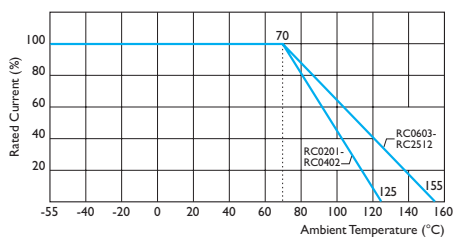


Thick Film Chip Resistors

RC Series



DERATING CURVE



FEATURES

Extremely Thin and Light

Highly Reliable Multilayer Electrode Construction

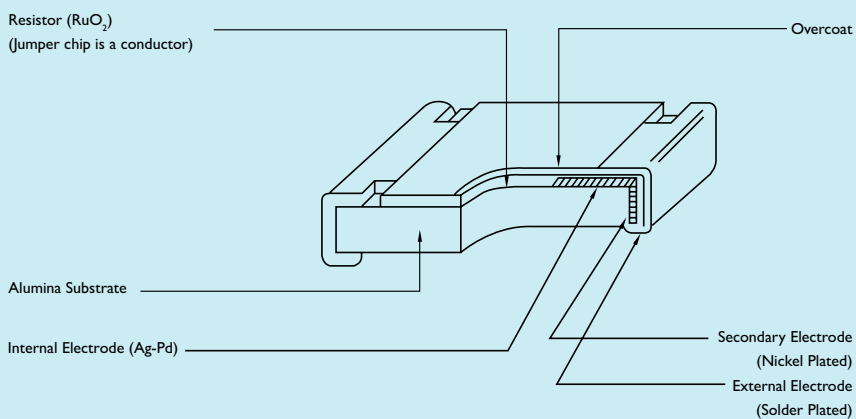
Compatible with all Soldering Process

Highly Stable in Auto-Placement Surface Mounting Applications

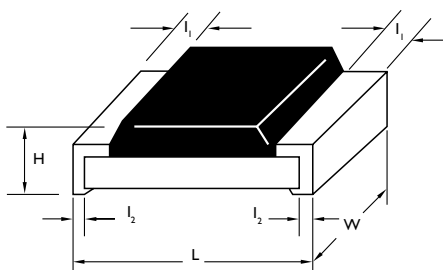
Barrier Layer End Termination

Zero Ohm Jumper is Available

Available in 8mm Tape & Reel per EIA RS481



DIMENSIONS



Unit : mm

STYLE	L	W	H	I ₁	I ₂
RC0201	0.60±0.10	0.30±0.05	0.25±0.05	0.15±0.10	0.15±0.10
RC0402	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
RC0603	1.60±0.10	0.80±0.10	0.45±0.10	0.25±0.15	0.25±0.15
RC0805	2.00±0.10	1.25±0.10	0.50±0.10	0.35±0.20	0.35±0.20
RC1206	3.10±0.10	1.60±0.10	0.55±0.10	0.45±0.20	0.40±0.20
RC1210	3.10±0.10	2.60±0.15	0.50±0.10	0.45±0.15	0.50±0.20
RC2010	5.00±0.10	2.50±0.15	0.55±0.10	0.45±0.15	0.50±0.20
RC2512	6.35±0.10	3.10±0.15	0.55±0.10	0.60±0.20	0.50±0.20

Note :

ELECTRICAL CHARACTERISTICS

STYLE	RC0201	RC0402	RC0603	RC0805	RC1206	RC1210	RC2010	RC2512
Power Rating @ 70°C	1/20W	1/16W	1/10W	1/8W	1/4W	1/3W	3/4W	1W
Operating Temp. Range	-55°C ~ +155°C	-25°C ~ +125°C	-55°C ~ +155°C				-25°C ~ +125°C	-55°C ~ +155°C
Maximum Working Voltage	15V	50V	50V	150V	200V	200V	200V	200V
Maximum Overload Voltage	50V	100V	100V	300V	400V	400V	400V	400V
Dielectric Withstand Voltage	50V	100V	100V	300V	500V	500V	500V	500V
Resistance Range								
E24Tol. $\pm 2\%$, $\pm 5\%$	10 Ω ~ 1M Ω	1 Ω ~ 10M Ω	1 Ω ~ 22M Ω					
E96Tol. $\pm 0.5\%$, $\pm 1\%$		2.2 Ω ~ 4.7M Ω	1 Ω ~ 4.7M Ω					
Zero Ohm Jumper	< 0.05 Ω							
TCR $\pm 200\text{ppm}/^\circ\text{C}$	10 $\Omega \leq R \leq 1\text{M}$	10 $\Omega \leq R < 10\text{M}\Omega$	10 $\Omega \leq R < 10\text{M}\Omega$; 10M $\Omega < R \leq 22\text{M}\Omega$					
$\pm 250\text{ppm}/^\circ\text{C}$	10 $\Omega \leq R \leq 1\text{M}$							
$\pm 300\text{ppm}/^\circ\text{C}$		1 $\Omega \leq R < 10\Omega$						
0/+500ppm/ $^\circ\text{C}$	10 $\Omega \leq R < 100\Omega$							
Jumper Criteria								
Rated Current (A)	0.5	1.0	1.0	2.0	2.0	2.0	2.0	2.0
Maximum Current (A)	1.0	2.0	2.0	5.0	10.0	10.0	10.0	10.0

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		1% TOL.	5% TOL.
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	by Type	
Thermal Shock	MIL-STD-202F, Method 107G	25 Cycles, -65°C to +125°C (Step by Step 2 min.)	$\pm (0.5\%+0.05\Omega)$	$\pm (1\%+0.05\Omega)$
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at - 65°C Followed by 45 Minutes RCWV	$\pm (0.5\%+0.05\Omega)$	$\pm (1\%+0.05\Omega)$
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	$\pm (1\%+0.05\Omega)$	$\pm (2\%+0.05\Omega)$
Insulation Resistance	JIS-C-5202, 5.6	RCOV for 1 Minute	>10G Ω	
Dielectric Withstand Voltage	JIS-C-5202, 5.7	R.M.S. for 1 Minute	by Type	
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	$\pm (0.5\%+0.05\Omega)$	$\pm (1\%+0.05\Omega)$
Moisture Resistance	MIL-STD-202F, Method 106F	42 Cycles.Total 1000 Hours	$\pm (0.5\%+0.05\Omega)$	$\pm (2\%+0.05\Omega)$
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	$\pm (1\%+0.05\Omega)$	$\pm (3\%+0.05\Omega)$
Solderability	JIS-C-5202, 6.11	230°C for 5 Seconds	>95% Coverage	
Bending Strength	JIS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 5mm (power chip 2mm) in Either Direction for 5 Seconds	$\pm (1\%+0.05\Omega)$	$\pm (1\%+0.05\Omega)$

Thin Film Chip Resistors

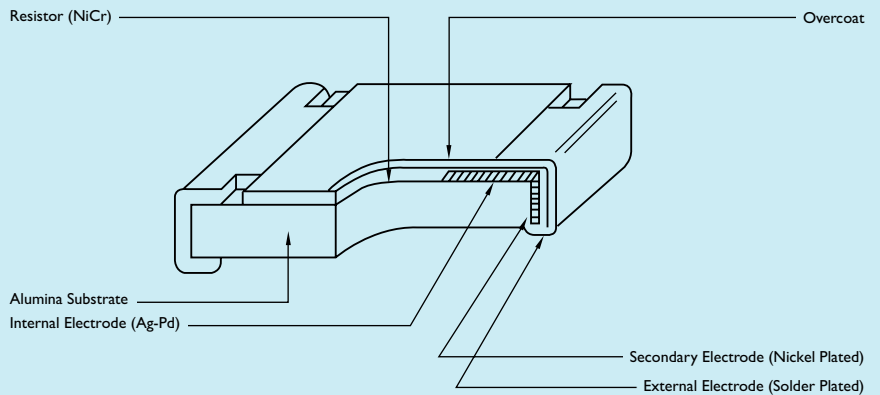
RT Series



FEATURES

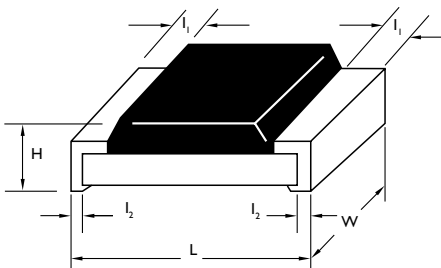
High Stability

Low TCR / Low Noise

High Accuracy ($\pm 0.1\%$, $\pm 0.5\%$)

DIMENSIONS

Unit : mm



STYLE	L	W	H	I ₁	I ₂
RT0201	0.60±0.10	0.30±0.05	0.25±0.05	0.15±0.10	0.15±0.10
RT0402	1.00±0.10	0.50±0.05	0.30±0.05	0.20±0.10	0.25±0.10
RT0603	1.60±0.10	0.80±0.10	0.45±0.10	0.25±0.15	0.25±0.15
RT0805	2.00±0.10	1.25±0.10	0.50±0.10	0.35±0.20	0.35±0.20
RT1206	3.10±0.10	1.60±0.10	0.55±0.10	0.45±0.20	0.40±0.20
RT1210	3.10±0.10	2.60±0.15	0.55±0.10	0.50±0.20	0.50±0.20
RT2010	5.00±0.10	2.50±0.15	0.55±0.10	0.60±0.20	0.50±0.20
RT2512	6.35±0.10	3.20±0.15	0.55±0.10	0.60±0.20	0.50±0.20

ELECTRICAL CHARACTERISTICS

STYLE	RT0201			RT0402			RT0603			RT0805		
Resistance Range in E24/E96 (E192; Special Value on Request)	10 Ω ~ 30K Ω (<10 Ω ; 30 ~ 56K Ω on Request)			10 Ω ~ 121K Ω (<10 Ω ; 121 ~ 220K Ω on Request)			3 Ω ~ 681K Ω (<3 Ω ; 681 ~ 750K Ω on Request)			3 Ω ~ 1.5M Ω (<3 Ω ; 1.5 ~ 2M Ω on Request)		
Operating Mode	Precision	Standard	Power	Precision	Standard	Power	Precision	Standard	Power *	Precision	Standard	Power *
Power Rating @ 70°C	1/64W	1/20W	1/16W	1/64W	1/16W	1/10W	1/32W	1/10W	1/8W	1/20W	1/8W	1/5W
Operation Temperature Range	-10°C to +85°C for Precision Type; -55°C to +125°C for Standard; -55°C to +155°C for Power Type											
Maximum Working Voltage	5V	15V	15V	12.5V	50V	50V	25V	75V	75V	35V	150V	150V
Maximum Overload Voltage	10V	50V	50V	25V	100V	100V	50V	150V	150V	70V	300V	300V
Dielectric Withstand Voltage	50V	50V	50V	75V	75V	75V	100V	100V	100V	200V	200V	200V
Resistance Tolerance	$\pm 0.1\%$; $\pm 0.25\%$; $\pm 0.5\%$; $\pm 1.0\%$ ($\pm 0.01\%$; $\pm 0.05\%$ on Request)											
Temperature Coefficient	$\pm 25\text{ppm}/^\circ\text{C}$; $\pm 50\text{ppm}/^\circ\text{C}$ ($\pm 10\text{ppm}/^\circ\text{C}$; $\pm 15\text{ppm}/^\circ\text{C}$ on Request)											

STYLE	RT1206			RT1210			RT2010		RT2512	
Resistance Range in E24/E96 (E192; Special Value on Request)	3 Ω ~ 1.5M Ω (<3 Ω ; 1.5 ~ 2M on Request)			1 Ω ~ 1M Ω (1M ~ 2M Ω on Request)			10 Ω ~ 1M Ω (<10 Ω ; 1M ~ 2M Ω on Request)		10 Ω ~ 1M Ω (<10 Ω ; 1M ~ 2M Ω on Request)	
Operating Mode	Precision	Standard	Power **	Precision	Standard	Power	Standard	Power	Standard	Power
Power Rating @ 70°C	1/10W	1/8W	1/4W	1/8W	1/4W	2/5W	1/2W	3/4W	3/4W	1W
Operation Temperature Range	-10°C to +85°C for Precision Type; -55°C to +125°C for Standard; -55°C to +155°C for Power Type									
Maximum Working Voltage	50V	200V	200V	50V	200V	200V	200V	200V	200V	200V
Maximum Overload Voltage	100V	400V	400V	100V	400V	400V	400V	400V	400V	400V
Dielectric Withstand Voltage	300V	300V	300V	400V	400V	400V	400V	400V	400V	400V
Resistance Tolerance	$\pm 0.1\%$; $\pm 0.25\%$; $\pm 0.5\%$; $\pm 1.0\%$ ($\pm 0.01\%$; $\pm 0.05\%$ on Request)									
Temperature Coefficient	$\pm 25\text{ppm}/^\circ\text{C}$; $\pm 50\text{ppm}/^\circ\text{C}$ ($\pm 10\text{ppm}/^\circ\text{C}$; $\pm 15\text{ppm}/^\circ\text{C}$ on Request)									

* Power Mode on Request for RT0603 and RT0805

** Power Mode on Request for RT1206

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	by Type
Thermal Shock	MIL-STD-202F, Method 107G	25 Cycles, -65°C to +125°C (Step by Step 2 min.)	$\pm (0.5\%+0.05\Omega)^*$
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at LCT Followed by 45 Minutes RCWV	$\pm (0.5\%+0.05\Omega)^*$
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	$\pm (0.5\%+0.05\Omega)^*$
Insulation Resistance	JIS-C-5202, 5.6	RCOV for 1 Minute	>10G Ω
Dielectric Withstand Voltage	JIS-C-5202, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	$\pm (0.5\%+0.05\Omega)^*$
Moisture Resistance	MIL-STD-202F, Method 106F	42 Cycles.Total 1000 Hours	$\pm (0.5\%+0.05\Omega)^*$
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	$\pm (0.5\%+0.05\Omega)^*$
Solderability	JIS-C-5202, 6.11	230°C for 5 Seconds	>95% Coverage
Bending Strength	JIS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 2mm (by Style) in Either Direction for 5 Seconds	$\pm (0.25\%+0.05\Omega)^*$

* High Stability, $\pm 0.1\%$ or 0.25% , on Request

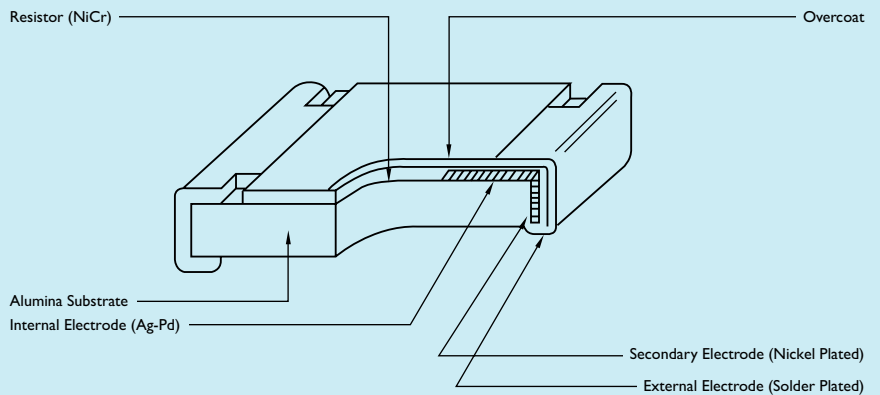
Thin Film Chip Resistors

RJ Series

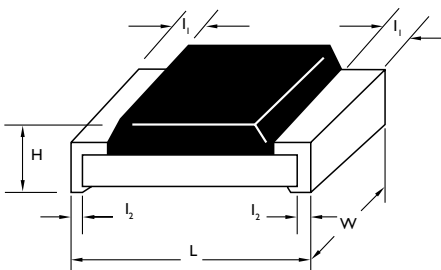


FEATURES

High Stability

TCR : $\pm 50\text{ppm}/^{\circ}\text{C}$ Tolerance : $\pm 1\%$ 

DIMENSIONS



Unit : mm

STYLE	L	W	H	I_1	I_2
RJ0201	0.60 ± 0.10	0.30 ± 0.05	0.25 ± 0.05	0.15 ± 0.10	0.15 ± 0.10
RJ0402	1.00 ± 0.10	0.50 ± 0.05	0.30 ± 0.05	0.20 ± 0.10	0.25 ± 0.10
RJ0603	1.60 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.25 ± 0.15	0.25 ± 0.15
RJ0805	2.00 ± 0.10	1.25 ± 0.10	0.50 ± 0.10	0.35 ± 0.20	0.35 ± 0.20
RJ1206	3.10 ± 0.10	1.60 ± 0.10	0.55 ± 0.10	0.45 ± 0.20	0.40 ± 0.20
RJ1210	3.10 ± 0.10	2.60 ± 0.15	0.55 ± 0.10	0.50 ± 0.20	0.50 ± 0.20
RJ2010	5.00 ± 0.10	2.50 ± 0.15	0.55 ± 0.10	0.60 ± 0.20	0.50 ± 0.20
RJ2512	6.35 ± 0.10	3.20 ± 0.15	0.55 ± 0.10	0.60 ± 0.20	0.50 ± 0.20

Note :

ELECTRICAL CHARACTERISTICS

STYLE	RJ0201	RJ0402	RJ0603	RJ0805	RJ1206	RJ1210	RJ2010	RJ2512
Power Rating @ 70°C	1/20W	1/16W	1/16W	1/10W	1/8W	1/4W	1/2W	3/4W
Operating Temp. Range	-55°C ~ +125°C							
Maximum Working Voltage	15V	25V	50V	100V	150V	150V	150V	150V
Maximum Overload Voltage	50V	100V	100V	200V	250V	250V	300V	300V
Dielectric Withstand Voltage	50V	100V	100V	250V	250V	250V	400V	400V
Resistance Range								
E24 / E96								
(E192 on Request)	10Ω ~ 30KΩ	10Ω ~ 121KΩ	3Ω ~ 681KΩ	3Ω ~ 1.5MΩ	3Ω ~ 1.5MΩ	1Ω ~ 1M	10Ω ~ 1M	10Ω ~ 1M
Resistance Tolerance	±1%							
Temperature Coefficient	±50ppm/°C							

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	±50ppm/°C
Thermal Shock	MIL-STD-202F, Method 107G	25 Cycles, -65°C to +125°C (Step by Step 2 min.)	±(0.5%+0.05Ω)
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	±(0.5%+0.05Ω)
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	±(1.0%+0.05Ω)
Insulation Resistance	ⓂS-C-5202, 5.6	RCOV for 1 Minute	10GΩ
Dielectric Withstand Voltage	ⓂS-C-5202, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	±(0.5%+0.05Ω)
Moisture Resistance	MIL-STD-202F, Method 106F	42 Cycles. Total 1000 Hours	±(0.5%+0.05Ω)
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	±(1%+0.05Ω)
Solderability	ⓂS-C-5202, 6.11	230°C for 5 Seconds	95% min. Coverage
Bending Strength	ⓂS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 2mm (by Style) in Either Direction for 5 Seconds	±(1%+0.05Ω)

Low Value Chip Resistors

RL Series



FEATURES

Current Sensing of Desktop & NoteBook PC

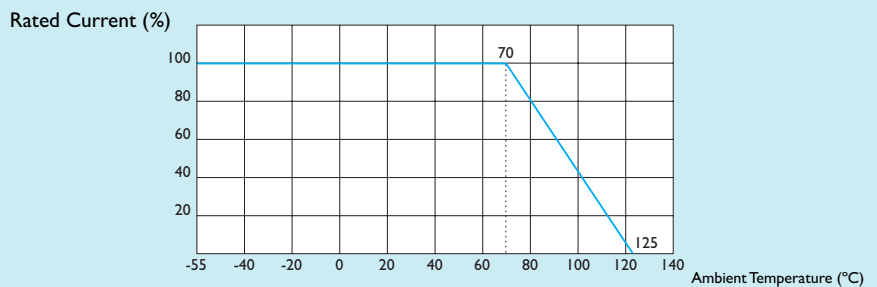
Resistance Values Down to 0.010 Ohms

Highly Reliable Multilayer Electrode Construction

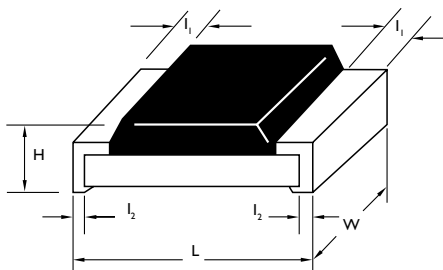
Low Inductance

High Speed Logic Circuits

DERATING CURVE



DIMENSIONS



Unit : mm

STYLE	L	W	H	I ₁	I ₂
RL0402	1.00±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
RL0603	1.60±0.10	0.80±0.10	0.45±0.10	0.25±0.15	0.25±0.15
RL0805	2.00±0.10	1.25±0.10	0.50±0.10	0.35±0.20	0.35±0.20
RL1206	3.10±0.10	1.60±0.10	0.55±0.10	0.45±0.25	0.40±0.25
RL1210	3.10±0.10	2.60±0.15	0.55±0.10	0.50±0.20	0.50±0.20
RL2010	5.00±0.10	2.50±0.15	0.55±0.10	0.60±0.20	0.50±0.20
RL2512	6.35±0.10	3.20±0.15	0.55±0.10	0.60±0.20	0.50±0.20

Note :

ELECTRICAL CHARACTERISTICS

STYLE	RL0402	RL0603	RL0805	RL1206	RL1210	RL2010	RL2512
Power Rating at 70°C	1/16W	1/10W	1/8W	1/4W	1/1W	3/4W	1W
Operating Temp. Range	-55°C to +125°C						
Derated to 0 Load at	+125°C						
Resistance Range	0.1Ω ~ 0.99Ω	0.01Ω ~ 0.99Ω					
Temperature Coefficient							
10mΩ ≤ Rn < 100mΩ			±1500ppm/°C				
100mΩ ≤ Rn < 1Ω	±800ppm/°C		±600ppm/°C				
Resistance Tolerance	±1%	±5%					

* 50mR ~ 100mR on Request for RL0402

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		1% TOL.	5% TOL.
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	by Type	
Thermal Shock	MIL-STD-202F, Method 107G	25 Cycles, -65°C to +125°C (Step by Step 2 min.)	±1%	±1%
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -55°C Followed by 45 Minutes RCWV	±1%	±1%
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	±1%	±2%
Insulation Resistance	ⓂIS-C-5202, 5.6	RCOV for 1 Minute	>10GΩ	
Dielectric Withstand Voltage	ⓂIS-C-5202, 5.7	R.M.S. for 1 Minute	by Type	
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	±1%	±1%
Moisture Resistance	MIL-STD-202F, Method 106F	42 Cycles. Total 1000 Hours	±2%	±2%
Life	MIL-STD-202F, Method 108G	1000 Hours at 70°C RCWV Intermittent	±2%	±3%
Solderability	ⓂIS-C-5202, 6.11	230°C for 5 Seconds	>95% Coverage	



Note :

MARKING DIAGRAMS

Chip Resistors



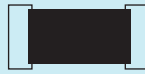
5% Marking
Value=10K Ω
RC
0603/0805/1206
1210/2010/2512



1% Marking
Value=10K Ω
RC/RT/RJ
0805/1206
1210/2010/2512



1% Marking
Value=12.4K Ω
RC/RT/RJ
0603
EIA-96 Marking



No Marking
RC/RT/RJ/RL
0201/0402



1% Marking
Value=1K Ω
RC0603
EIA-24 Marking

Marking Explanation

5% tolerance: 3 digits, first two digits are significant figures, third digit is number of zeros. Letter R is decimal point.

1% tolerance: 4 digits, first three digits are significant figures, fourth digit is number of zeros. Letter R is decimal point.

Letter "0" is 0 ohm.

RC0603 1% : EIA-96 Marking, as below list, when value in E-24 series marking with 5%, 3 digits, one short bar under marking letter.

Low Value Chip Resistors



Value=220m Ω
RL0603



Value=20m Ω
RL0805/RL1206/RL1210/RL2010/RL2512

Marking Explanation

Standard MIL resistance marking.

"R" signifies decimal place.

EIA-96 MARKING

code R Value	code R Value	code R Value	code R Value	code R Value	code R Value	code R Value	code R Value
01 100	13 133	25 178	37 237	49 316	61 422	73 562	85 750
02 102	14 137	26 182	38 243	50 324	62 432	74 576	86 768
03 105	15 140	27 187	39 249	51 332	63 442	75 590	87 787
04 107	16 143	28 191	40 255	52 340	64 453	76 604	88 806
05 110	17 147	29 196	41 261	53 348	65 464	77 619	89 825
06 113	18 150	30 200	42 267	54 357	66 475	78 634	90 845
07 115	19 154	31 205	43 274	55 365	67 487	79 649	91 866
08 118	20 158	32 210	44 280	56 374	68 499	80 665	92 887
09 121	21 162	33 215	45 287	57 383	69 511	81 681	93 909
10 124	22 165	34 221	46 294	58 392	70 523	82 698	94 931
11 127	23 169	35 226	47 301	59 402	71 536	83 715	95 953
12 130	24 174	36 232	48 309	60 412	72 549	84 732	96 976

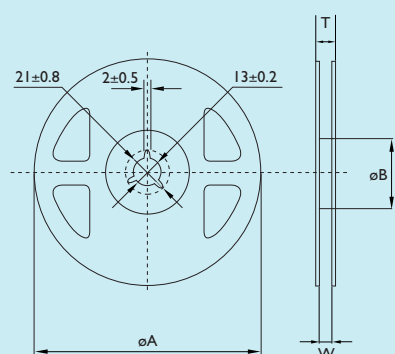
This table shows the first two digits for the three-digit EIA-96 part marking scheme.

The third character is a letter multiplier: Y=10⁻² X=10⁻¹ A=10⁰ B=10¹ C=10² D=10³ E=10⁴ F=10⁵

Note :

TAPING REEL

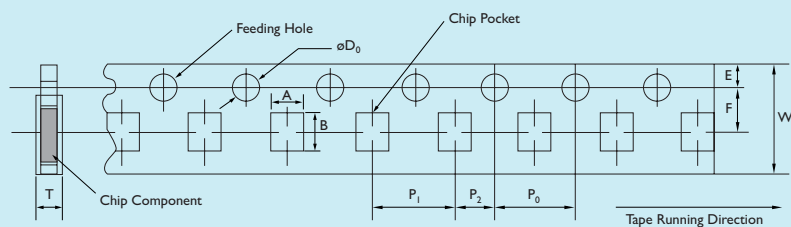
Unit : mm



STYLE	PACKAGING	TAPE WIDE	øA	øB	W	T
RC/RT/RJ/RL 0201/0402/0603/0805/1206/1210	Paper	8mm	180 ⁺⁰ ₋₃	60 ⁺¹ ₋₀	9.0±0.3	11.4±1
RC/RT/RJ/RL 2010/2512	Embossed	12mm	180 ⁺⁰ ₋₃	60 ⁺¹ ₋₀	13.0±0.3	15.4±1

PAPER TAPING

Unit : mm



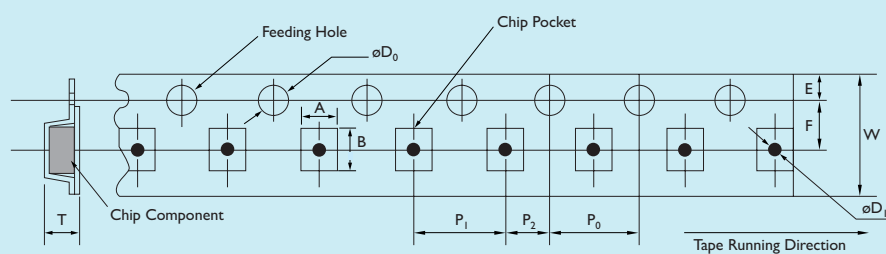
STYLE	A	B	W	E	F	p ₀	p ₁	p ₂	øD ₀	T
RC/RT/RJ/RL0201	0.45±0.1	0.75±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	2.0±0.05	1.5 ^{+0.1} ₋₀	0.35±0.1
RC/RT/RJ/RL0402	0.65±0.1	1.15±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	2.0±0.05	1.5 ^{+0.1} ₋₀	0.53±0.1
RC/RT/RJ/RL0603	1.10±0.1	1.90±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.05	2.0±0.05	1.5 ^{+0.1} ₋₀	0.70±0.1
RC/RT/RJ/RL0805	1.65±0.1	2.40±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.05	2.0±0.05	1.5 ^{+0.1} ₋₀	0.85±0.1
RC/RT/RJ/RL1206	1.90±0.1	3.50±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.05	2.0±0.05	1.5 ^{+0.1} ₋₀	0.85±0.1
RC/RT/RJ/RL1210	2.80±0.1	3.50±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.05	2.0±0.05	1.5 ^{+0.1} ₋₀	0.85±0.1



Note :

EMBOSED TAPING

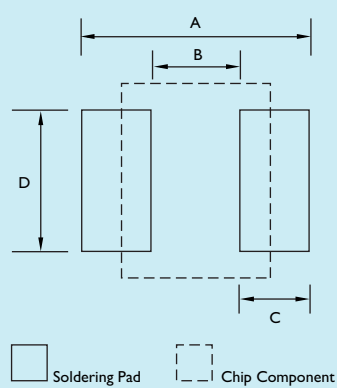
Unit : mm



STYLE	A	B	W	E	F	p_0	p_1	p_2	ϕD_0	ϕD_1	T
RC/RT/RJ/RL2010	2.8 ± 0.2	5.4 ± 0.2	12 ± 0.3	1.75 ± 0.1	5.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 ± 0.1	1.5 ± 0.25	1.0 ± 0.1
RC/RT/RJ/RL2512	3.5 ± 0.2	6.7 ± 0.2	12 ± 0.3	1.75 ± 0.1	5.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 ± 0.1	1.5 ± 0.25	1.0 ± 0.1

RECOMMENDED LAND PATTERN DESIGN

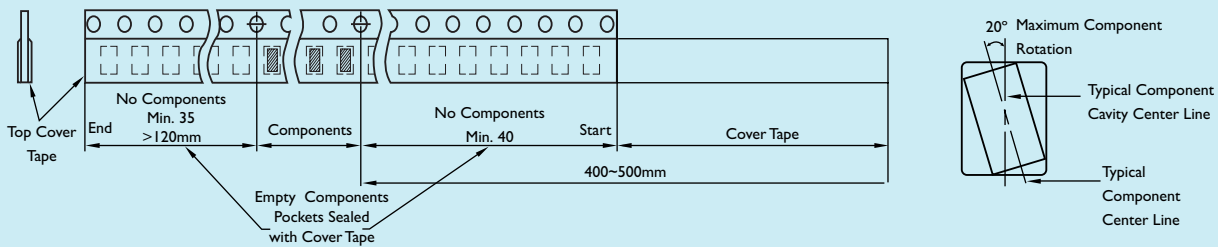
Unit : mm



STYLE	A	B	C	D
RC/RT/RJ/RL0201	1.0	0.3	0.35	0.4
RC/RT/RJ/RL0402	1.5	0.5	0.5	0.6
RC/RT/RJ/RL0603	2.6	0.8	0.9	0.8
RC/RT/RJ/RL0805	3.0	1.2	0.9	1.2
RC/RT/RJ/RL1206	4.2	2.2	1.0	1.5
RC/RT/RJ/RL1210	4.2	2.2	1.0	2.4
RC/RT/RJ/RL2010	6.1	3.3	1.4	2.4
RC/RT/RJ/RL2512	8.0	4.4	1.8	3.0

Note :

TAPING REEL

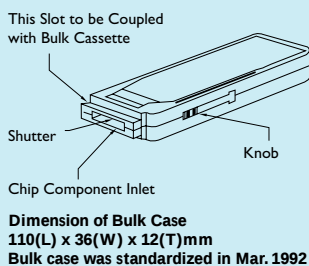


PACKING METHODS

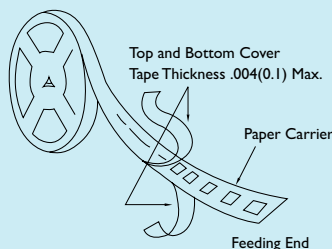
Unit : pcs

STYLE	PACKING	PAPER TAPING REEL (R)			EMBOSSSED TAPING REEL (K)	BULK CASSETTE (C)
		7"(178mm)	10"(254mm)	13"(330mm)	7"(178mm)	
RC/RT/RJ/RL0201		10,000	20,000	40,000	—	150,000
RC/RT/RJ/RL0402		10,000	20,000	50,000	—	100,000
RC/RT/RJ/RL0603		5,000	10,000	20,000	—	25,000
RC/RT/RJ/RL0805		5,000	10,000	20,000	—	10,000
RC/RT/RJ/RL1206		5,000	10,000	20,000	—	—
RC/RT/RJ/RL1210		5,000	10,000	20,000	—	—
RC/RT/RJ/RL2010		—	—	—	4,000	—
RC/RT/RJ/RL2512		—	—	—	4,000	—

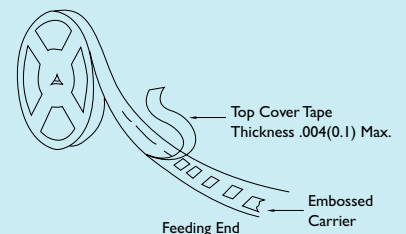
BULK CASSETTE



PAPER CARRIER



EMBOSSSED PLASTIC CARRIER



Thick Film Chip Resistors Array

YC Series [For 4Pin/2R]

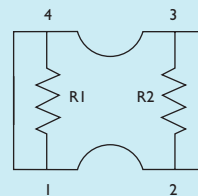


APPLICATIONS

Telecommunication Equipment Lap-Top and Note-Book Computer

SCHEMATICS

YC12

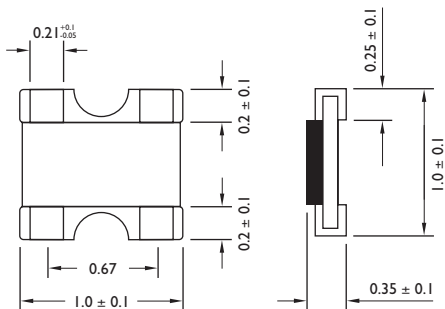


$R1=R2$

DIMENSIONS

Unit : mm

YC12



Note :

ELECTRICAL CHARACTERISTICS

STYLE	YC12
Power Rating at 70°C	1/16W
Operating Temp. Range	-55°C to +125°C (Derated to 0 Load at +125°C)
Maximum Working Voltage	50V
Maximum Overload Voltage	100V
Dielectric Withstand Voltage	100V
Number of Resistors	2
Resistance Range	10Ω ~ 1MΩ
Temperature Coefficient	±200ppm/°C
Resistance Tolerance	±5%

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	±200ppm/°C
Thermal Shock	MIL-STD-202F, Method 107G	25 Cycles, -65°C to +125°C (Step by Step 2min.)	±(1%+0.05Ω)
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	±(1%+0.05Ω)
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	±(2%+0.05Ω)
Insulation Resistance	JIS-C-5202, 5.6	RCOV for 1 Minute	>10GΩ
Dielectric Withstand Voltage	JIS-C-5202, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	±(1%+0.05Ω)
Moisture Resistance	MIL-STD-202F, Method 106F	42Cycles.Total 1000 Hours	±(2%+0.1Ω)
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	±(3%+0.1Ω)
Solderability	JIS-C-5202, 6.11	230°C for 5 Seconds	>95% Coverage
Bending Strength	JIS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 1mm in Either Direction for 5 Seconds	±(1%+0.05Ω)

Thick Film Chip Resistors Array

YC Series [For 8Pin/4R]

YC12



YC16



YC32



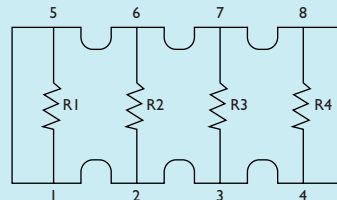
APPLICATIONS

Telecommunication Equipment Lap-Top and Note-Book Computer

SCHEMATICS

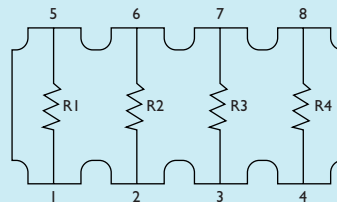
YC12

YC16



$$R1=R2=R3=R4$$

YC32

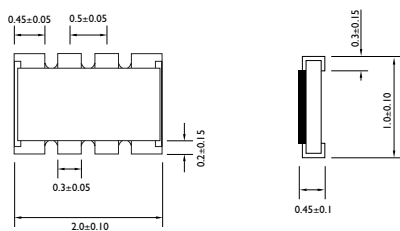


$$R1=R2=R3=R4$$

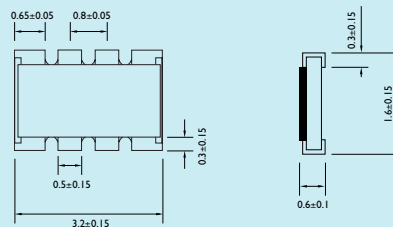
DIMENSIONS

Unit : mm

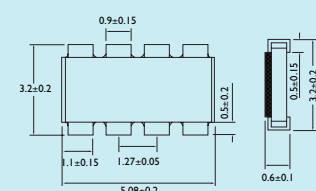
YC12



YC16



YC32



Note :

ELECTRICAL CHARACTERISTICS

STYLE	YC12	YC16	YC32
Power Rating at 70°C	1/16W	1/16W	1/8W
Operating Temp. Range	-55°C to +125°C		
Maximum Working Voltage	50V		200V
Maximum Overload Voltage	100V		400V
Dielectric Withstand Voltage	100V		500V
Number of Resistors	4		
Resistance Range	10Ω ~ 1MΩ		
Temperature Coefficient	± 200ppm/°C		
Resistance Tolerance	± 1%	± 5%	

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	by Type
Thermal Shock	MIL-STD-202F, Method 107G	25 Cycles, -65°C to +125°C (Step by Step 2min.)	± (1%+0.05Ω)
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	± (1%+0.05Ω)
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	± (2%+0.05Ω)
Insulation Resistance	JIS-C-5205, 5.6	RCOV for 1 Minute	>10GΩ
Dielectric Withstand Voltage	JIS-C-5205, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	± (1%+0.05Ω)
Moisture Resistance	MIL-STD-202F, Method 106F	42Cycles.Total 1000 Hours	± (2%+0.05Ω)
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	± (3%+0.10Ω)
Solderability	JIS-C-5205, 6.11	230°C for 5 Seconds	>95% Coverage
Bending Strength	JIS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 1mm in Either Direction for 5 Seconds	± (1%+0.05Ω)

Thick Film Chip Resistors Network

YC Series [For 9Pin/8R 10Pin/8R]

YC15



YC35

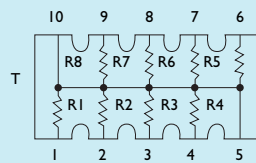


APPLICATIONS

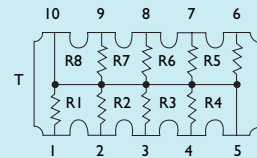
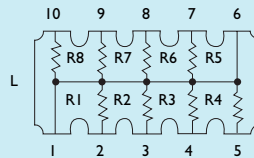
Telecommunication Equipment Lap-Top and Note-Book Computer

SCHEMATICS

YC15



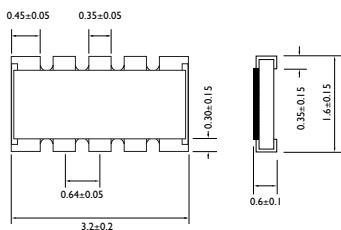
YC35



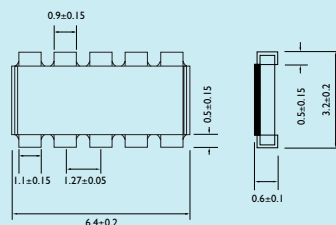
$$R1=R2=R3=R4=R5=R6=R7=R8$$

DIMENSIONS

YC15



YC35



Unit : mm

Note :

ELECTRICAL CHARACTERISTICS

STYLE	YC15	YC35
Power Rating at 70°C	1/32W	1/16W
Operating Temp. Range	-55°C to +125°C (Derated to 0 Load at +125°C)	
Maximum Working Voltage	25V	50V
Maximum Overload Voltage	50V	100V
Dielectric Withstand Voltage	50V	100V
Number of Resistors	8	
Resistance Range	33Ω ~ 100KΩ	10Ω ~ 330KΩ
Temperature Coefficient	±200ppm/°C	
Resistance Tolerance	±5%	

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	±200ppm/°C
Thermal Shock	MIL-STD-202F, Method 107	25 Cycles, -65°C to +125°C (Step by Step 2min)	±(1%+0.05Ω)
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	±(1%+0.05Ω)
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	±(2%+0.05Ω)
Insulation Resistance	∏S-C-5205, 5.6	RCOV for 1 Minute	>10GΩ
Dielectric Withstand Voltage	∏S-C-5205, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	±(1%+0.05Ω)
Moisture Resistance	MIL-STD-202F, Method 106F	42Cycles.Total 1000 Hours	±(2%+0.05Ω)
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	±(3%+0.1Ω)
Solderability	∏S-C-5205, 6.11	230°C for 5 Seconds	>95% coverage
Bending Strength	∏S-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 1mm in Either Direction for 5 Seconds	±(1%+0.05Ω)

Thick Film Chip Resistors Array

YC Series [For 16Pin/8R]

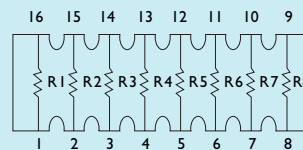


APPLICATIONS

Telecommunication Equipment Lap-Top and Note-Book Computer

SCHEMATICS

YC24

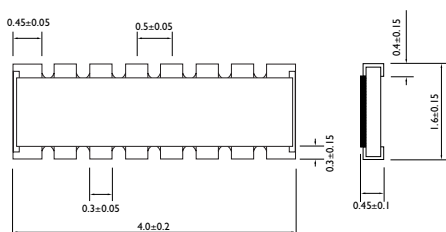


$R1=R2=R3=R4=R5=R6=R7=R8$

DIMENSIONS

Unit : mm

YC24



Note :

ELECTRICAL CHARACTERISTICS

STYLE	YC24
Power Rating at 70°C	1/16W
Operating Temp. Range	-55°C to + 125°C (Derated to 0 Load at + 125°C)
Maximum Working Voltage	50V
Maximum Overload Voltage	100V
Dielectric Withstand Voltage	100V
Number of Resistors	8
Resistance Range	10Ω ~ 1MΩ
Temperature Coefficient	± 200ppm/°C
Resistance Tolerance	± 5% ± 1%

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	± 200ppm/°C
Thermal Shock	MIL-STD-202F, Method 107	25 Cycles, -65°C to +125°C (Step by Step 2min.)	± (1%+0.05Ω)
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	± (1%+0.05Ω)
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	± (2%+0.05Ω)
Insulation Resistance	JIS-C-5205, 5.6	RCOV for 1 Minute	>10GΩ
Dielectric Withstand Voltage	JIS-C-5205, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	± (1%+0.05Ω)
Moisture Resistance	MIL-STD-202F, Method 106F	42Cycles.Total 1000 Hours	± (2%+0.05Ω)
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	± (3%+0.05Ω)
Solderability	JIS-C-5205, 6.11	230°C for 5 Seconds	>95% Coverage
Bending Strength	JIS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 1mm in Either Direction for 5 Seconds	± (1%+0.05Ω)

Thick Film Chip Resistors Network

TC Series [For 8Pin/4R]

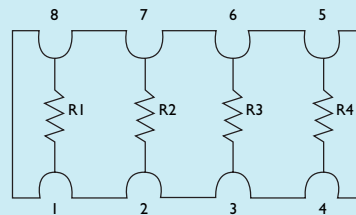


APPLICATIONS

Telecommunication Equipment Lap-Top and Note-Book Computer

SCHEMATICS

TC16

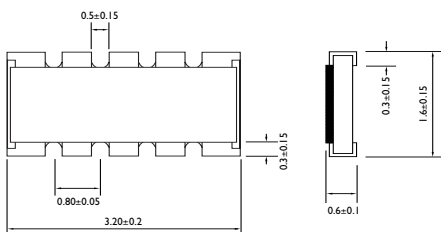


$R1=R2$

DIMENSIONS

Unit : mm

TC16



Note :

ELECTRICAL CHARACTERISTICS

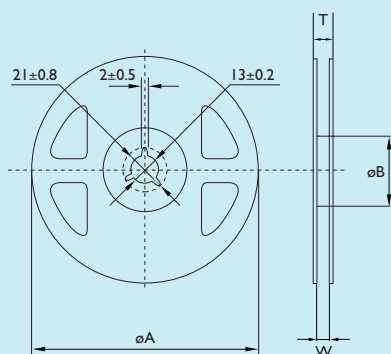
STYLE	TC16
Power Rating at 70°C	1/16W
Operating Temp. Range	-55°C to +125°C (Derated to 0 Load at +125°C)
Maximum Working Voltage	50V
Maximum Overload Voltage	100V
Dielectric Withstand Voltage	100V
Number of Resistors	4
Resistance Range	10Ω ~ 1MΩ
Temperature Coefficient	± 200ppm/°C
Resistance Tolerance	± 5%

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Temperature Coefficient	MIL-STD-202F, Method 304	LCT to UCT	± 200ppm/°C
Thermal Shock	MIL-STD-202F, Method 107	25 Cycles, -65°C to +125°C (Step by Step 2min.)	± (1%+0.05Ω)
Low Temperature Operation	MIL-R-55342D, Para.4.7.4	One Hour at -65°C Followed by 45 Minutes RCWV	± (1%+0.05Ω)
Short Time Overload	MIL-R-55342D, Para.4.7.5	2.5 Times RCWV for 5 Seconds	± (2%+0.05Ω)
Insulation Resistance	JIS-C-5205, 5.6	RCOV for 1 Minute	>10GΩ
Dielectric Withstand Voltage	JIS-C-5205, 5.7	R.M.S. for 1 Minute	by Type
Resistance to Soldering Heat	MIL-STD-202F, Method 210C	Soldered to Test Board at 260°C for 10 Seconds	± (1%+0.05Ω)
Moisture Resistance	MIL-STD-202F, Method 106F	42Cycles.Total 1000 Hours	± (2%+0.05Ω)
Life	MIL-STD-202F, Method 108A	1000 Hours at 70°C RCWV Intermittent	± (3%+0.1Ω)
Solderability	JIS-C-5205, 6.1	230°C for 5 Seconds	>95% Coverage
Bending Strength	JIS-C-5202, 6.1.4	Unit Mounted in Center of 90mm Board Length, Deflected 1mm in Either Direction for 5 Seconds	± (1%+0.05Ω)

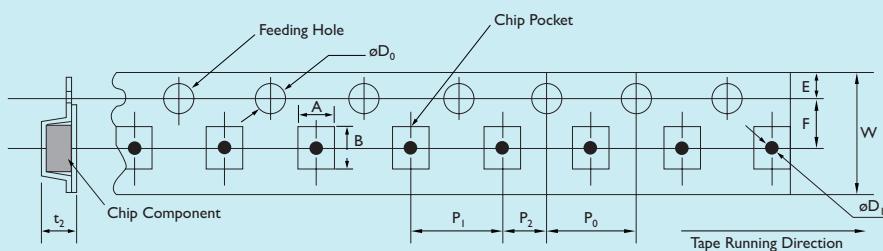
Note :

Unit : mm



STYLE	PACKAGING	TAPE WIDE	øA	øB	W	T
YC12/YC15/YC16/TC16	Paper	8mm	180 ⁺⁰ ₋₃	60 ⁺¹ ₋₀	9.0±0.3	11.4±1
YC24	Paper	12mm	180 ⁺⁰ ₋₃	60 ⁺¹ ₋₀	13.0±0.3	15.4±1
YC32/YC35	Embossed	12mm	180 ⁺⁰ ₋₃	60 ⁺¹ ₋₀	13.0±0.3	15.4±1

Unit : mm

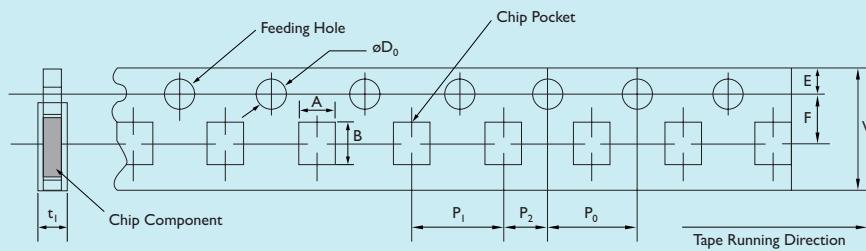


STYLE	NO. OF RES.	A	B	W	E	F	P ₀	P ₁	P ₂	ØD ₀	ØD ₁	t ₂
YC32	4	3.5±0.2	5.6±0.2	12±0.3	1.75±0.1	5.5±0.05	4±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.25	1.0±0.1
YC35	8	3.5±0.2	6.7±0.2	12±0.3	1.75±0.1	5.5±0.05	4±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.25	1.0±0.1

Note :

PAPERTAPING

Unit : mm



STYLE	NO. OF RES.	A	B	W	E	F	P_0	P_1	P_2	ϕD_0	t_1
YC12	2	1.2 ± 0.1	1.2 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	4.0 ± 0.1	2.0 ± 0.1	2.0 ± 0.05	$1.5^{+0.1}_{-0}$	0.7 ± 0.1
YC12	4	1.2 ± 0.1	2.2 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	4.0 ± 0.1	2.0 ± 0.1	2.0 ± 0.05	$1.5^{+0.1}_{-0}$	0.7 ± 0.1
YC15	8	2.0 ± 0.1	3.6 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	$1.5^{+0.1}_{-0}$	0.85 ± 0.1
YC16/TC16	4	2.0 ± 0.1	3.6 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	$1.5^{+0.1}_{-0}$	0.85 ± 0.1
YC24	8	1.8 ± 0.2	4.4 ± 0.2	12 ± 0.3	1.75 ± 0.1	5.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	$1.5^{+0.1}_{-0}$	0.7 ± 0.1

PACKING METHODS

Unit : pcs

STYLE	PACKING	PAPER TAPING REEL (R) 7" (178mm)	EMBOSSSED TAPING REEL (K) 7" (178mm)
YC12		10,000	—
YC16/TC16		5,000	—
YC15		5,000	—
YC24		5,000	—
YC32/YC35		—	4,000

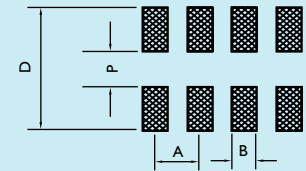


Note :

RECOMMENDED LAND PATTERN DESIGN

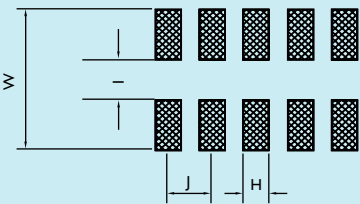
Unit : mm

For Popular Pattern



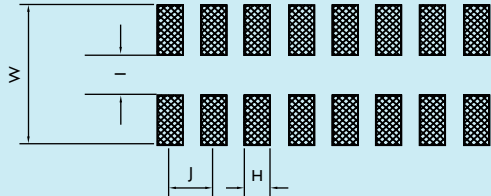
STYLE	A	B	D	P
YC12	0.5±0.05	0.3±0.05	2.2±0.2	0.5±0.1
YC16/TC16	0.80±0.05	0.45±0.05	2.8±0.2	0.8±0.1
YC32	1.27±0.05	0.6±0.05	4.5±0.2	2.0±0.1

For Popular Pattern



STYLE	J	H	W	I
YC15	0.64±0.05	0.3±0.05	2.8±0.2	0.8±0.1
YC35	1.27±0.05	0.6±0.05	4.5±0.2	2.0±0.1

For Popular Pattern



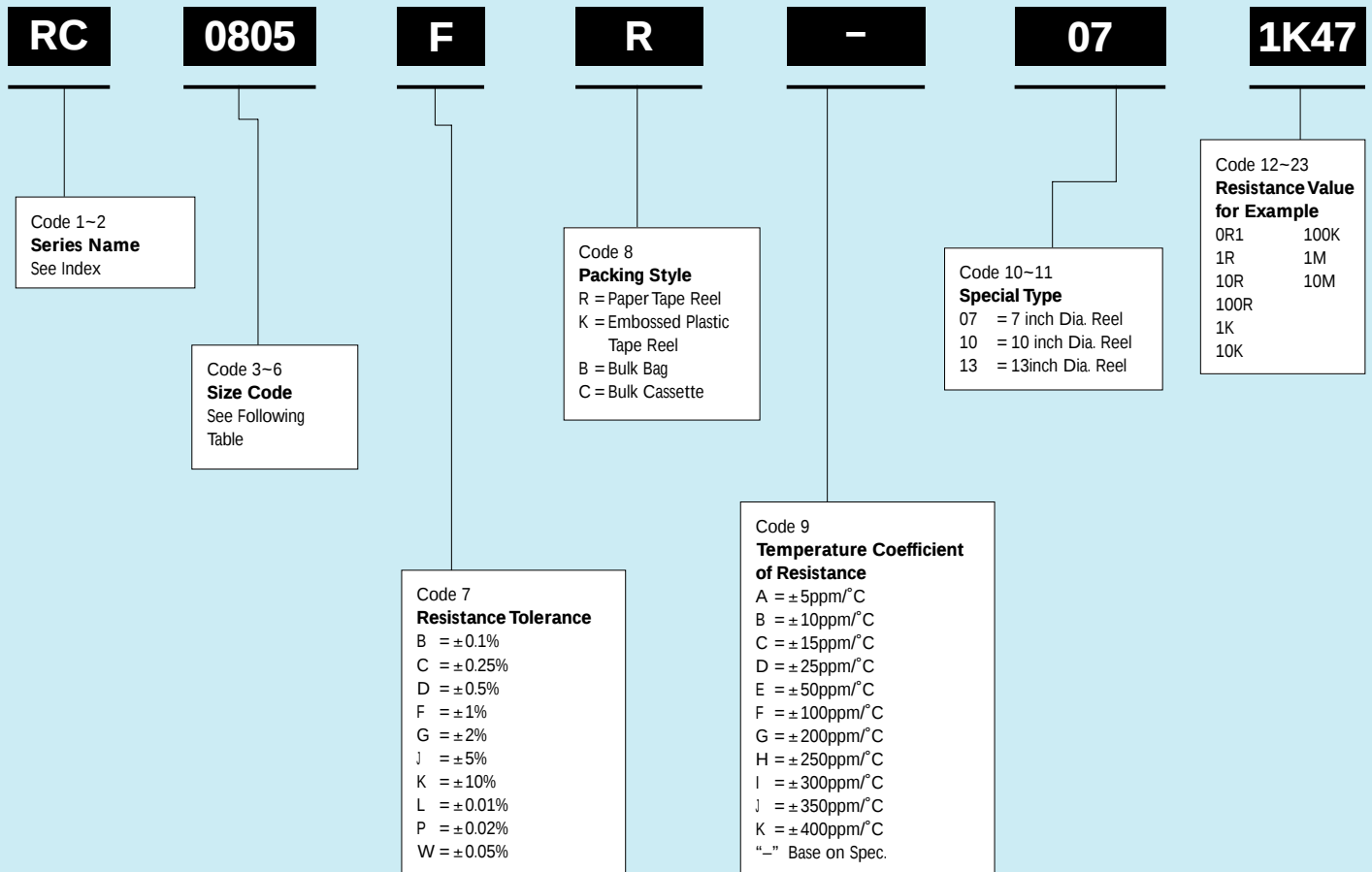
STYLE	J	H	W	I
YC24	0.5±0.05	0.3±0.05	2.8±0.2	0.9±0.1

Note :

EXPLANATIONS OF ORDERING CODE

For Chip Resistors (RC, RT, RJ, RL, RS, SK Series) & RW, RP Series

Explanations of Ordering Code



CODE 3~6

SIZE CODE (UNIT: INCHES)

0201=0.024 x 0.012		5020=0.472 x 0.196
0402=0.040 x 0.020	1210=0.122 x 0.102	5020=0.472 x 0.196
0603=0.063 x 0.033	2010=0.197 x 0.098	5021=0.472 x 0.196
0805=0.083 x 0.051	2512=0.250 x 0.126	5022=0.472 x 0.196
1206=0.122 x 0.063		

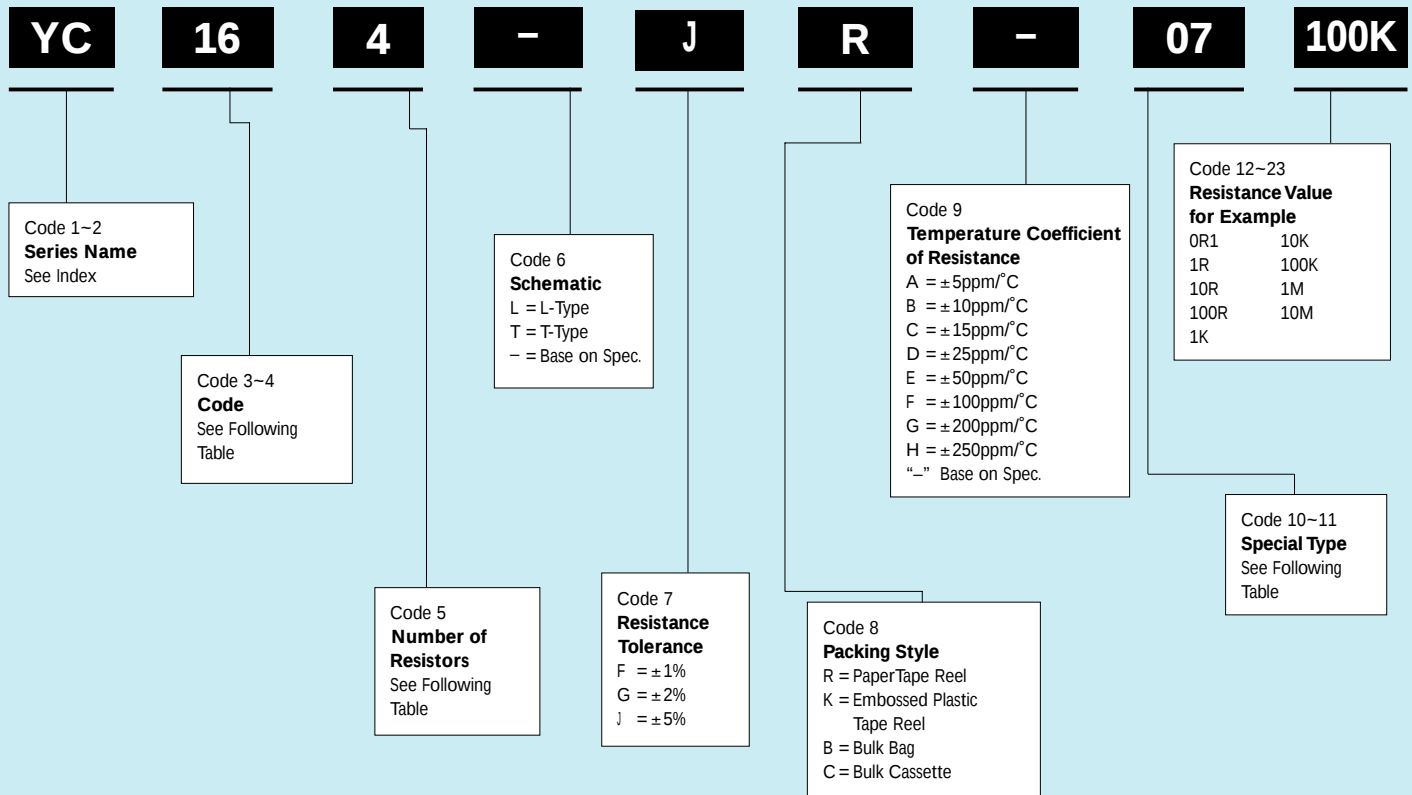


Note :

EXPLANATIONS OF ORDERING CODE

For Thick Film Chip Resistor Networks (YC, TC Series)

Explanations of Ordering Code



CODE 3~4

POWER RATING

12 1/16W

15 1/32W

16 1/16W

17 1/32W

24 1/16W

32 1/8W

35 1/16W

CODE 5

NUMBER OF RESISTORS

2=2 Resistors

4=4 Resistors

8=8 Resistors

9=9 Resistors

A=10 Resistors

C=12 Resistors

CODE 10~11

SPECIAL TYPE

07=7 Inch Dia. Reel

10=10 Inch Dia. Reel

13=13 Inch Dia. Reel