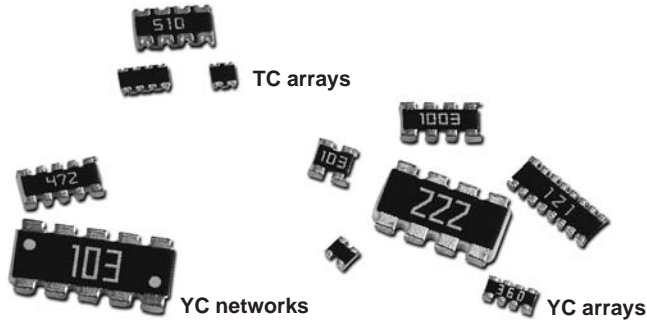


# Resistor Chip Selection Charts

## Introduction

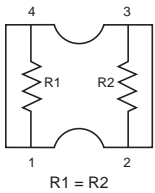


### FEATURES

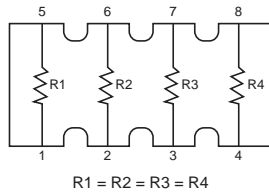
- Integrated discrete chip resistors from 2 to 8 pcs
- More efficient in pick & place application
- Low assembly costs
- Reduced size of final equipment
- Higher component and equipment reliability

### Schematics

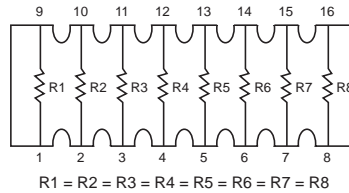
**YC102/122/162**



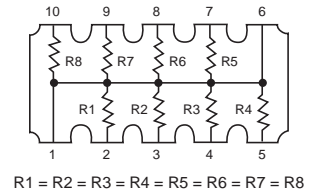
**YC124/164/324**



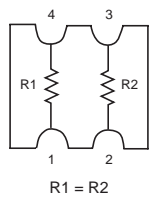
**YC248**



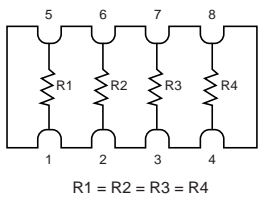
**YC358**



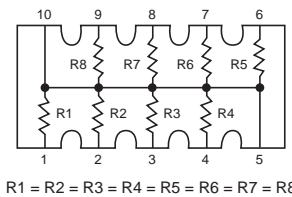
**TC122**



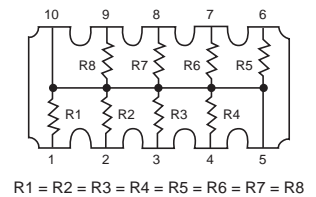
**TC124/164**



**YC158**

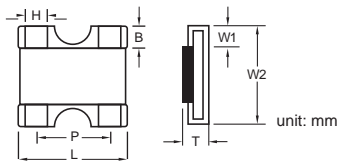


**YC358**

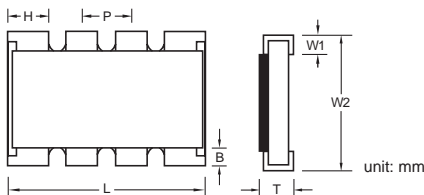


### Dimensions

**YC/TC 102/122/162**



**YC/TC 124/164/324/158/358/248**

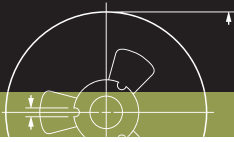


TYPE	H	B	P	L	T	W <sub>1</sub>	W <sub>2</sub>
YC102	0.35 ±0.10	0.20 ±0.10	0.50 ±0.05	0.80 ±0.10	0.35 ±0.10	0.15 ±0.10	0.60 ±0.10
YC122	0.21+0.10/-0.05	0.20 ±0.10	0.67 ±0.05	1.00 ±0.10	0.35 ±0.10	0.25 ±0.10	1.00 ±0.10
YC162	0.50 ±0.10	0.30 ±0.10	0.80 ±0.05	1.60 ±0.10	0.60 ±0.10	0.30 ±0.10	1.60 ±0.10
YC124	0.45 ±0.05	0.20 ±0.15	0.50 ±0.05	2.00 ±0.10	0.45 ±0.10	0.30 ±0.15	1.00 ±0.10
YC164	0.65 ±0.05	0.30 ±0.15	0.80 ±0.05	3.20 ±0.15	0.60 ±0.10	0.30 ±0.15	1.60 ±0.15
YC324	1.10 ±0.15	0.50 ±0.20	1.27 ±0.05	5.08 ±0.20	0.60 ±0.10	0.50 ±0.15	3.20 ±0.20
YC248	0.45 ±0.05	0.30 ±0.15	0.50 ±0.05	4.00 ±0.20	0.45 ±0.10	0.40 ±0.15	1.60 ±0.15
TC122	0.30 ±0.05	0.25 ±0.15	0.50 ±0.05	1.00 ±0.10	0.30 ±0.10	0.25 ±0.15	1.00 ±0.10
TC124	0.30 ±0.10	0.20 ±0.10	0.50 ±0.05	2.00 ±0.10	0.40 ±0.10	0.25 ±0.10	1.00 ±0.10
TC164	---	0.30 ±0.15	0.80 ±0.05	3.20 ±0.15	0.60 ±0.10	0.30 ±0.15	1.60 ±0.15
YC158	0.45 ±0.05	0.30 ±0.15	0.64 ±0.05	3.20 ±0.20	0.60 ±0.10	0.35 ±0.15	1.60 ±0.15
YC358	1.10 ±0.15	0.50 ±0.15	1.27 ±0.05	6.40 ±0.20	0.60 ±0.10	0.50 ±0.15	3.20 ±0.20



Electrical characteristics										
Style	Power P <sub>70</sub>	Operating Temp. range	MWV	RCOV	DWV	Resistance range & tolerance		TCR (ppm/°C)	Jumper criteria (unit:A)	
YC102	1/32W	-55°C ~ +125°C	15V	30V	30V	E24 ±5% E24/E96 ±1% Zero ohm jumper	10Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω	±200	Rated current	0.5
									Max. current	1.0
YC122	1/16W	-55°C ~ +125°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	1Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω		Rated current	0.5
									Max. current	1.0
YC162	1/16W	-55°C ~ +155°C	50V	100V	100V	E24 ±5% Zero ohm jumper	10Ω ~ 1MΩ < 0.05Ω		Rated current	1.0
									Max. current	2.0
YC124	1/16W	-55°C ~ +155°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	10Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω		Rated current	1.0
									Max. current	2.0
YC164	1/16W	-55°C ~ +155°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	1Ω ~ 1MΩ 1Ω ~ 1MΩ < 0.05Ω		Rated current	1.0
									Max. current	2.0
YC324	1/8W	-55°C ~ +155°C	200V	500V	500V	E24 ±5% E24/E96 ±1%	10Ω ~ 1MΩ 10Ω ~ 1MΩ		---	---
YC248	1/16W	-55°C ~ +155°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	10Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω		Rated current	2.0
									Max. current	10.0
TC122	1/16W	-55°C ~ +125°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	10Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω		Rated current	1.0
								Max. current	1.5	
TC124	1/16W	-55°C ~ +125°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	10Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω	Rated current	1.0	
								Max. current	1.5	
TC164	1/16W	-55°C ~ +155°C	50V	100V	100V	E24 ±5% E24/E96 ±1% Zero ohm jumper	10Ω ~ 1MΩ 10Ω ~ 1MΩ < 0.05Ω	Rated current	1.0	
								Max. current	2.0	
YC158	1/16W	-55°C ~ +155°C	25V	50V	50V	E24 ±5%	10Ω ~ 100K	---	---	
YC358	1/16W	-55°C ~ +155°C	50V	100V	100V	E24 ±5%	10Ω ~ 330K	---	---	

Environmental Characteristics				
Performance test		Test method	Procedure	Requirements
Life		MIL-STD-202G-method 108A	1,000 hours at 70±5°C applied RCWV 1.5 hours on, 0.5 hours off, still air required	±(2%+ 0.05Ω) <100MΩ for jumper
High temperature exposure		MIL-STD-202G-method 108A	1,000 hours at maximum operating temperature depending on specification, unpowered	±(1%+ 0.05Ω) <50MΩ for jumper
Moisture resistance		MIL-STD-202G-method 106F	Each temp. / humidity cycle is defined at 8 hours (method 106F), 3 cycles / 24 hours for 10d with 25°C / 65°C 95% R.H	±(2%+ 0.05Ω) <100MΩ for jumper
Thermal shock		MIL-STD-202G-method 107G	LCT / UCT Number of cycles required is 300. Maximum transfer time is 20 seconds.	±(0.5%+ 0.05Ω) for 10K to 10M ±(1%+ 0.05Ω) for others
Solderability	Wetting	IPC/JEDECJ-STD-002B testB	Electrical test not required. magnification 50X. Leadfree solder bath at 245±3°C, Dipping time: 3±0.5 seconds	Well tinned (≥95% covered)
	Resistance to soldering heat	MIL-STD-202G-method 210F	Leadfree solder, 270°C, 10 seconds immersion time	±(1%+ 0.05Ω) <50MΩ for jumper
Short time overload		MIL-R-55342D-para 4.7.5	2.5 times RCWV or maximum overload voltage whichever is less for 5 seconds at room temp.	±(2%+ 0.05Ω) <50MΩ for jumper



# Resistor Chip Selection Charts

## Arrays, convex and concave

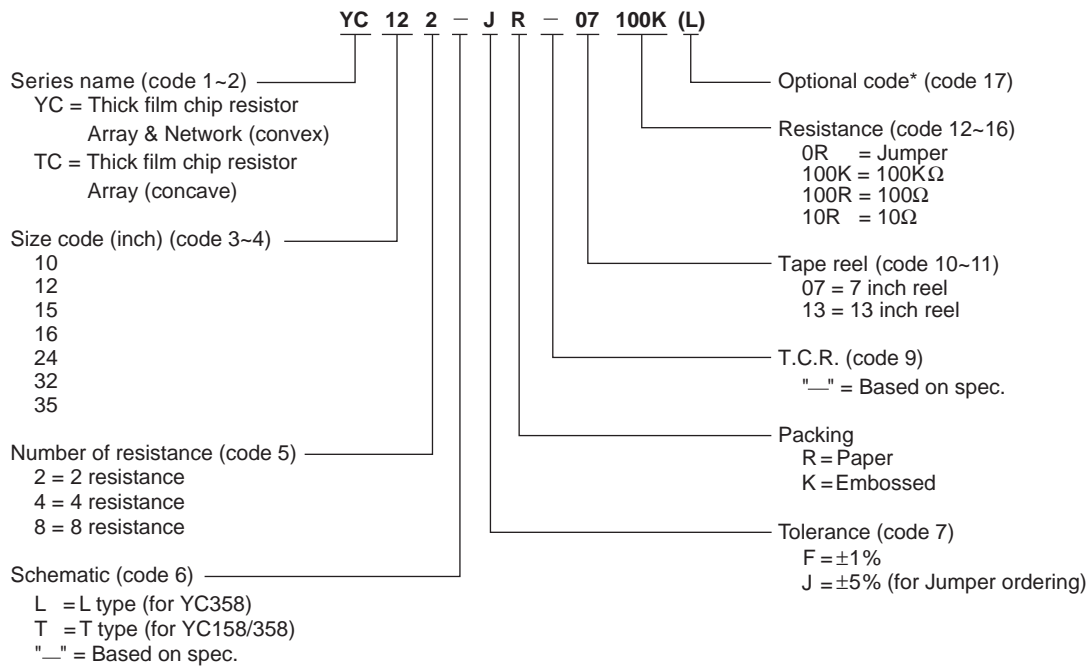
R-Chip Arrays / YC & TC series											
Arrays / YC & TC series	YC 122 series		YC 124 series		YC 248 series		YC/TC164 series			YC 324 series	
Size: inch (mm)	2 x 0402 (1 x 1 mm)		4 x 0402 (2 x 1 mm)		8 x 0602 (4.0 x 1.6 mm)		4 x 0603 (3.2 x 1.6 mm)			4 x 1206 (5.2 x 3.1 mm)	
Power P <sub>70</sub>	1/16W		1/16W		1/16W		1/16W			1/8W	
Tolerance	±5%	±1%	±5%	±1%	±5%	±1%	±5%	±1%	±5%	±1%	±5%
Type	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)	R-Array/R- -Network (concave)	R-Array/R- -Network (convex)	R-Array/R- -Network (convex)
Resistance Range	E24	E24/E96	E24	E24/E96	E24	E24/E96	E24	E24/E96	E24	E24/E96	E24
Jumper											
10 Ω											
15 Ω											
22 Ω											
33 Ω											
47 Ω											
68 Ω											
100 Ω											
150 Ω											
220 Ω											
330 Ω											
470 Ω											
680 Ω											
1 kΩ											
1.5 kΩ											
2.2 kΩ											
3.3 kΩ											
4.7 kΩ											
6.8 kΩ											
10 kΩ											
15 kΩ											
22 kΩ											
33 kΩ											
47 kΩ											
68 kΩ											
100 kΩ											
150 kΩ											
220 kΩ											
330 kΩ											
470 kΩ											
680 kΩ											
1 MΩ											
Remark											

- Note:**
1. Zero Ohm Jumper<0.05 Ohm
  2. Value in "Resistance" means the minimum one.
  3. 4\*0603 (Concave) 1% on request
  4. Products with lead free terminations meet RoHS requirements.(Non of the forbidden materials are used in products / production) The Pb-glass contained in electrodes , resistor element and glass is exempted by RoHS.



### Global part number - Preferred type

Ordering example: YC122-JR-07100K(L)



**\*Note:** 1. All our RSMD products meet RoHS compliant. "LFP" of the internal 2D reel label mentions "Lead Free Process"  
 2. On customized label, "LFP" or specific symbol printed and the optional "L" at the end of CTC / 12NC can be added (both are on customer request)

### Ordering information - Phycomp world wide - Traditional type

#### Array thick film resistor chips

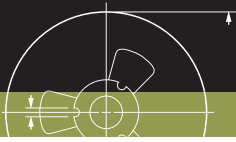
Size: inch / mm	2 x 0402 / 1 x 1		4 x 0402 / 2 x 1		8 x 0402 / 4.0 x 1.6		4 x 0603 / 3.2 x 1.3			4 x 1206 / 5.2 x 3.1
Power	1/16W		1/16W		1/16W		1/16W			1/8W
Tolerance	+5%	+1%	+5%	+1%	+5%	+1%	+5%	+1%	+5%	+5%
Type	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)	R-array/ R-network (convex)
Resistance	E24	E24/E96	E24	E24/E96	E24	E24/E96	E24	E24/E96	E24	E24
Packing	paper tape		paper tape		paper tape		paper tape			blister tape
Quantity	4 000	---	---	---	---	---	---	---	---	2350 039 10...L
	5 000	---	---	---	2350 053 10...L	2350 043 1...L	2350 035 10...L	2350 025 1...L	2350 034 10...L	---
	10 000	2350 013 11...L	2350 013 2...L	2350 033 11...L	2350 023 2...L	---	---	---	---	---
Jumper	5 000	---	---	---	2350 053 91001L	---	2350 035 91001L	---	2350 034 91001L	---
	10 000	2350 013 91001L	---	2350 033 91001L	---	---	---	---	---	---

**For ordering rules:** See page 107 for E24/E96 values and the last 4 or 3 digits of the 12NC catalogue number.

### Ordering information - Phycomp North America - Traditional type

Refer to page 106.





# Resistor Chip Selection Charts

## Networks, T-type and L-type

R-Chip Network / YC series			
Network / YC series	YC158 series	YC358 series	
Size: inch (mm)	0612 (1632)	1225 (3264)	
Power P <sub>70</sub>	1/16W	1/16W	
Tolerance	±5%		
Type	T-Type 10 Pin , PIN 5 and PIN 10 no resistance	T-Type 10 Pin , PIN 5 and PIN 10 no resistance	L-Type 10 Pin , PIN 1 and PIN 6 no resistance
Resistance Range	E24	E24	E24
10 Ω			
15 Ω			
22 Ω			
33 Ω			
47 Ω			
68 Ω			
100 Ω			
150 Ω			
220 Ω			
330 Ω			
470 Ω			
680 Ω			
1 kΩ			
1.5 kΩ			
2.2 kΩ			
3.3 kΩ			
4.7 kΩ			
6.8 kΩ			
10 kΩ			
15 kΩ			
22 kΩ			
33 kΩ			
47 kΩ			
68 kΩ			
100 kΩ			
150 kΩ			
220 kΩ			
330 kΩ			
Remark			

- Note:**
1. 8R-Network, Convex terminations
  2. Zero Ohm Jumper<0.05 hm
  3. Value in "Resistance" means the minimum one.
  4. Products with lead free terminations meet RoHS requirements.(Non of the forbidden materials are used in products / production) The Pb-glass contained in electrodes , resistor element and glass is exempted by RoHS.

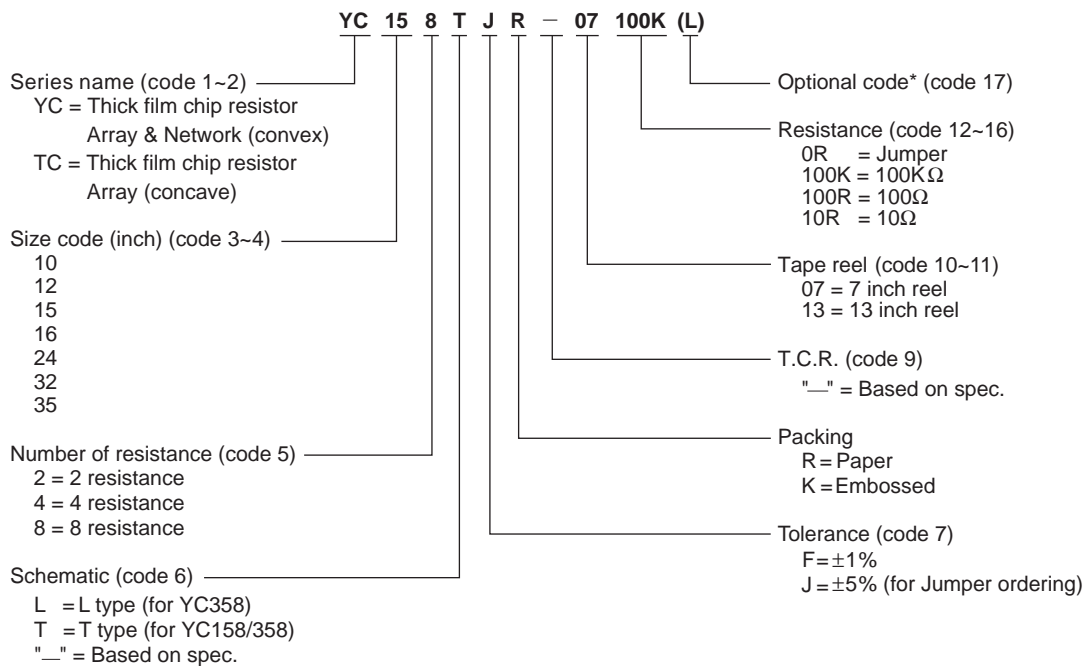


# Resistor Chip Selection Charts

## Networks, T-type and L-type

### Global part number - Preferred type

Ordering example: YC158TJR-07100K(L)



**\*Note:** 1. All our RSMD products meet RoHS compliant. "LFP" of the internal 2D reel label mentions "Lead Free Process"  
2. On customized label, "LFP" or specific symbol printed and the optional "L" at the end of CTC / 12NC can be added (both are on customer request)

### Ordering information - Phycomp world wide - Traditional type

Network thick film resistor chips			
Size: inch (mm)	0612 (1632)	1225 (3264)	
Power	1/32W	1/16W	
Tolerance	+5%	+5%	
Type	T-type 10 Pin/8R PIN 5 and PIN 10 no resistance	T-type 10 Pin/8R PIN 5 and PIN 10 no resistance	L-type 10 Pin/8R PIN 1 and PIN 6 no resistance
Resistance	E24	E24	E24
Packing	paper tape	blister tape	
Quantity	4 000 5 000	2350 201 10...L	2350 200 10...L
	---	---	---

**For ordering rules:** See page 107 for E24/E96 values and the last 4 or 3 digits of the 12NC catalogue number.

### Ordering information - Phycomp North America - Traditional type

Refer to page 106.

