	330	202B	3K	6.2K

CIRCUIT APPLICATIONS

01 SCHEMATIC

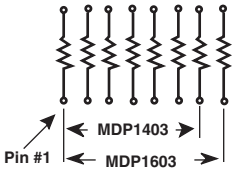


13 and 15 resistors with one pin common

The MDPXX01 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

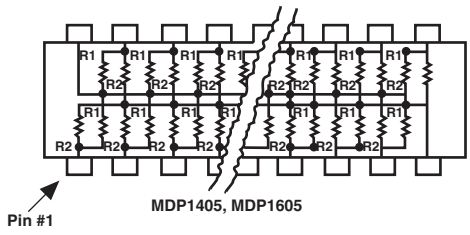


7 and 8 isolated resistors

The MDPXX03 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

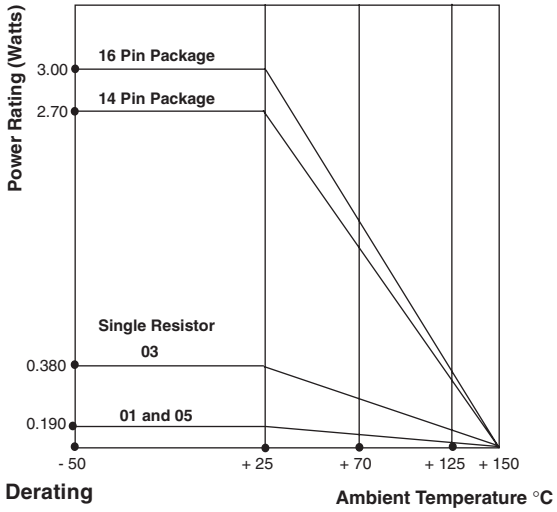


TTL dual-line terminator; pulse squaring

The MDPXX05 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



PERFORMANCE		
TEST	**CONDITIONS**	**MAX. ΔR (Typical Test Lots)**
Power Conditioning	1.5 rated power, applied 1.5 hours “ON” and 0.5 hour “OFF” for 100 hours ± 4 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 2000 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)	-

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