



# SYNTON-TECH CORPORATION

## CHIP NETWORK

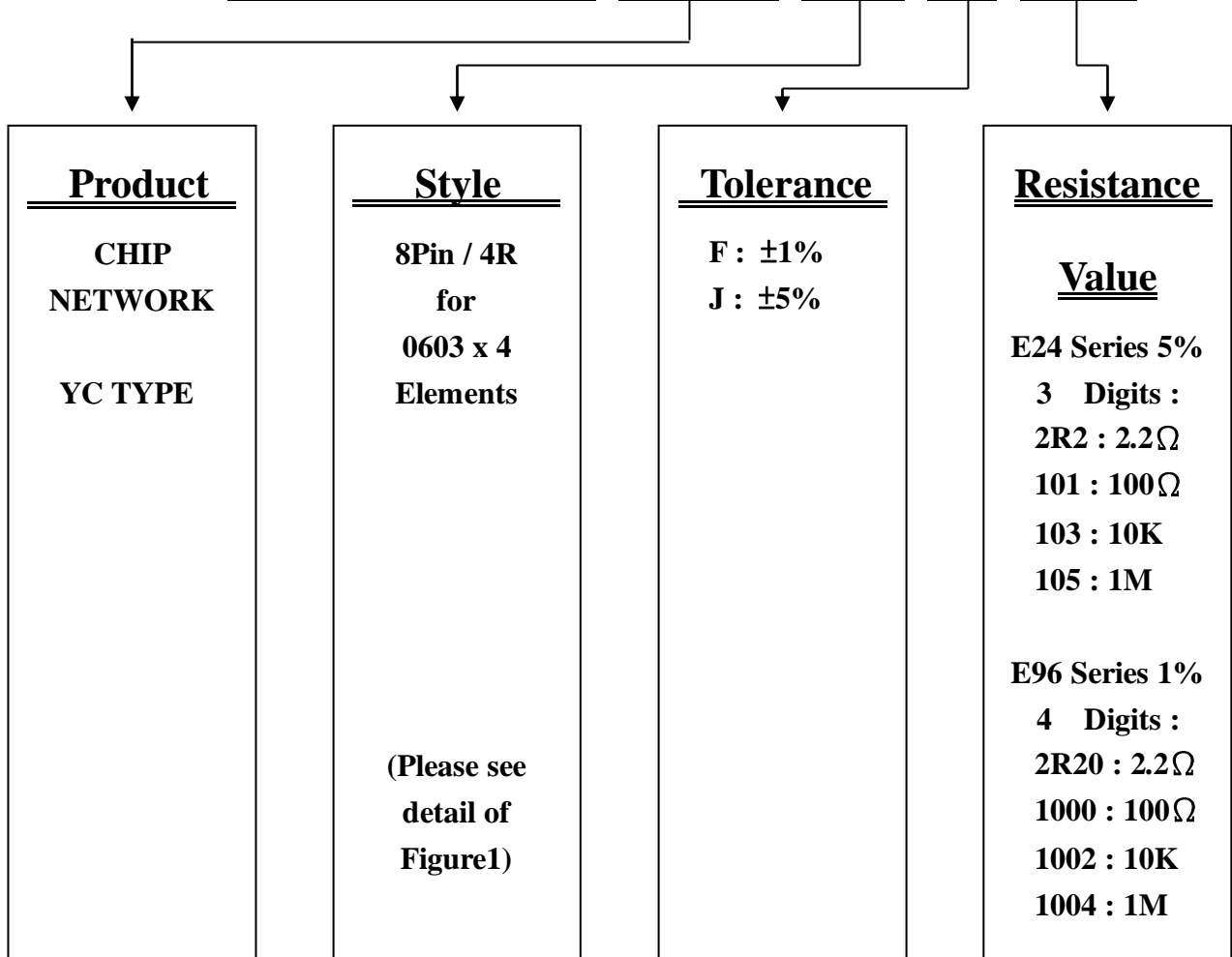
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**1.SUBJECT** : This specification applies on the chip resistors network  
was made by **SYNTON-TECH** Corporation .

**2.PART NUMBER** : Part number of the chip resistor is identified  
by the No. of Resistors, tolerance, and resistance  
value .

**Example :** **DESCRIPTION : YC16 8P4R 5% 10K**

**SYNTON CODE : YC16 4R J 103**



<b>APPROVED</b>	<b>CHECKED</b>	<b>DESIGNED</b>	<b>REMARK</b>	<b>DOCUMENT NO.</b>
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### 3.ELECTRICAL CHARACTERISTICS

STYLE	YC16
POWER	1/10W (0603)
Maximum Working Voltage	50V
Maximum Overload Voltage	100V
Dielectric Withstand Voltage	100V
No. of resistors	4R
Resistance Range	0Ω, 10Ω ~ 1MΩ
Operating Temp. Range	-55°C ~ +155°C
Temperature Coefficient (± PPM / °C)	±200PPM/°C

Figure 1

### 4. POWER RATING

(1)Power Derating : The rated power at the temperature in excess of 70°C shall be derated in accordance with figure3

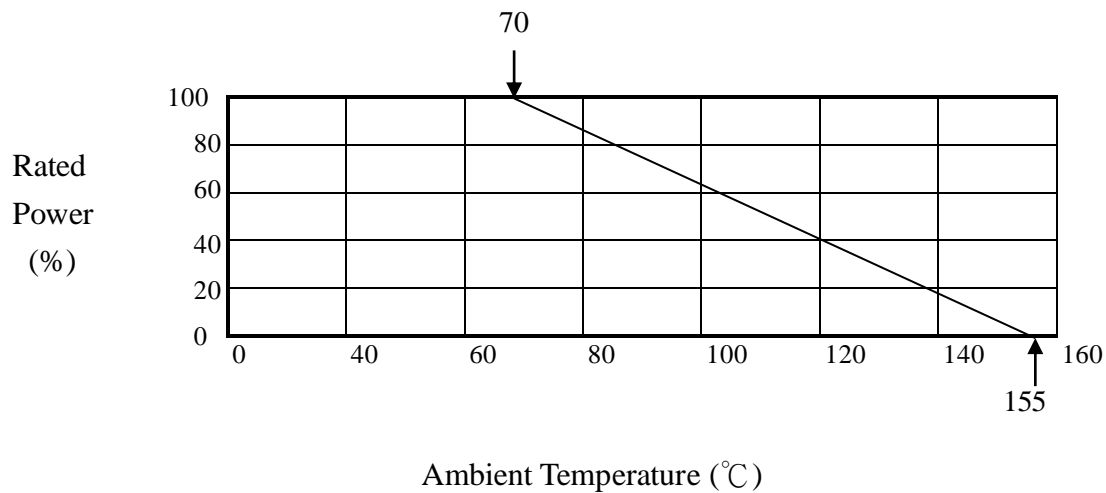


Figure2



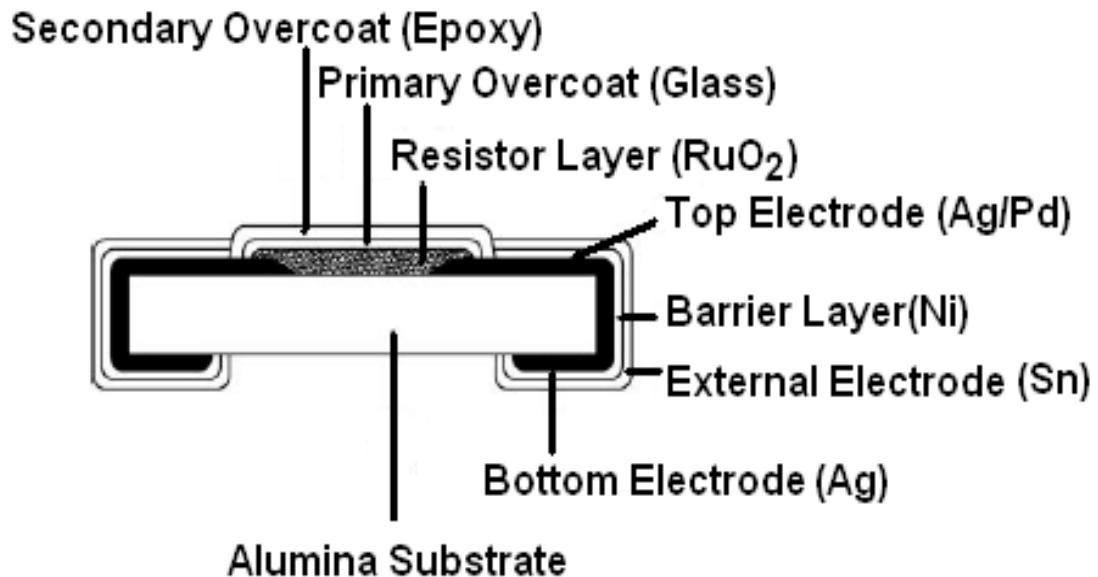
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**(2) Rated Voltage :** The DC or AC(rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$$V = \sqrt{R \times P}$$

Where V : Continuous rated DC or AC (rms) working voltage (v)  
P : Rated power (w)  
R : Resistance value ( $\Omega$ )

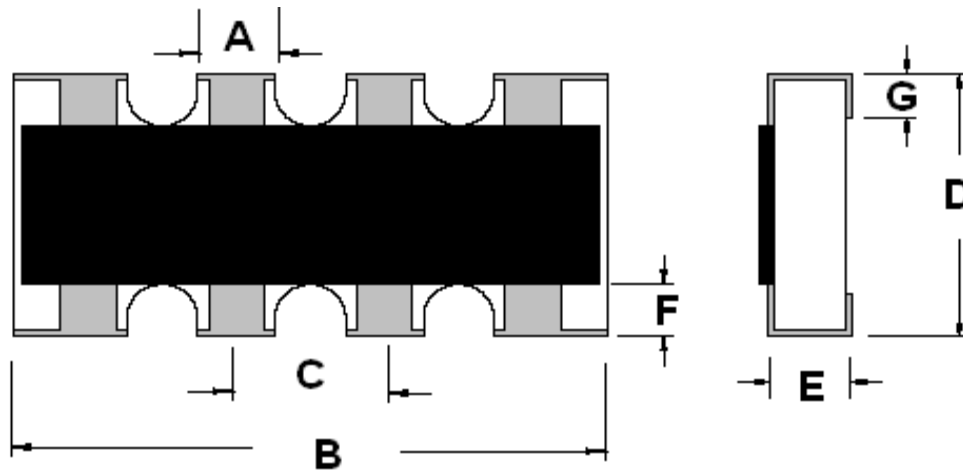
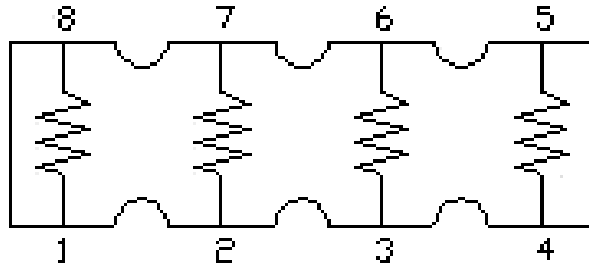
## 5.CONSTRUCTION AND MATERIALS





**5.1 DIMENSIONS**  
**YC16(8Pin/4R)**

**R1=R2=R3=R4**



Unit:m/m

TYPE	NUMBEROF RESISTORS	A	B	C	D	E	F	G
YC16	8P4R	0.5±0.15	3.2±0.2	0.8±0.2	1.6±0.2	0.55±0.1	0.3±0.2	0.3±0.2

Figure3



## 6. CHARACTERISTICS

### (1) Temperature Coefficient of Resistance(T.C.R.)

Test Method : Measure resistance at +25°C or specified room temperature as R1, then measure at -55°C and +155°C respectively as R2.

Determine the temperature coefficient of Resistance from the following formula.

$$\text{T. C. R.} = \frac{R2 - R1}{R1 (t2 - t1)} \times 10^6 \text{ (ppm / } ^\circ\text{C )}$$

Where t1 = +25°C or specified room temperature  
t2 = -55°C or +155°C ±3°C

### (2) Thermal Shock

Test Method : -55°C for 2 minutes and +125°C for 2 minutes as One cycle, after 5 cycles the specimen shall be Stabilized at room temperature for one hour Minimum and then measure the  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(1.0\%+0.05\ \Omega)$

### (3) Low Temperature Operation

Test Method :Place the specimen in a test chamber maintained at -55°C. After one hour stabilization at this temperature, full rated working voltage shall be applied for 45 minutes. 15 minutes after remove the voltage, the specimen shall be removed from the chamber and stabilized at room temperature for 24 hours minimum. Measure  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(1.0\%+0.05\ \Omega)$  No mechanical damage.

**(4) Short Time Overload**

Test Method : Apply 2.5 times of rated voltage but not exceeding the maximum overload voltage 1 for 5 seconds. Have the specimen stabilized at room temperature for 30 minutes minimum. Measure the  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(2.0\%+0.05 \Omega)$  No evidence of mechanical damage.

**(5) High Temperature Exposure**

Test Method : Place the specimen in an oven at  $125\pm 5^{\circ}\text{C}$  for 100 hours. Remove the specimen from the oven and stabilize at room temperature for one hour minimum. Measure the  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(2.0\%+0.1 \Omega)$

**(6) Resistance to Soldering Heat**

Test Method : Immerse the specimen in the solder pot at  $260\pm 5^{\circ}\text{C}$  for  $10\pm 1$  seconds. Have the specimen stabilized at room temperature for 30 minutes minimum. Measure the  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(1.0\%+0.05 \Omega)$

**(7) Moisture Resistance**

Test Method : Place the specimen in a test chamber at  $40\pm 2^{\circ}\text{C}$  and 90~95% relative humidity. Apply the rated voltage to the specimen at the 1.5 hours on and 0.5 hour off cycle. The total length of test is 1000  $\pm 48/-0$  Hrs. After the test, have the specimen stabilized at room temperature for one hour minimum. Measure the  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(3.0\%+0.1 \Omega)$

**(8) Load Life**

Test Method : Place the specimen in the oven at  $70\pm 2^{\circ}\text{C}$ . Apply the rated voltage to the specimen at 1.5 hours on and 0.5 hour off cycle. The total length of test is  $1000 + 48/-0$  hours. After the test have the specimen stabilized at room temperature for one hour minimum and measure the  $\Delta R/R(\%)$ .

Acceptance Standard :  $\pm(3.0\% + 0.1 \Omega)$

**(9) Solderability**

Test Method : Immerse the specimen in the solder pot at  $245\pm 5^{\circ}\text{C}$  for 5 seconds

Acceptance Standard : At least 95% solder coverage on the termination

**(10) Bending Strength**

Test Method : Mount the specimen on a test board . Slowly apply the force till the board is bend at  $5+0.2$  mm for  $5\pm 1$  seconds, and measure the  $\Delta R/R(\%)$  at this position.

Acceptance Standard :  $\pm(1.0\% + 0.05 \Omega)$

**(11) Insulation Resistance**

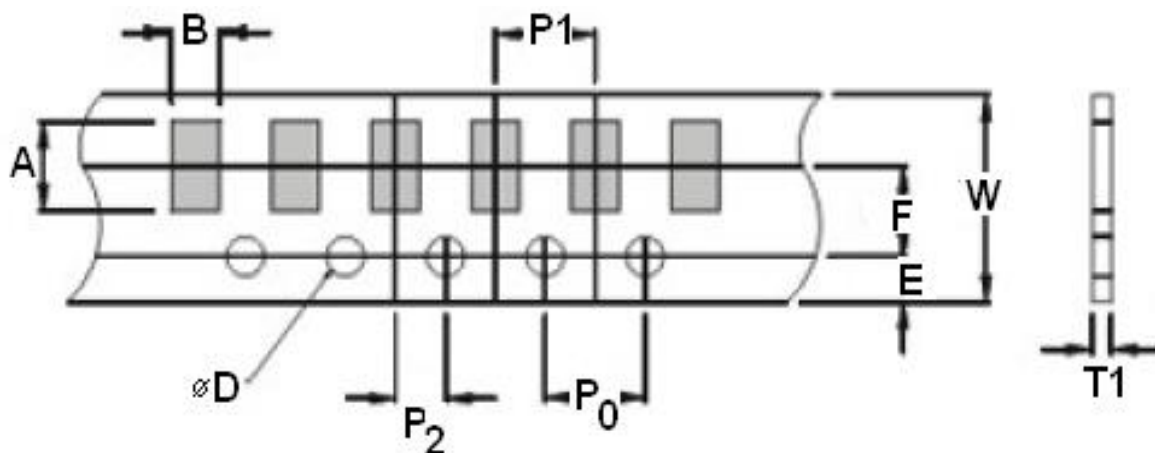
Test Method : Place the specimen in the jig and apply a 500Vdc voltage for one minute. Measure the insulation resistance.

Acceptance Standard :  $1,000\text{M}\Omega$  minimum.



**7. TAPING SPECIFICATIONS**

**(1) Paper Taping**



Unit:(mm)

TYPE	Number of Resistors	A	B	W	E	F	T1	P1 , P0	P2	ØD
YC16	8P4R	3.6±0.1	2.0±0.1	8.0±0.2	1.75±0.1	3.5±0.05	0.75±0.1	4.0±0.1	2.0±0.05	1.5±0.1

Figure4

**(2) Taping Reel (5,000PCS)**

