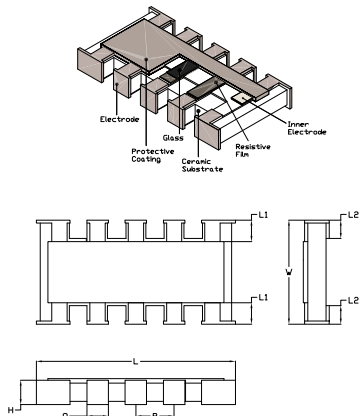


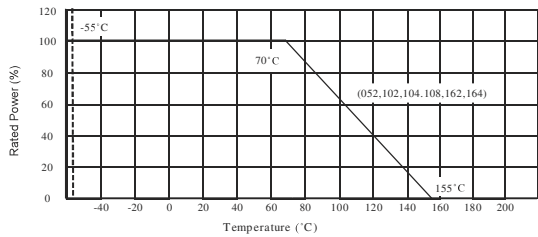
Features

- Highly reliability and stability
- Efficient, space and cost saving
- Convex terminations

Dimensions and Construction



Type	Dimensions						
	Inches (Millimeters)						
	L	W	H	L ₁	L ₂	P	Q
YCN052 (0201 X 2)	0.031 ± 0.004 (0.80 ± 0.10)	0.024 ± 0.004 (0.60 ± 0.10)	0.012 ± 0.002 (0.30 ± 0.05)	0.006 ± 0.004 (0.15 ± 0.10)	0.006 ± 0.004 (0.15 ± 0.10)	0.02 (0.50)	0.012 ± 0.004 (0.30 ± 0.10)
YCN102 (0402 X 2)	0.040 ± 0.004 (1.00 ± 0.10)	0.040 ± 0.004 (1.00 ± 0.10)	0.012 ± 0.002 (0.30 ± 0.05)	0.006 ± 0.004 (0.15 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)	0.03 (0.67)	0.013 ± 0.004 (0.33 ± 0.10)
YCN104 (0402 X 4)	0.078 ± 0.004 (2.00 ± 0.10)	0.040 ± 0.004 (1.00 ± 0.10)	0.016 ± 0.004 (0.40 ± 0.10)	0.008 ± 0.004 (0.20 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)	0.02 (0.50)	0.012 ± 0.004 (0.30 ± 0.10)
YCN108 (0402 X 8)	0.157 ± 0.008 (4.00 ± 0.20)	0.063 ± 0.004 (1.60 ± 0.10)	0.016 ± 0.004 (0.40 ± 0.1)	0.012 ± 0.006 (0.30 ± 0.15)	0.012 ± 0.004 (0.30 ± 0.10)	0.02 (0.50)	0.010 ± 0.004 (0.25 ± 0.10)
YCN162 (0603 X 2)	0.063 ± 0.006 (1.60 ± 0.15)	0.063 ± 0.006 (1.60 ± 0.15)	0.018 ± 0.004 (0.45 ± 0.10)	0.012 ± 0.006 (0.30 ± 0.15)	0.012 ± 0.006 (0.30 ± 0.15)	0.031 (0.80)	0.024 ± 0.004 (0.60 ± 0.10)
YCN164 (0603 X 4)	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.006 (1.60 ± 0.15)	0.020 ± 0.004 (0.50 ± 0.10)	0.012 ± 0.006 (0.30 ± 0.15)	0.012 ± 0.006 (0.30 ± 0.15)	0.031 (0.80)	0.020 ± 0.004 (0.50 ± 0.10)



Ordering Code / Information

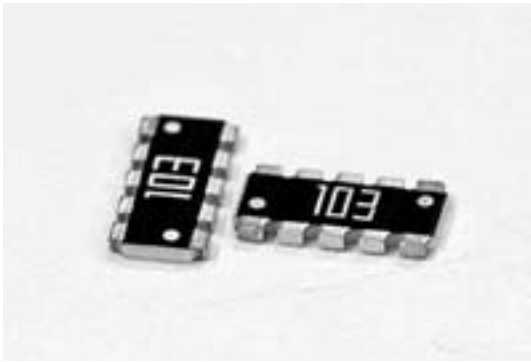
YCN	102	-	XXXX	-	F	K
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Type	Size (Configuration)	Nominal Resistance	Resistance Tolerance	Packaging
Thick Film Chip Resistor Array	052 - 0201 X 2 102 - 0402 X 2 104 - 0402 X 4 108 - 0402 X 8 162 - 0603 X 2 164 - 0603 X 4	Resistors	D = ±0.5% F = ±1% G = ±2% J = ±5% Z = zero ohm	L = 5,000 pcs Lead Free K = 10,000 pcs Lead Free
		Jumper		

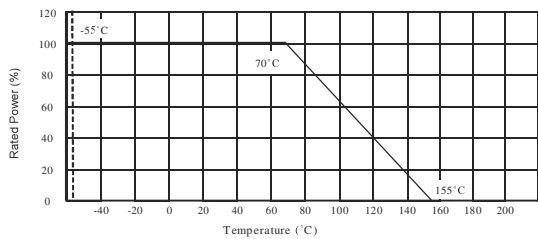
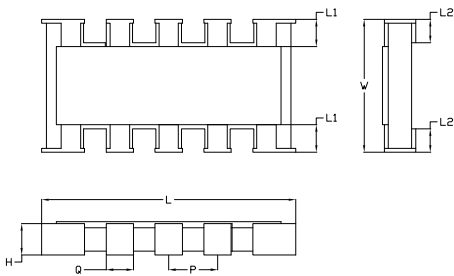
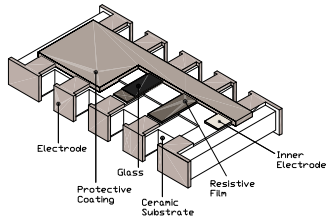
Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range			Max Working Voltage	Max Overload Voltage	Operating Temperature Range	Jumper Rated Current	Jumper Resistance Value
			E-96 D(±0.5%)	E-96 F(±1%)	E-24 G(±2%), J(±5%)					
YCN052 (0201 X 2)	1/32W	±500	-	-	3Ω ≤ R < 10Ω	12.5V	25V		0.5A	
		±300	-	-	10Ω ≤ R < 1KΩ					
		±200	-	-	1KΩ - 1MΩ					
YCN102 (0402 X 2)		±300	-	-	1Ω ≤ R < 10Ω	25V	50V	-55°C to +155°C	1.0A	50mΩ max
		±200	-	10Ω ≤ R ≤ 1MΩ	10Ω ≤ R ≤ 1MΩ					
YCN104 (0402 X 4)		±300	-	-	1Ω ≤ R < 10Ω	25V	50V	-55°C to +155°C	1.0A	50mΩ max
		±200	-	10Ω ≤ R ≤ 1MΩ	10Ω ≤ R ≤ 1MΩ					
YCN108 (0402 X 8)	1/16W	±250	-	10Ω - 1MΩ	1Ω - 1MΩ	50V	100V			
YCN162 (0603 X 2)		±200	-	10Ω - 1MΩ	1Ω - 10MΩ					
YCN164 (0603 X 4)		±200	22Ω - 470KΩ	1Ω - 1MΩ	1Ω - 10MΩ					

Test	Specification		Test Method
Resistance Value	Within Resistors specification		To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR		25°C/ +125°C
Short Time Overload	±(1.0%+0.05Ω)	For 1% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
	±(2.0%+0.10Ω)	For 2% & 5% tolerance	
Resistance to Soldering Heat	±(1.0%+0.05Ω)	For 1% tolerance	260°C ± 5°C, 10 seconds ± 1 second
		For 2% & 5% tolerance	
Moisture Resistance	±(2.0%+0.10Ω)	For 1% tolerance	40°C ± 2°C, 90% - 95% RH, 1000 hours
	±(3.0%+0.10Ω)	For 2% & 5% tolerance	
Load Life	±(2.0%+0.10Ω)	For 1% tolerance	70°C ± 2°C ,1000 hours, 1.5 hours On,0.5 hours Off cycle
	±(3.0%+0.10Ω)	For 2% & 5% tolerance	
High Temperature Exposure	±(1.0%+0.05Ω)	For 1% tolerance	155°C , 1000 hours. Unpowered. Measurement at 1000 hours after test conclusion.
	±(2.0%+0.10Ω)	For 2% & 5% tolerance	



Dimensions and Construction



Features

- Eight bussed resistor elements included in one array
- Resistor network takes up significantly less board space than a network based on discrete resistors
- Reduces placement costs

Type	Dimensions						
	Inches (Millimeters)						
	L	W	H	L ₁	L ₂	P	Q
YCN158 0612 (1632)	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.006 (1.60 ± 0.15)	0.018 ± 0.002 (0.45 ± 0.05)	0.012 ± 0.006 (0.30 ± 0.15)	0.014 ± 0.006 (0.35 ± 0.15)	0.025 ± 0.002 (0.64 ± 0.05)	0.018 ± 0.002 (0.45 ± 0.05)
YCN358 1225 (3264)	0.252 ± 0.008 (6.40 ± 0.20)	0.126 ± 0.008 (3.20 ± 0.20)	0.043 ± 0.006 (1.10 ± 0.15)	0.020 ± 0.006 (0.50 ± 0.15)	0.020 ± 0.006 (0.50 ± 0.15)	0.050 ± 0.002 (1.27 ± 0.05)	0.035 ± 0.006 (0.90 ± 0.15)

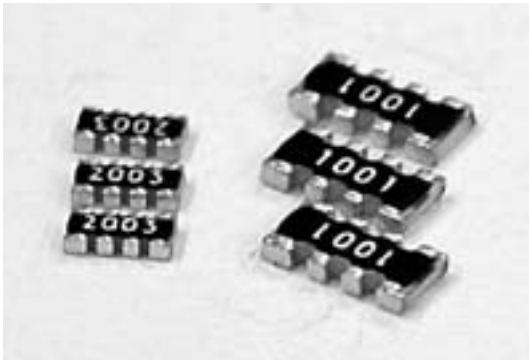
Ordering Code / Information

YCN	158	-	XXX	-	J	L
Type	Size(mm)	Nominal Resistance		Resistance Tolerance	Packaging	
Thick Film Chip Resistor Network	158 (0612/1632) 358 (1225/3264)	Resistors	3-Digit E24 Series 10Ω=100 100Ω=101	J = ±5%	E = 4,000 pcs Lead Free L = 5,000 pcs Lead Free	

Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range E-24 J(±5%)	Max Working Voltage	Max Overload Voltage	Operating Temperature Range
YCN158 0612 (1632)	1/16W	±200	10Ω to 100KΩ	25V	50V	-55°C to +155°C
YCN358 1225 (3264)	1/16W		10Ω TO 330KΩ	50V	100V	

Test	Specification	Test Method
Resistance Value	Within Resistors specification	To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR	25°C/ +125°C
Short Time Overload	±(2.0%+0.05Ω)	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
Resistance to Soldering Heat	±(1.0%+0.05Ω)	270°C ± 5°C, 10 seconds ± 1 second
Load Life	±(2.0%+0.05Ω)	70°C ± 2°C ,1000 hours, 1.5 hours On,0.5 hours Off cycle
High Temperature Exposure	±(1.0%+0.05Ω)	155°C , 1000 hours. Unpowered. Measurement at 24 ± 2 hours after test conclusion.

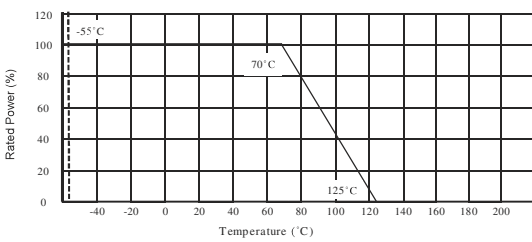
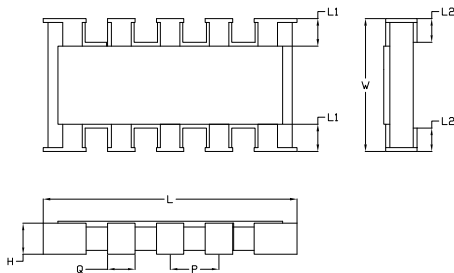
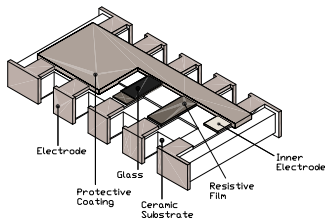


Features

- Tight Tolerance and Low T.C.R
- Highly reliability and stability
- Efficient, space and cost saving
- Convex terminations

Dimensions and Construction

Type	Dimensions						
	Inches (Millimeters)						
	L	W	H	L ₁	L ₂	P	Q
LCN164 (0603 X 4)	0.126 ± 0.006 (3.20 ± 0.15)	0.063 ± 0.006 (1.60 ± 0.15)	0.020 ± 0.004 (0.50 ± 0.10)	0.019 ± 0.006 (0.30 ± 0.15)	0.019 ± 0.006 (0.30 ± 0.15)	0.031 ± 0.002 (0.80 ± 0.05)	0.020 ± 0.006 (0.50 ± 0.15)



Ordering Code / Information

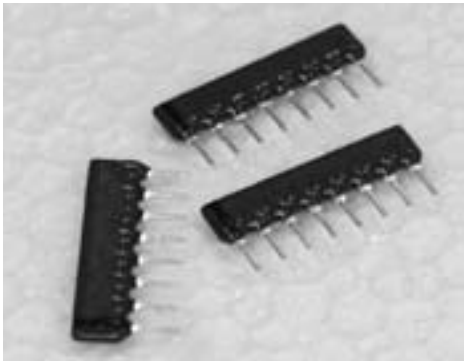
LCN	164	-	XXXX	-	B	L	-	L
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Type	Size (Configuration)	Nominal Resistance			Resistance Tolerance	Packaging	T.C.R (ppm/°C)
Thin Film Chip Resistor Array	164 - 0603 X 4	Resistors	4-Digit	E24 & E96 Series 10.2Ω=10R2 10KΩ=1002	B = ±0.1% D = ±0.5% F = ±1%	L = 5,000 pcs Lead Free	D = ±25 E = ±50

Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range			Max Working Voltage	Max Overload Voltage	Operating Temperature Range
			B(±0.1%)	D(±0.5%)	F(±1%)			
LCN164 (0603 X 4)	1/16W	±25	10R ≤ R ≤ 330KR			75V	150V	-55°C to +125°C
		±50						

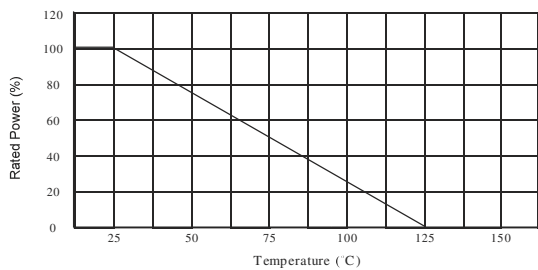
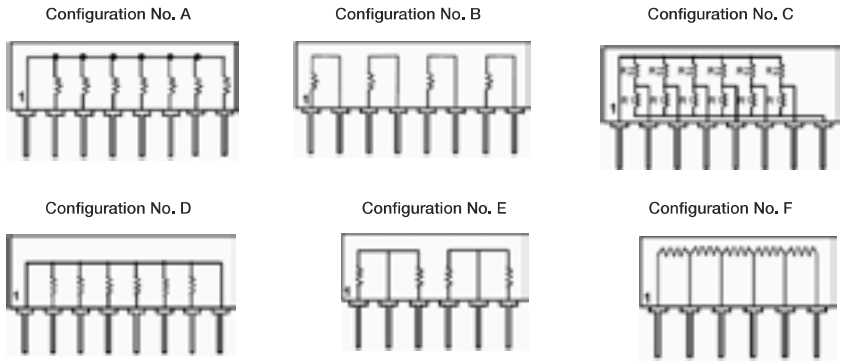
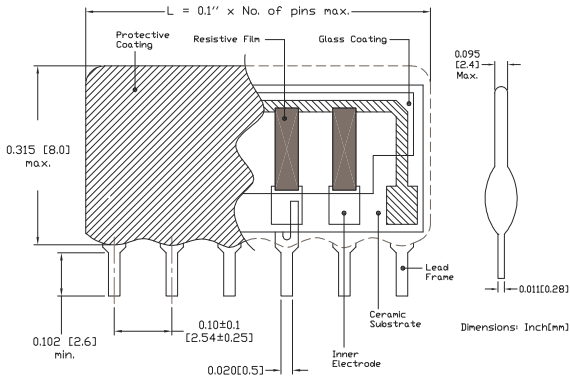
Test	Specification	Test Method
Resistance Value	Within Resistors specification	To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR	25°C/+125°C
Short Time Overload	±(0.5%+0.05Ω)	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
Moisture Resistance	±(0.5%+0.05Ω)	Each temperature/humidity cycle is defined at 8hrs, 3cycles/24hrs for 10days
Load Life	±(0.5%+0.05Ω)	70°C ± 2°C , 1000 hours, 1.5 hours On, 0.5 hours Off cycle
High Temperature Exposure	Meet electrical and physical characteristic	125°C , 1000 hours. Unpowered. Measurement at 24 ± 2 hours after test conclusion.



Features

- Up to 6 Configurations available for different applications (4 Pins - 12 Pins)
- Single resistor or dual resistors configuration available
- Tolerances available - 1%, 2%, 5%

Dimensions and Construction



Ordering Code / Information

YSN	04	A	-	1000	-	F	A3	-	E
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Type	Number of Pins	Configuration Type	Nominal Resistance			Resistance Tolerance	Packaging	T.C.R (ppm/ C)
Thick Film SIP Networks	04 - 4 Pins 06 - 6 Pins 07 - 7 Pins 08 - 8 Pins 09 - 9 Pins 10 - 10 Pins 12 - 12 Pins	A - Refer to Diagram B - Refer to Diagram C - Refer to Diagram D - Refer to Diagram E - Refer to Diagram F - Refer to Diagram	Resistors	3-Digit for 5% 4-Digit for 1%	E24 Series 2.2Ω=2R2 100Ω=101	F = ±1% G = ±2% J = ±5%	A3 = Ammo Pack 3 Pin Taping	E = ±50 F = ±100 (Leave Blank if Standard)

Application and Ratings

Product Type	Single Resistor Power Rating			Package Power Rating							Max Working Voltage
	Config. A,C,D,E,F	Config. B	Config. C	4-Pins	6-Pins	7-Pins	8-Pins	9-Pins	10-Pins	12-Pins	
YSN	0.3W	0.5W	0.17W	1W	1.5W	1.75W	2W	2.25W	2.5W	3W	200V

Standard Values - For Configuration A, B, D, E, F

Available in E-24 series.

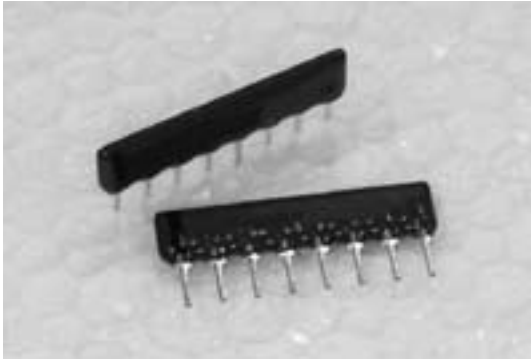
Resistance Range: 10Ω - 3MΩ (Preferred values in bold)

10, 11, 12, 13, 15, 16, 18, 29, 22, 24, 27, 30, 33, 36, 39, 43, 47, 51, 56, 62, 68, 75, 82, 91

Standard Values - For Configuration C, Dual Terminator (R₁ / R₂)

81Ω/130Ω	160Ω/260Ω	220Ω/270Ω	330Ω/470Ω
120Ω/195Ω	162Ω/260Ω	220Ω/330Ω	330Ω/680Ω
121Ω/195Ω	180Ω/390Ω	330Ω/390Ω	3.0KΩ/6.2KΩ

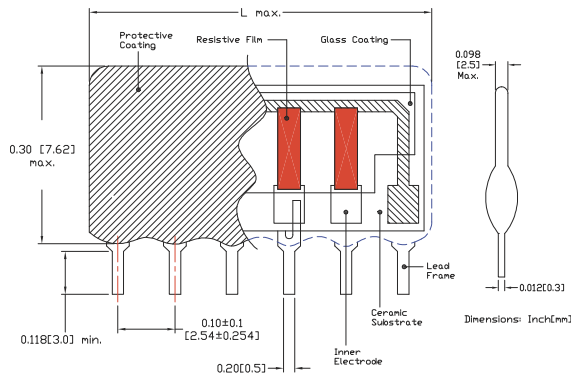
Test	Specification	Test Method
Resistance Value	Within Resistors specification	To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR	25°C/ +125°C
Short Time Overload	±0.5% For 1% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
	±1.0% For 2% & 5% tolerance	
Resistance to Soldering Heat	±0.25%	350°C , 5 seconds
Moisture Resistance	±(1%+0.1Ω) for 1% , 2% & 5% tolerance resistor	40°C ± 2°C, 90% - 95% RH, 1000 hours
Load Life	±(1.0%+0.05Ω) For 1% tolerance	70°C ± 2°C , 1000 hours, 1.5 hours On, 0.5 hours Off cycle
	±(2.0%+0.1Ω) For 2% & 5% tolerance	



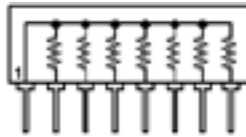
Features

- Thin film process
- High power rating up to 3 Watts in 2512 size
- Precise tolerance down to $\pm 0.5\%$
- Extremely low TCR down to ± 50 PPM/ $^{\circ}\text{C}$
- Resistance values from 50m to 1ohm
- High purity alumina substrate for high power dissipation

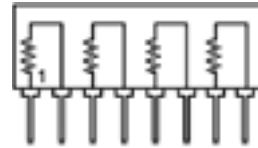
Dimensions and Construction



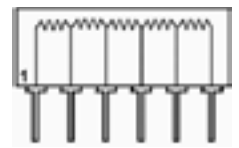
Configuration No. A



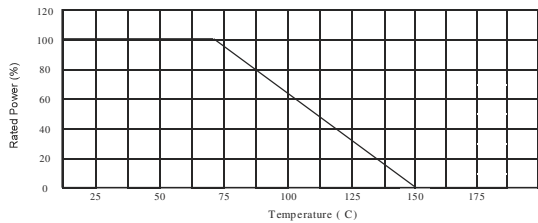
Configuration No. B



Configuration No. C



Number of Pins	Dimension 'L'	
	Inch	(Millimeters)
5	0.550	(14.0)
6	0.650	(16.5)
7	0.750	(19.0)
8	0.850	(21.6)
9	0.950	(24.1)
10	1.050	(26.7)



Ordering Code / Information

LSN	05	A	-	1000	-	F	A3	-	E
Type	Number of Pins	Configuration Type	Nominal Resistance			Resistance Tolerance	Packaging	T.C.R (ppm/$^{\circ}\text{C}$)	
Precision Thin Film SIP Networks	05 - 5 Pins 06 - 6 Pins 07 - 7 Pins 08 - 8 Pins 09 - 9 Pins 10 - 10 Pins	A - Refer to Diagram B - Refer to Diagram C - Refer to Diagram	Resistors	4-Digit for 1%	E192 & E96 Series 2.2 Ω =2R2 100 Ω =101	B = $\pm 0.1\%$ C = $\pm 0.25\%$ D = $\pm 0.5\%$ F = $\pm 1\%$	A3 = Ammo Pack 3 Pin Taping	A = ± 5 B = ± 10 C = ± 15 D = ± 25 E = ± 50	

Application and Ratings

Resistance Range			
Configuration Type	Resistance Range		
	15ppm/°C	25ppm/°C	50ppm/°C
A	1KΩ - 10KΩ	100Ω - 30KΩ	50Ω - 50KΩ
B	1KΩ - 30KΩ	100Ω - 75KΩ	50Ω - 100KΩ

Power Ratings									
Configuration Type	Single Resistor	Package Power						Max working voltage	Operating Temp
		5-Pins	6-Pins	7-Pins	8-Pins	9-Pins	10-Pins		
A	0.12W	0.4W	0.5W	0.6W	0.7W	0.8W	0.9W	100V	-55° to +150°C
B	0.15W	-	0.3W	-	0.4W	-	0.5W		

Test	Specification	Test Method
Resistance Value	Within Resistors specification	To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR	25°C/+125°C
Short Time Overload	±0.1%	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
Resistance to Soldering Heat	±0.1%	260°C ± 5°C, 10 seconds ± 1 second
Moisture Resistance	±0.25%	40°C ± 2°C, 90% - 95% RH, 1000 hours
Load Life	±0.25%	70°C ± 2°C ,1000 hours, 1.5 hours On,0.5 hours Off cycle