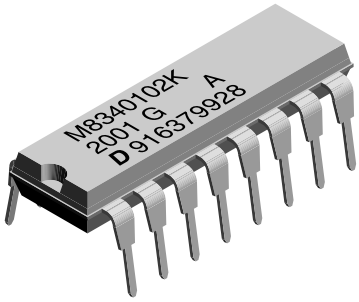
Thick Film Resistor Networks Military, MIL-PRF-83401 Qualified, Type RZ Dual-In-Line Package, 01, 03, 05 Schematics



FEATURES

- MIL-PRF-83401 qualified
- Epoxy molded construction
- All device leads are hot-solder dipped
- Available in tube pack
- TCR available in “K” (± 100 ppm/°C) or “M” (± 300 ppm/°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

VISHAY DALE MODEL/ PINS NO	SCHEMATIC	RESISTOR POWER RATING MAX. at 70 °C W	PACKAGE POWER RATING MAX. at 70 °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	± 2 (± 1, ± 5) (2)	K, M (1)	1.3
MDM 14	03	0.20	1.40	10 - 1M	± 2 (± 1, ± 5) (2)	K, M (1)	1.3
MDM 14	05	0.05	1.20	Consult factory	± 2 (± 1, ± 5) (2)	K, M (1)	1.3
MDM 16	01	0.10	1.50	10 - 1M	± 2 (± 1, ± 5) (2)	K, M (1)	1.5
MDM 16	03	0.20	1.60	10 - 1M	± 2 (± 1, ± 5) (2)	K, M (1)	1.5
MDM 16	05	0.05	1.40	Consult factory	± 2 (± 1, ± 5) (2)	K, M (1)	1.5

Notes

(1) K = ± 100 ppm/°C; M = ± 300 ppm/°C

(2) ± 1 % and ± 5 % tolerances available on request

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: M8340101M2201GBD04 (preferred part numbering format)

M	8	3	4	0	1	0	1	M	2	2	0	1	G	B	D	0	4

MIL STYLE	SPEC SHEET	CHARACTERISTIC VALUE	RESISTANCE	TOLERANCE	SCHEMATIC	PACKAGING
M83401	**01** = 14 Pin **02** = 16 Pin	**K** = 100 ppm **M** = 300 ppm	3 digit significant figure, followed by a multiplier **10R0** = 10 Ω **3302** = 33 kΩ **1004** = 1 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**A** = Isolated **B** = Bussed	**D04** = Tin/Lead, Tube **DSL** = Tin/Lead, Tube, Single Lot Date Code

Historical Part Number example: M8340101M2201GB (will continue to be accepted)

M83401	01	M	2201	G	B	D04
MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING

New Global Part Numbering: M8340102KA001GJD04 (preferred part numbering format)

M	8	3	4	0	1	0	2	K	A	0	0	1	G	J	D	0	4

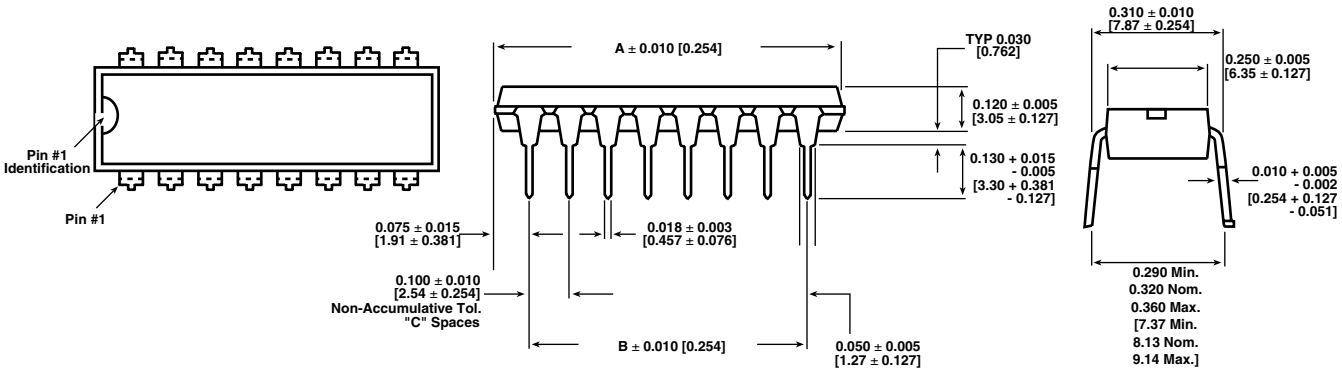
MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING
M83401	**01** = 14 Pin **02** = 16 Pin	**K** = 100 ppm **M** = 300 ppm	Per std. Mil. Spec (see Impedence codes table)	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**J** = Dual Terminator	**D04** = Tin/Lead, Tube **DSL** = Tin/Lead, Tube, Single Lot Date Code

Historical Part Number example: M8340102KA001GJ (will continue to be accepted)

M83401	02	K	A001	G	J	D04
MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING

Downloaded from Elcodis.com electronic components distributor

DIMENSIONS in inches [millimeters]



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

IMPEDANCE CODES

CODE	R_1 (Ω)	R_2 (Ω)	CODE	R_1 (Ω)	R_2 (Ω)
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

TECHNICAL SPECIFICATIONS

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

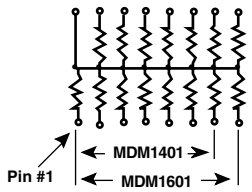
MECHANICAL SPECIFICATIONS

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

Downloaded from Elcodis.com electronic components distributor

CIRCUIT APPLICATIONS

01 SCHEMATIC



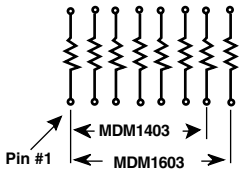
MDM1401 (M8340101xxxxxxB)
MDM1601 (M8340102xxxxxxB)

13 or 15 resistors with one pin common

The MDMxx01 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



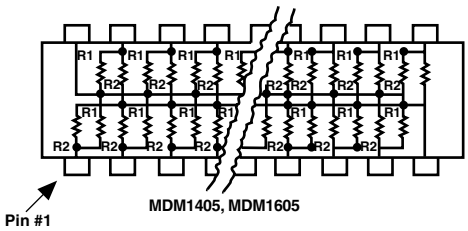
MDM1403 (M8340101xxxxxxA)
MDM1603 (M8340102xxxxxxA)

7 or 8 isolated resistors

The MDMxx03 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



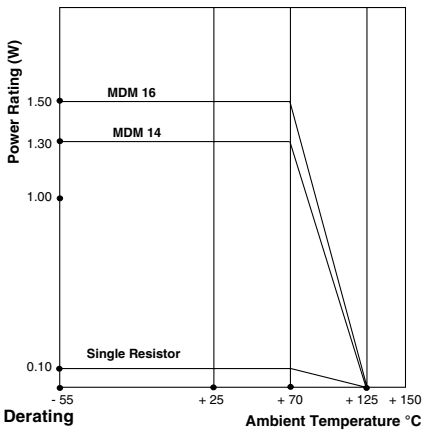
MDM1405 (M8340101xxxxxxJ)
MDM1605 (M8340102xxxxxxJ)

12 or 14 resistor pairs

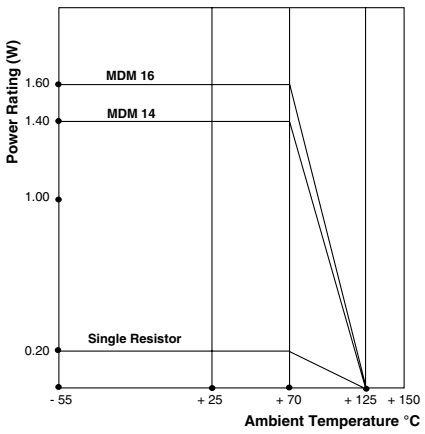
The MDMxx05 provides the user with a choice of 12 or 14 pairs of R1/R2 resistor values for pulse squaring and TTL dual-line terminating requirements.

CAGE CODE: 91637

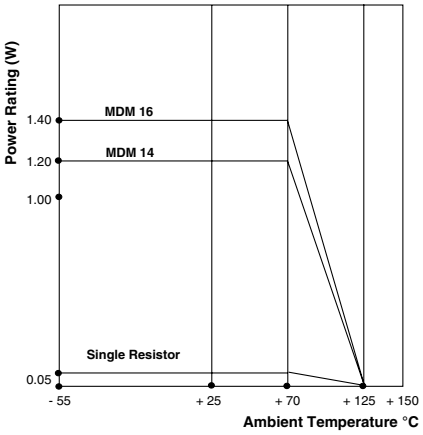
01 Schematic



03 Schematic



05 Schematic



Downloaded from Elcodis.com electronic components distributor

PERFORMANCE		
TEST	**CONDITIONS**	**MAX. ΔR (Typical Test Lots)**
Power Conditioning	1.5 x rated power, applied 1.5 h "ON" and 0.5 h "OFF" for 100 h ± 4 h at + 25 °C ambient temperature	± 0.50 % Δ*R*
Thermal Shock	5 cycles between - 65 °C and + 125 °C	± 0.50 % Δ*R*
Short Time Overload	2.5 x rated working voltage for 5 s	± 0.25 % Δ*R* (Char. K) ± 0.50 % Δ*R* (Char. M)
Low Temperature Operation	45 min at full rated working voltage at - 65 °C	± 0.25 % Δ*R* (Char. K) ± 0.50 % Δ*R* (Char. M)
Moisture Resistance	240 h with humidity ranging from 80 % RH to 98 % RH	± 0.50 % Δ*R*
Resistance to Soldering Heat	Leads immersed in + 260 °C solder to within 1/16" of body for 10 s	± 0.25 % Δ*R*
Shock	Total of 18 shocks at 100 G's	± 0.25 % Δ*R*
Vibration	12 h at maximum of 20 G's between 10 and 2000 Hz	± 0.25 % Δ*R*
Load Life	1000 h at + 70 °C, rated power applied 1.5 h "ON", 0.5 h "OFF" for full 1000 h period	± 0.50 % Δ*R* (Char. K) ± 2.00 % Δ*R* (Char. M)
Terminal Strength	4.5 pound pull for 30 s	± 0.25 % Δ*R*
Insulation Resistance	10 000 MΩ (minimum)	-
Dielectric Withstanding Voltage	No evidence of arcing or damage (200 V_{RMS} for 1 min)	-

Downloaded from Elcodis.com electronic components distributor

Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Downloaded from Elcodis.com electronic components distributor