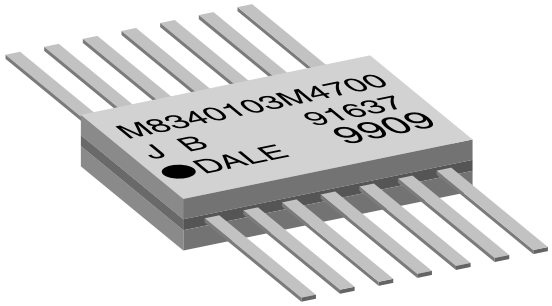
Thick Film Resistor Networks, Military, MIL-PRF-83401 Qualified, Type RZ030, Flat Pack



FEATURES

- Isolated, bussed and dual terminator schematics available
- Hot-solder dipped leads
- MIL-PRF-83401 qualified
- Thick film resistive elements
- TCR available in "K" (± 100 ppm/°C) or "M" (± 300 ppm/°C) characteristic
- 100 % screen tested per group A, subgroup 1 of MIL-PRF-83401
- 0.065" (1.65 mm) height for high density packaging

STANDARD ELECTRICAL SPECIFICATIONS

VISHAY DALE MODEL/ PIN NO.	MIL STYLE	MIL SPEC. SHEET	SCHEMATIC	POWER RATING ELEMENT $P_{70\,°C}$ W	POWER RATING PACKAGE $P_{70\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE (2) ± %	TEMPERATURE COEFFICIENT (1) (-55 °C to +125 °C) ± ppm/°C	WEIGHT g
DFM14	RZ030	03	11 (A)	0.050	0.350	10 to 1M	1, 2, 5	100, 300	0.4
			12 (B)	0.025	0.325	10 to 1M			
			15 (J)	0.015	0.350	Consult factory			

Notes

- Consult factory for stocked values.

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

(2) ± 2 % standard, ± 1 % and ± 5 % available.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: M8340103M6801GAD05 (preferred part numbering format)

M	8	3	4	0	1	0	3	M	6	8	0	1	G	A	D	0	5

MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING
M83401	**03**	**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	**D05** = Tin/lead, tube **DSL** = Tin/lead, tube, single lot date code

Historical Part Number Example: M8340103M6801GA (will continue to be accepted)

M83401	03	M	6801	G	A	D05
MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING

New Global Part Numbering: M8340103KA001GJD05 (preferred part numbering format)

M	8	3	4	0	1	0	3	K	A	0	0	1	G	J	D	0	5

MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING
M83401	**03**	**K** = 100 ppm **M** = 300 ppm	Per Std. MIL. Spec. (see Impedance Codes table)	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**J** = Dual terminator	**D05** = Tin/lead, tube **DSL** = Tin/lead, tube, single lot date code

Historical Part Number Example: M8340103KA001GJ (will continue to be accepted)

M83401	03	M	A001	G	J	D05
MIL STYLE	SPEC SHEET	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE	SCHEMATIC	PACKAGING

Note

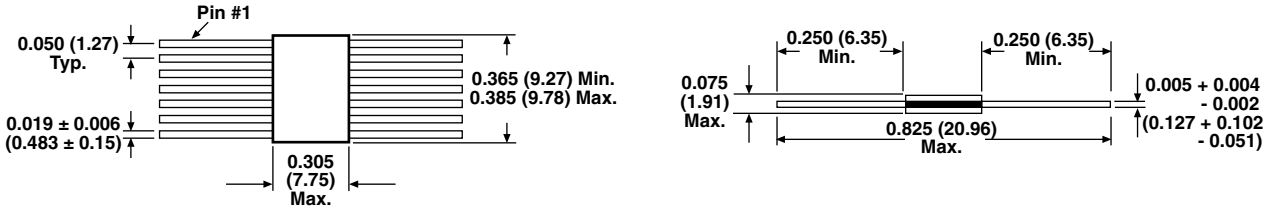
- For additional information on packaging, refer to the Surface Mount Network Packaging document (www.vishay.com/doc?31540).

For technical questions, contact: ff2aresistors@vishay.com

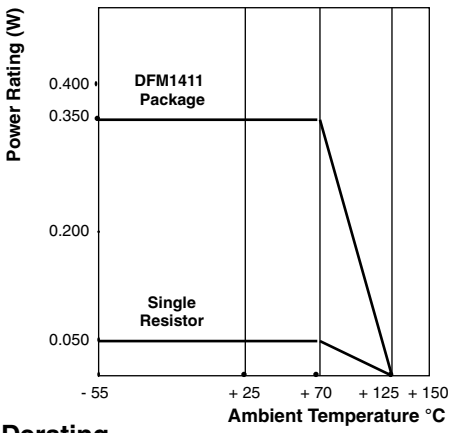
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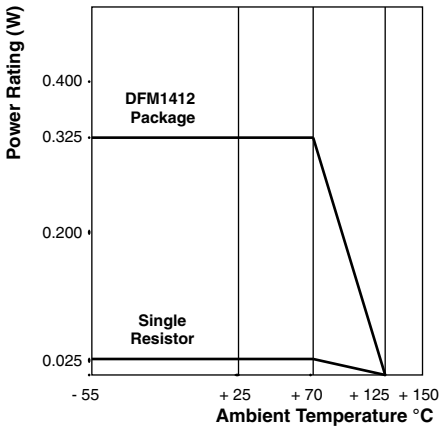
DIMENSIONS in inches (millimeters)



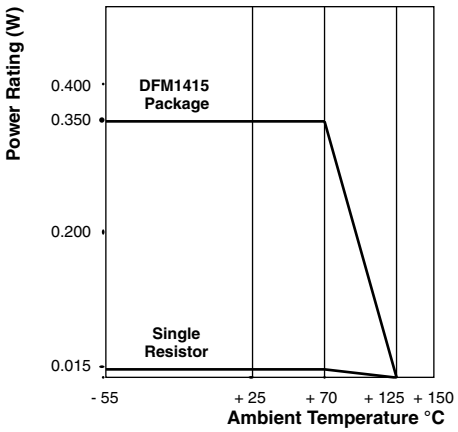
11 Schematic



12 Schematic



15 Schematic



Derating

MECHANICAL SPECIFICATIONS	
Marking resistance to solvents	Permanency testing per MIL-PRF-83401
Solderability	Per MIL-PRF-83401
Terminals	Per MIL-STD-1276 DFM1411, DFM1412 and DFM1415 = Type G (hot solder dipped) Hot solder dipped leads supplied as standard finish
Body	Epoxy filled ceramic sandwich

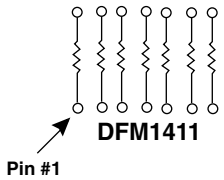
TECHNICAL SPECIFICATIONS		
PARAMETER	**UNIT**	**MDM SERIES**
Maximum operating voltage	V_{DC}	50
Voltage coefficient of resistance	V_{eff}	< 50 ppm
Dielectric strength	V_{AC}	100 min.
Insulation resistance	Ω	10 000M
Operating temperature range	°C	-55 to +125
Storage temperature range	°C	-55 to +150

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

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CIRCUIT APPLICATIONS

11 Schematic

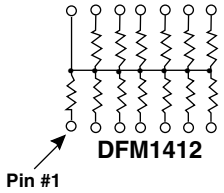


DFM1411 (M8340103xxxxxxA)
7 isolated resistors

The DFM1411 provides the user with 7 nominally equal resistors with each resistor isolated from all others. Commonly used in the following applications:

- "Wired OR" pull-up
- Power driven pull-up
- TTL input pull-down
- Line termination
- ECL output pull-down
- Long-line impedance balancing
- LED current limiting
- Power gate pull-up

12 Schematic

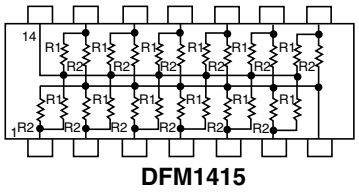


DFM1412 (M8340103xxxxxxB)
13 resistors with one pin common

The DFM1412 provides the user with a choice of 13 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 unused gate pull-up
- Digital pulse squaring
- TTL input pull-down
- High speed parallel pull-up

15 Schematic



DFM1415 (M8340103xxxxxxJ)
12 pairs of resistors

The DFM1415 provides the user with a choice of 12 pairs of R1/R2 resistor values for pulse squaring and TTL dual-line terminating requirements.

CAGE CODE: 91637

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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 % ΔR
Thermal shock	5 cycles between -65 °C and +125 °C	± 0.50 % ΔR
Short time overload	2.5 x rated working voltage for 5 s	± 0.25 % ΔR (char. K) ± 0.50 % ΔR (char. M)
Low temperature operation	45 min at full rated working voltage at -65 °C	± 0.25 % ΔR (char. K) ± 0.50 % ΔR (char. M)
Moisture resistance	240 h 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 s	± 0.25 % ΔR
Shock	Total of 18 shocks at 100 *g*'s	± 0.25 % ΔR
Vibration	12 h at maximum of 20 *g*'s between 10 Hz and 2000 Hz	± 0.25 % ΔR
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 % ΔR (char. K) ± 2.0 % ΔR (char. M)
Terminal strength	1.5 pound pull for 30 s	± 0.25 % ΔR
Insulation resistance	10 000 MΩ (minimum)	-
Dielectric withstanding voltage	No evidence of arcing or damage (200 V_{RMS} for 1 min)	-

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