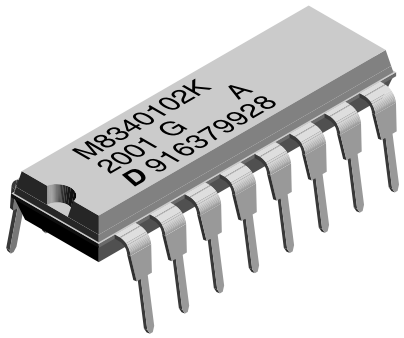
Thick Film Resistor Networks
Military, MIL-PRF-83401 Qualified, Type RZ
Dual-In-Line Package, 01, 03, 05 Schematics



FEATURES

- MIL-PRF-83401 qualified
- Epoxy molded construction
- All device leads are hot-solder dipped
- Available in tube pack
- TCR available in "K" (± 100ppm/°C) or "M" (± 300ppm/°C) depending on style
- 100% screen tested per Group A, Subgroup 1 of MIL-PRF-83401
- All devices are capable of passing the MIL-STD-202, Method 210, Condition D, "Resistance to Soldering Heat" test

STANDARD ELECTRICAL SPECIFICATIONS

MODEL/ PIN NO./ PROFILE	SCHEMATIC	RESISTOR POWER RATING Max. @ 70°C W	PACKAGE POWER RATING Max. @ 25°C W	RESISTANCE RANGE Ω	STANDARD TOLERANCE %	TEMPERATURE COEFFICIENT** (- 55°C to + 125°C)	WEIGHT g
MDM 14	01	0.10	1.30	10 - 1M	± 1, ± 2, ± 5	K, M	1.3
MDM 14	03	0.20	1.40	10 - 1M	± 1, ± 2, ± 5	K, M	1.3
MDM 14	05	0.05	1.20	Consult factory	± 1, ± 2, ± 5	K, M	1.3
MDM 16	01	0.10	1.50	10 - 1M	± 1, ± 2, ± 5	K, M	1.5
MDM 16	03	0.20	1.60	10 - 1M	± 1, ± 2, ± 5	K, M	1.5
MDM 16	05	0.05	1.40	Consult factory	± 1, ± 2, ± 5	K, M	1.5

* K = ± 100ppm/°C; M = ± 300ppm/°C

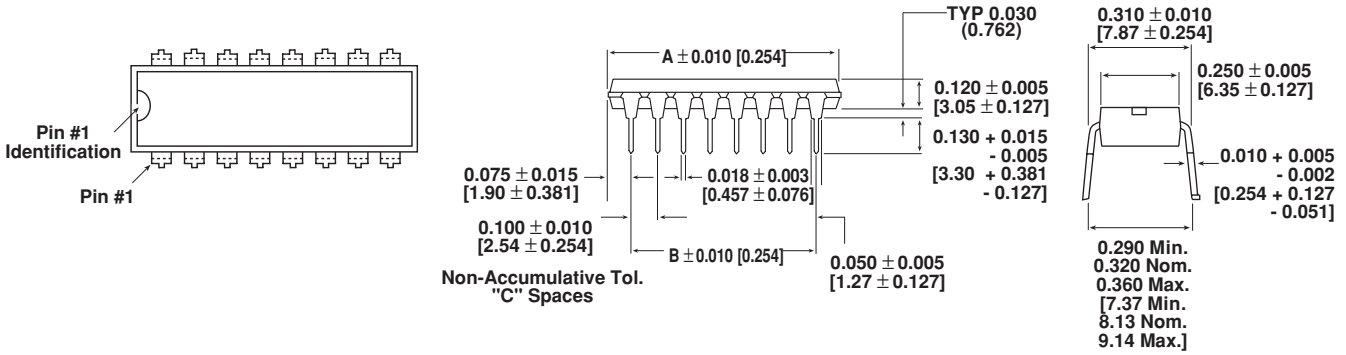
TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	MDM Series
Maximum Operating Voltage	VDC	100
Voltage Coefficient of Resistance	V_{eff}	< 50ppm
Dielectric Strength	VAC	200 per min.
Insulation Resistance	Ω	10,000M
Operating Temperature Range	°C	- 55 to + 125
Storage Temperature Range	°C	- 55 to + 150

MECHANICAL SPECIFICATION

Marking Resistance to Solvents:	Permanency testing per MIL-PRF-83401.
Solderability:	Per MIL-PRF-83401.
Body:	Molded epoxy.
Terminals:	Copper alloy, hot-solder dipped.

DIMENSIONS in inches [millimeters]



TYPE	A	B	C
MDM14	0.750 [19.05]	0.600 [15.24]	6
MDM16	0.850 [21.59]	0.700 [17.78]	7

ORDERING INFORMATION - MILITARY PART NUMBER

M8340101 **M8340102** **M8340101**	**M** **M** **K**	**2201** **4701** **A001***	**G** **G** **G**	**B** **A** **J**
DETAIL SPEC. NO.	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC
M8340101 = 14 Pin DIP RZ010 M8340102 = 16 Pin DIP RZ020	"K" = ± 100ppm/°C "M" = ± 300ppm/°C	The first three digits are significant figures. The last digit specifies the number of zeros to follow = 01 and 03 Schematics. For 05 Schematic see footnote (*).	F = ± 1% G = ± 2% J = ± 5%	

EXAMPLE:

M8340101M2201GB = A dual-in-line resistor network with 14 pins, a TCR of ± 300ppm/°C, resistance value of 2.2k ohm, tolerance of 2% and to Schematic "B".

EXAMPLE:

M8340102M4701GA = A dual-in-line resistor network with 16 pins, a TCR of ± 300ppm°C, resistance value of 4.7k ohm, tolerance of 2% and to Schematic "A".

EXAMPLE:

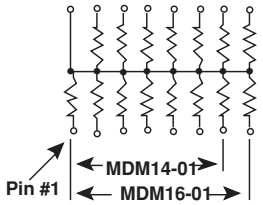
M8340101KA001GJ = A dual-in-line resistor network with 14 pins, a TCR of ± 100ppm/°C, R1 resistance value of 82 ohm, R2 resistance value of 130 ohm, tolerance of ± 2% and to Schematic "J".

* Schematic "J" resistance values are specified by a 4-digit code, which comes from MIL-R-83401. The codes and corresponding resistance values are:

CODE	R1 (Ohms)	R1 (Ohms)	CODE	R1 (Ohms)	R1 (Ohms)
A001	82	130	A010	330	470
A002	120	200	A011	330	680
A003	130	210	A012	1.5k	3.3k
A004	160	260	A013	3k	6.2k
A005	180	240	A014	180	270
A006	180	390	A015	270	270
A007	220	270	A016	560	560
A008	220	330	A017	560	1.2k
A009	330	390	A018	620	2.7k

CIRCUIT APPLICATIONS

01 Schematic



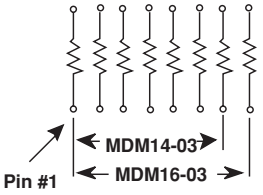
MDM14-01 (M8340101xxxxxxB)
MDM16-01 (M8340102xxxxxxB)

13 or 15 resistors with one pin common

The MDMxx-01 provides the user with a choice of 13 or 15 nominally equal resistors, each connected to a common 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



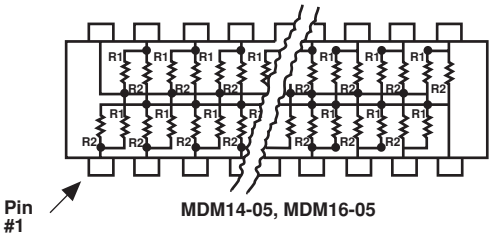
MDM14-03 (M8340101xxxxxxA)
MDM16-03 (M8340102xxxxxxA)

7 or 8 isolated resistors

The MDMxx-03 provides the user with a choice of 7 or 8 nominally equal resistors, with each resistor isolated from all others. Commonly used in the following applications:

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

05 Schematic

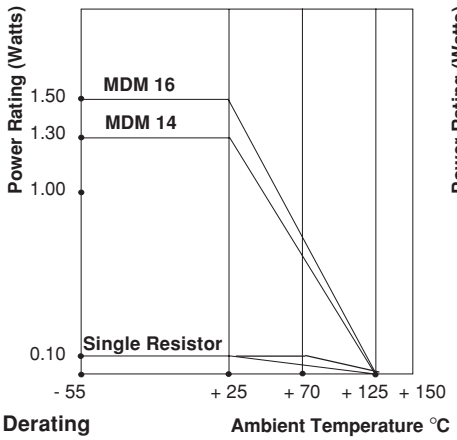


MDM14-05 (M8340101xxxxxxJ)
MDM16-05 (M8340102xxxxxxJ)

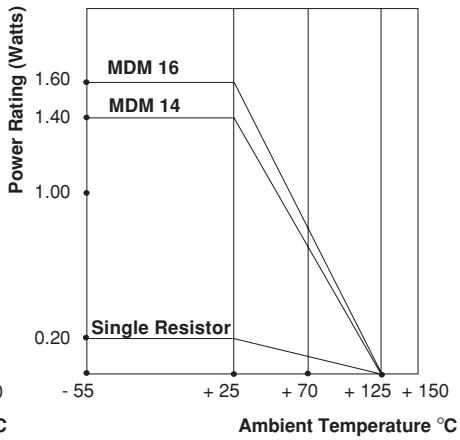
12 or 14 resistor pairs

The MDMxx-05 provides the user with a choice of 12 or 14 pairs of R1/R2 resistor values for pulse squaring and TTL dual-line terminating requirements.

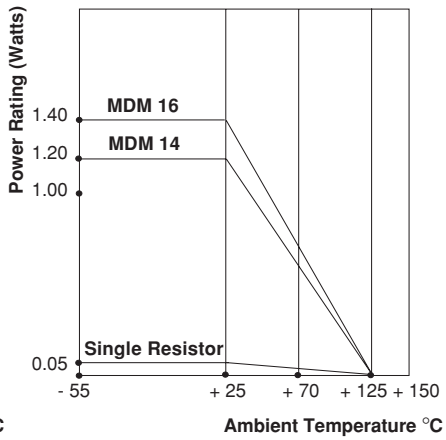
01 Schematic



03 Schematic



05 Schematic



PERFORMANCE		
TEST	**CONDITIONS**	**MAX. ΔR (Typical Test Lots)**
Power Conditioning	1.5 x 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 (Char. K) ± 0.50% ΔR (Char. M)
Low Temperature Operation	45 minutes at full rated working voltage at - 65°C	± 0.25% ΔR (Char. K) ± 0.50% ΔR (Char. M)
Moisture Resistance	240 hours with humidity ranging from 80% RH to 98% RH	± 0.50% ΔR
Resistance to Soldering Heat	Leads immersed in + 260°C solder to within 1/16" of body for 10 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	1,000 hours at + 70°C, rated power applied 1.5 hours “ON”, 0.5 hour “OFF” for full 1000 hour period	± 0.50% ΔR (Char. K) ± 2.00% ΔR (Char. M)
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 V RMS for 1 minute)	—