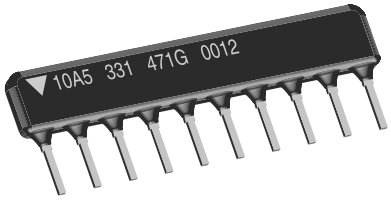
Thick Film Resistor Networks
Single-In-Line, Coated SIP 01, 03, 05 Schematics



FEATURES

- Body height: "A" profile = 0.195" [4.95mm]; "B" profile = 0.295" [7.50mm]
- "A" profile standard in 4 thru 12 pins
- Highly stable thick film
- Reduces total assembly costs
- Resistor elements protected by tough epoxy conformal coating
- Wide resistance range
- Available in bulk pack (preffered) or tube pack

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL/ SCHEMATIC	PACKAGE HEIGHT	RESISTOR POWER RATING Max. @ 70°C*	RESISTANCE RANGE Ω	TEMPERATURE COEFFICIENT (- 55°C to + 125°C) ppm/°C	STANDARD TOLERANCE %	TCR TRACKING (- 55°C to + 125°C) ppm/°C	OPERATING VOLTAGE VDC Max.
CSCxxx01	A	0.20 W	10 - 50	± 250	± 2 (1%)**	± 50	100
	B	0.25 W	50.1 - 2.2M	± 100			
CSCxxx03	A	0.30 W	10 - 50	± 250	± 2 (1%)**	± 50	100
	B	0.40 W	50.1 - 2.2M	± 100			
CSCxxx05	A	0.20 W	10 - 50	± 250	± 2 (1%)**	± 150	100
	B	0.25 W	50.1 - 2.2M	± 100			

* For resistor power ratings @ + 25°C see derating curves.
• See derating curves for Package Power Rating.
** Contact factory for 1%

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CSC Series
Voltage Coefficient of Resistance	V_{eff}	< 50ppm typical
Dielectric Strength	VAC	200
Isolation Resistance (03 Schematic)	Ω	> 100M
Operating Temperature Range	°C	- 55 to + 125

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CSC08A03100RGDA (preferred part numbering format)

C	S	C	0	8	A	0	3	1	0	0	R	G	D	A			

GLOBAL MODEL	PIN COUNT	PACKAGE HEIGHT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
CSC	**04** = 4 Pin **08** = 8 Pin **12** = 12 Pin	**A** = "A" Profile **B** = "B" Profile	**01** = Bussed **03** = Isolated **00** = Special	**R** = Decimal **K** = Thousand **M** = Million **10R0** = 10Ω **680K** = 680KΩ **1M00** = 1.0MΩ	**F** = ± 1% **G** = ± 2% **J** = ± 5% **S** = Special	**EK** = Lead Free, Bulk **EJ** = Lead Free, Tube **PA** = Tin/Lead, Bulk **DA** = Tin/Lead, Tube	Blank = Standard (Dash Number) (up to 3 digits) From **1-999** as applicable

Historical Part Number example: CSC08A03101G (will continue to be accepted)

CSC	08	A	03	101	G	D03
HISTORICAL MODEL	PIN COUNT	PACKAGE HEIGHT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

New Global Part Numbering: CSC08A05131AGPA (preferred part numbering format)

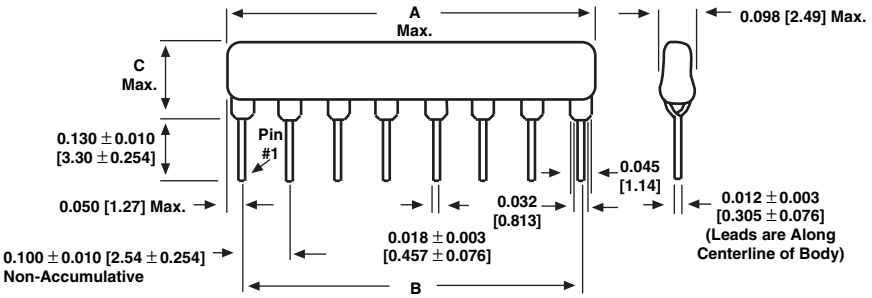
C	S	C	0	8	A	0	5	1	3	1	A	G	P	A			

GLOBAL MODEL	PIN COUNT	PACKAGE HEIGHT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING	SPECIAL
CSC	**04** = 4 Pin **08** = 8 Pin **12** = 12 Pin	**A** = "A" Profile **B** = "B" Profile	**05** = Dual Terminator	3 digit Impedence code, followed by Alpha modifier (see Impedence codes table)	**F** = ± 1% **G** = ± 2% **J** = ± 5%	**EK** = Lead Free, Bulk **EJ** = Lead Free, Tube **PA** = Tin/Lead, Bulk **DA** = Tin/Lead, Tube	Blank = Standard (Dash Number) (up to 3 digits) From **1-999** as applicable

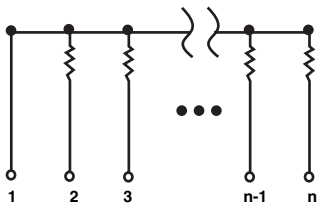
Historical Part Number example: CSC08A05221331G (will continue to be accepted)

CSC	08	A	05	221	331	G	P03
HISTORICAL MODEL	PIN COUNT	PACKAGE HEIGHT	SCHEMATIC	RESISTANCE VALUE 1	RESISTANCE VALUE 2	TOLERANCE CODE	PACKAGING

DIMENSIONS in inches [millimeters]

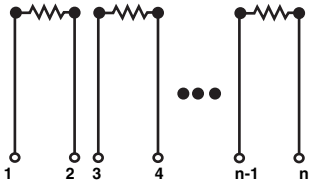


01 Schematic



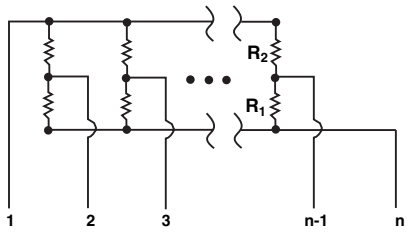
GLOBAL MODEL	NUMBER OF RESISTORS	A (Maximum)	B	C (Maximum)
CSC04	3	0.390 [9.90]	0.300 [7.62]	"A" Profile = 0.195 [4.95] "B" Profile = 0.295 [7.50]
CSC05	4	0.490 [12.45]	0.400 [10.16]	
CSC06	5	0.590 [14.99]	0.500 [12.70]	
CSC07	6	0.690 [17.53]	0.600 [15.24]	
CSC08	7	0.790 [20.07]	0.700 [17.78]	
CSC09	8	0.890 [22.61]	0.800 [20.32]	
CSC10	9	0.990 [25.15]	0.900 [22.86]	
CSC11	10	1.09 [27.69]	1.00 [25.40]	
CSC12	11	1.19 [30.23]	1.100 [27.94]	

03 Schematic



GLOBAL MODEL	NUMBER OF RESISTORS	A (Maximum)	B	C (Maximum)
CSC04	2	0.390 [9.90]	0.300 [7.62]	"A" Profile = 0.195 [4.95] "B" Profile = 0.295 [7.50]
CSC06	3	0.590 [14.99]	0.500 [12.70]	
CSC08	4	0.790 [20.07]	0.700 [17.78]	
CSC10	5	0.990 [25.15]	0.900 [22.86]	
CSC12	6	1.19 [30.23]	1.100 [27.94]	

05 Schematic



GLOBAL MODEL	NUMBER OF RESISTORS	A (Maximum)	B	C (Maximum)
CSC04	4	0.390 [9.90]	0.300 [7.62]	"A" Profile = 0.195 [4.95] "B" Profile = 0.295 [7.50]
CSC05	6	0.490 [12.45]	0.400 [10.16]	
CSC06	8	0.590 [14.99]	0.500 [12.70]	
CSC07	10	0.690 [17.53]	0.600 [15.24]	
CSC08	12	0.790 [20.07]	0.700 [17.78]	
CSC09	14	0.890 [22.61]	0.800 [20.32]	
CSC10	16	0.990 [25.15]	0.900 [22.86]	
CSC11	18	1.09 [27.69]	1.00 [25.40]	
CSC12	20	1.19 [30.23]	1.100 [27.94]	

MECHANICAL SPECIFICATIONS	
Marking Resistance to Solvents:	Permanency testing per MIL-STD-202, Method 215.
Solderability:	Per MIL-STD-202, Method 208E, RMA flux.
Body:	High alumina, epoxy coated.
Terminals:	Solder plated leads.

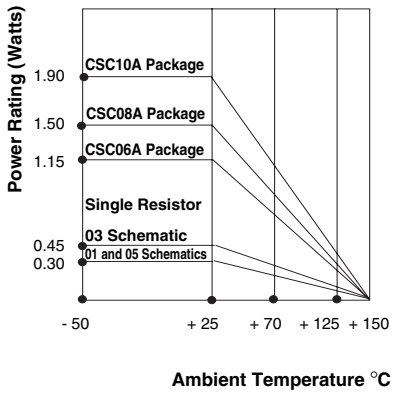
STOCKED RESISTANCE VALUES IN OHMS ("G" TOLERANCE)

Standard E-24 resistance values stocked. Consult factory.

Many dual terminator resistance values stocked. Consult factory

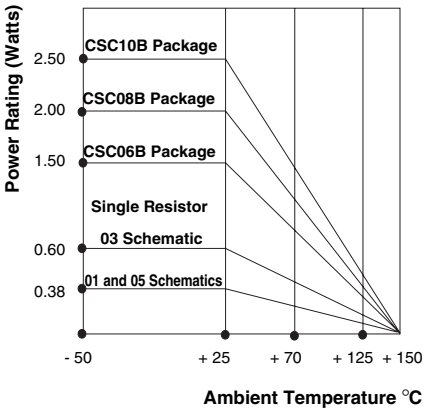
IMPEDANCE CODES					
CODE	$R_1(\Omega)$	$R_2(\Omega)$	CODE	$R_1(\Omega)$	$R_2(\Omega)$
500B	82	130	141A	270	270
750B	120	200	181A	330	390
800C	130	210	191A	330	470
990A	160	260	221B	330	680
101C	180	240	281B	560	560
111C	180	270	381B	560	1.2K
121B	180	390	501C	620	2.7K
121C	220	270	102A	1.5K	3.3K
131A	220	330	202B	3K	6.2K

"A" Profile



"A" PROFILE + 70°C PACKAGE RATINGS	
CSC12A	1.5 watts
CSC11A	1.37 watts
CSC10A	1.25 watts
CSC09A	1.12 watts
CSC08A	1.00 watts
CSC07A	0.87 watts
CSC06A	0.75 watts
CSC05A	0.62 watts
CSC04A	0.40 watts

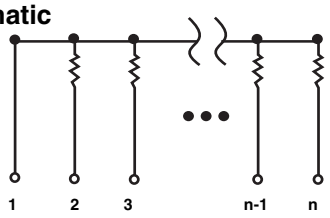
"B" Profile



"B" PROFILE + 70°C PACKAGE RATINGS	
CSC12B	1.90 watts
CSC11B	1.75 watts
CSC10B	1.60 watts
CSC09B	1.45 watts
CSC08B	1.30 watts
CSC07B	1.15 watts
CSC06B	1.00 watts
CSC05B	0.80 watts
CSC04B	0.60 watts

CIRCUIT APPLICATIONS

01 Schematic



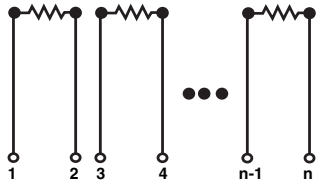
Bussed

The CSCxxx01 single-in-line resistor networks provide the user with nominally equal resistors, each connected to a common pin (Pin No. 1). Commonly used in the following applications:

- "Wired OR" Pull-up
- Open Collector Pull-up
- Power Gate Pull-up
- TTL Input Pull-down
- MOS/ROM Pull-up/Pull-down
- TTL Unused Gate Pull-up

* “A” profile standard, “B” Profile available.

03 Schematic



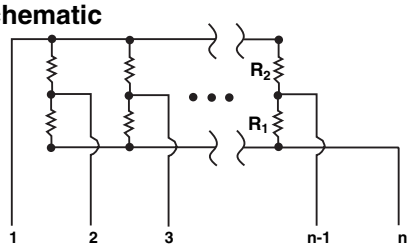
Isolated

The CSCxxx03 single-in-line resistor networks provide the user with nominally equal resistors. Each resistor is isolated from all others. Commonly used in the following applications:

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

* “A” Profile standard, “B” Profile available.

05 Schematic



Dual Terminator

The CSCxxx05 circuits contain series pairs of resistors. Each series pair is connected between two common lines. The junction of these resistor pairs is connected to the input terminals. The 05 circuits are designed for TTL dual-line termination and pulse squaring.

* “A” profile standard, “B” Profile available.

PERFORMANCE

TEST	CONDITIONS	MAX. ΔR (Typical Test Lots)
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	± 1.00% ΔR
Resistance to Soldering Heat	Leads immersed in + 350°C solder to within 1/16" of 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 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. 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 V RMS for 1 minute)	—

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