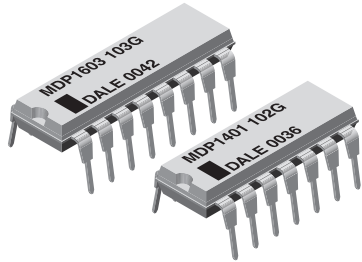




Thick Film Resistor Networks, Dual-In-Line, Molded DIP, 01, 03, 05 Schematics



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 inserting equipment
- Wide resistance range (10 Ω to 2.2 MΩ)
- Uniform performance characteristics
- Available in tube pack
- Lead (Pb)-free version is RoHS compliant



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 % tolerances available on request

GLOBAL PART NUMBER INFORMATION

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



| 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)

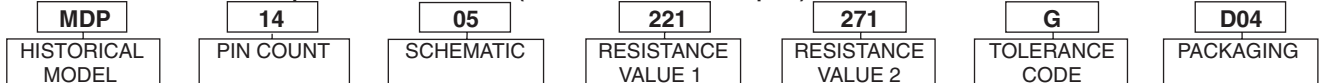


New Global Part Numbering: MDP1405121CGD04 (preferred part numbering format)



| 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 Impedance 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 |

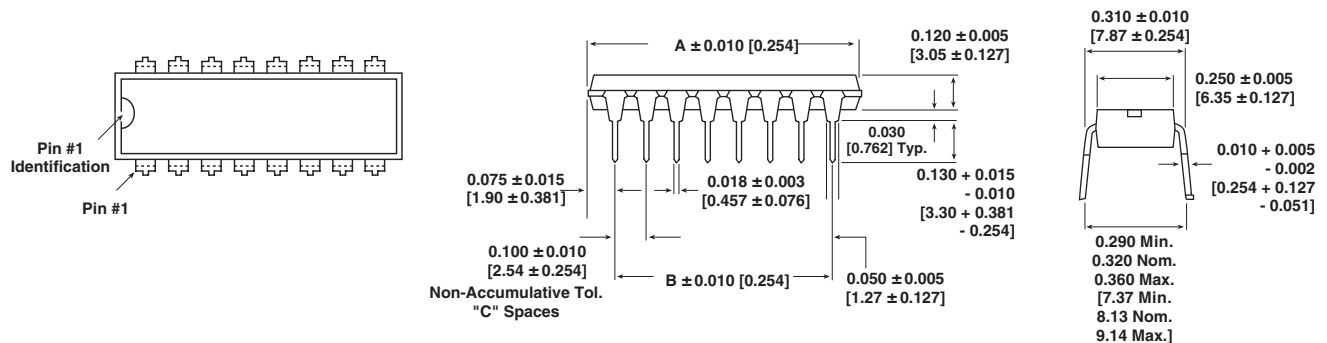
Historical Part Number example: MDP1405221271G (will continue to be accepted)



* 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 |

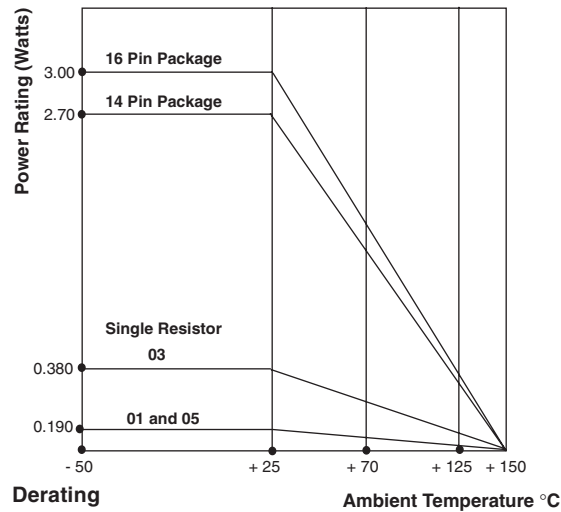
| TECHNICAL SPECIFICATIONS | | | |
|---|-----------|-------------------|-------|
| PARAMETER | UNIT | MDP14 | MDP16 |
| Package Power Rating (Maximum at + 70 °C) | W | 1.73 | 1.92 |
| Voltage Coefficient of Resistance | V_{eff} | < 50 ppm typical | |
| Dielectric Strength | VAC | 200 | |
| Insulation 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 | |
|----------------------------|--|
| <p>01 SCHEMATIC</p> | <p>13 and 15 resistors with one pin common</p> <p>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:</p> <ul style="list-style-type: none"> • 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 |
| <p>03 SCHEMATIC</p> | <p>7 and 8 isolated resistors</p> <p>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:</p> <ul style="list-style-type: none"> • "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 |
| <p>05 SCHEMATIC</p> | <p>TTL dual-line terminator; pulse squaring</p> <p>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.</p> <p>The 05 circuits are designed for TTL dual-line termination and pulse squaring.</p> |

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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