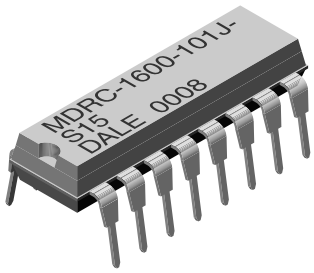
Resistor/Capacitor Networks, Dual-In-Line, Molded DIP, 16 Pin



FEATURES

- 0.190" [4.83 mm] maximum seated height
- Rugged molded case construction
- Thick film resistive elements
- Reduces total assembly cost
- Low temperature coefficient (- 30 °C to + 85 °C) ± 100 ppm/°C
- Compatible with automatic insertion equipment
- Reduces PC board space
- Lead (Pb)-free version is RoHS compliant

Pb Available

e1 **RoHS*** COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SCHEMATIC	POWER RATING $P_{25\,°C}$ W	RESISTOR CHARACTERISTICS				CAPACITOR CHARACTERISTICS	
			PACKAGE POWER RATING W at + 25 °C	RESISTANCE TOLERANCE ± %	TEMPERATURE COEFFICIENT (- 20 °C to + 85 °C) Typical	TCR TRACKING ± ppm/°C	CAPACITOR TOLERANCE	CAPACITANCE VOLTAGE RATING V max.
MDRC	1641	0.15 max	2.0 max.	± 2, or 2 Ω*	± 100 ppm/°C	50	0.1 µF + 40 %, - 20 %	25
MDRC	1642	0.15 max	2.0 max.	± 2, or 2 Ω*	± 100 ppm/°C	50	0.1 µF + 40 %, - 20 %	25
MDRC	1643	0.20 max	2.0 max.	± 2, or 2 Ω*	± 100 ppm/°C	50	0.1 µF + 40 %, - 20 %	25

* Whichever is greater

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MDRC1641500GD04 (preferred part numbering format)

M	D	R	C	1	6	4	1	5	0	0	G	D	0	4			

GLOBAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
MDRC	**16** = 16 Pin	**41** = ECL Terminator **42** = ECL Pull-Down **00** = Special	2 digit significant figure, followed by a multiplier **680** = 68 Ω **511** = 510 Ω	**G** = ± 2 % **S** = Special	**E04** = Lead (Pb)-free, Tube **D04** = Tin/lead, Tube	Blank = Standard (Dash Number) (up to 3 digits)

Historical Part Number example: MDRC1641500G (will continue to be accepted)

MDRC	16	41	500	G	D04
HISTORICAL MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

New Global Part Numbering: MDRC1643750GD04 (preferred part numbering format)

M	D	R	C	1	6	4	3	7	5	0	G	D	0	4			

GLOBAL MODEL	PIN COUNT	SCHEMATIC	IMPEDENCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
MDRC	**16** = 16 Pin	**43** = Thevenin Terminator	2 digit significant figure, followed by a multiplier **500** = 50 Ω	**G** = ± 2 % **J** = ± 5 %	**E04** = Lead (Pb)-free, Tube **D04** = Tin/lead, Tube	Blank = Standard (Dash Number) (up to 3 digits)

Historical Part Number example: MDRC1643750G (will continue to be accepted)

MDRC	16	43	750	G	D04
HISTORICAL MODEL	PIN COUNT	SCHEMATIC	IMPEDENCE VALUE	TOLERANCE CODE	PACKAGING

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

For technical questions, contact: ff2aresistors@vishay.com

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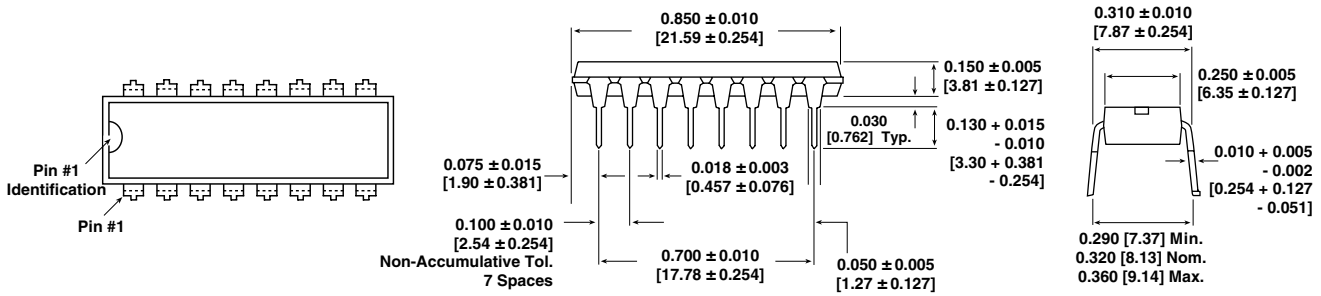
DIMENSIONS in inches [millimeters]



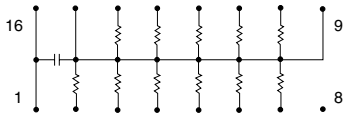
RESISTANCE VALUE IN OHMS (G TOLERANCE)			
MDRC1641 50, 68, 75, 100	**MDRC1643**		
	R^1	**R^2**	**Zo**
	81	130	50
MDRC1642 510	121	195	75
	162	260	100

TECHNICAL SPECIFICATIONS		
PARAMETER	**UNIT**	**MDRC**
Operating Voltage (at + 25 °C)	V_{AC}	50 maximum
Capacitor Dissipation Factor	%	< 3
Voltage Coefficient of Resistance (typical)	ppm/V	< 50
Operating Temperature Range	°C	- 30 to + 85 °C
Storage Temperature Range	°C	- 30 to + 85 °C

MECHANICAL SPECIFICATIONS	
Marking Resistance to Solvents	Permanency testing per MIL-STD-202, Method 215
Solderability	Per MIL-STD-202, Method 208E
Terminals	Copper alloy, solder plated
Body	Molded epoxy
Weight	1.5 grams

CIRCUIT APPLICATIONS

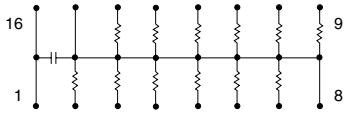
MDRC1641 Schematic



- 2.0 and - 5.2 Volt ECL Terminator

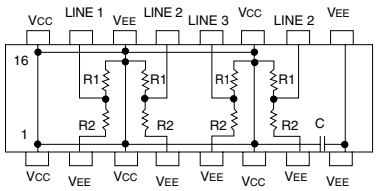
The MDRC1641 circuit contains 11 resistors of nominally equal value and a 0.01 microfarad decoupling capacitor. The MDRC-1641 is designed for ECL Line Termination to a - 2.0 volt buss. The 0.01 microfarad decoupling capacitor is for bypassing transients between supply voltages.

MDRC1642 Schematic



The MDRC1642 circuit contains 12 resistors of 510 ohm each and a 0.01 microfarad decoupling capacitor. The MDRC-1642 is designed for ECL Pull-down to a - 5.2 volt buss. The 0.01 microfarad decoupling capacitor is for bypassing voltage transients on the voltage buss.

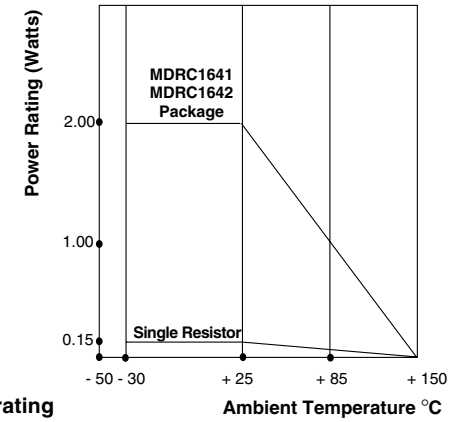
MDRC1641 Schematic



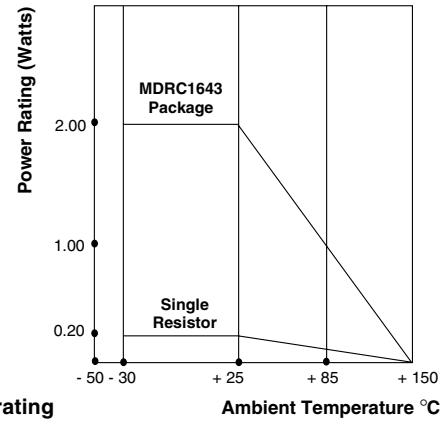
Thevenin Equivalent Terminator

The MDRC1643 contains four pair of series resistors. The circuit is compatible with ECL pin configurations. Each terminator section (series pair) contains a voltage divider between VCC (0 volt) and VEE (- 5.2 volt) providing a Thevenin equivalent voltage of - 2.0 volts. A 0.01 microfarad decoupling capacitor bypasses the VEE buss.

MDRC1641 and MDRC1642



MDRC1643



PERFORMANCE		
TEST	**CONDITIONS**	**MAX ΔR (Typical Test Lots)**
Thermal Shock	MDRC1641 and MDRC1642, 5 cycles between - 30 °C and + 85 °C MDRC1643, 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	MDRC1641 and MDRC1642, 45 minutes at full rated working voltage at - 30 °C MDRC1643, 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.	± 0.50 % ΔR
Terminal Strength	4.5 pound pull for 30 seconds	± 0.25 % ΔR
Insulation Resistance	10 000 Megohm (minimum)	-
Dielectric Withstanding Voltage	(200 V_{RMS} for 1 minute)	-

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