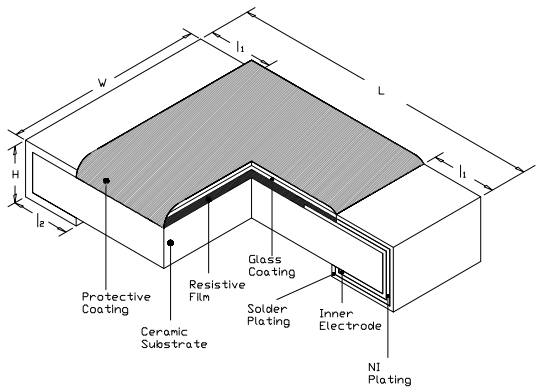


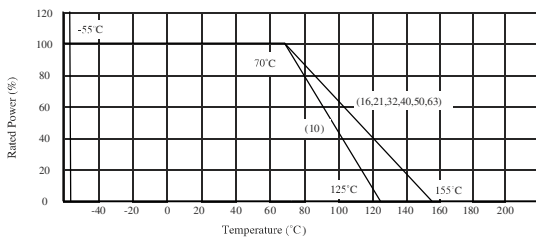
Features

- Resistance range - above 10MΩ to 100MΩ
- Highly reliable multilayer electrode construction
- Compatible with all soldering process

Dimensions and Construction



Type	Dimensions				
	Inches (Millimeters)				
	L	W	H	l ₁	l ₂
CH10 0402 (1005)	0.040 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.002 (0.50 ± 0.05)	0.014 ± 0.002 (0.35 ± 0.05)	0.008 ± 0.004 (0.20 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)
CH16 0603 (1608)	0.063 ± 0.004 (1.60 ± 0.10)	0.031 ± 0.004 (0.80 ± 0.10)	0.018 ± 0.004 (0.45 ± 0.10)	0.012 ± 0.008 (0.30 ± 0.20)	0.012 ± 0.008 (0.30 ± 0.20)
CH21 0805 (2012)	0.079 ± 0.006 (2.00 ± 0.15)	0.049 ± 0.004 (1.25 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.016 ± 0.008 (0.40 ± 0.20)	0.016 ± 0.008 (0.40 ± 0.20)
CH32 1206 (3216)	0.122 ± 0.004 (3.10 ± 0.10)	0.063 ± 0.006 (1.60 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.020 ± 0.010 (0.50 ± 0.25)	0.020 ± 0.010 (0.50 ± 0.25)
CH40 1210 (3225)	0.122 ± 0.004 (3.10 ± 0.10)	0.098 ± 0.006 (2.50 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.020 ± 0.010 (0.50 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)
CH50 2010 (5025)	0.200 ± 0.006 (5.00 ± 0.15)	0.098 ± 0.006 (2.50 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.024 ± 0.010 (0.60 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)
CH63 2512 (6432)	0.250 ± 0.006 (6.30 ± 0.15)	0.126 ± 0.006 (3.20 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.024 ± 0.010 (0.60 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)



Ordering Code / Information

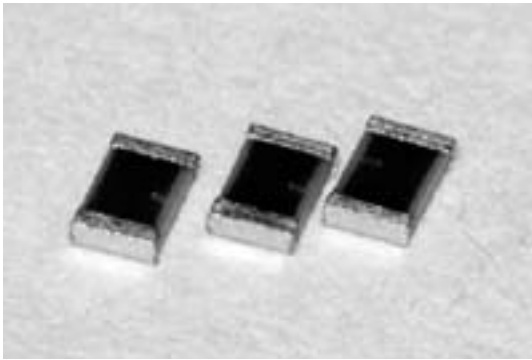
CH	10	-	XXXX	-	F	K
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Type	Size (Inch / mm)	Nominal Resistance		Resistance Tolerance	Packaging	
High Ohmic Value Chip Resistors	10 (0402/1005) 16 (0603/1608) 21 (0805/2012) 32 (1206/3216) 40 (1210/3225) 50 (2010/5025) 63 (2512/6432)	Resistors	3-Digit	E24 Series 2.2Ω=2R2 100Ω=101	F = ±1% J = ±5%	E = 4,000 pcs Lead Free L = 5,000 pcs Lead Free K = 10,000 pcs Lead Free Y = 20,000 pcs Lead Free
			4-Digit	E96 Series 10.2Ω=10R2 10KΩ=1002		

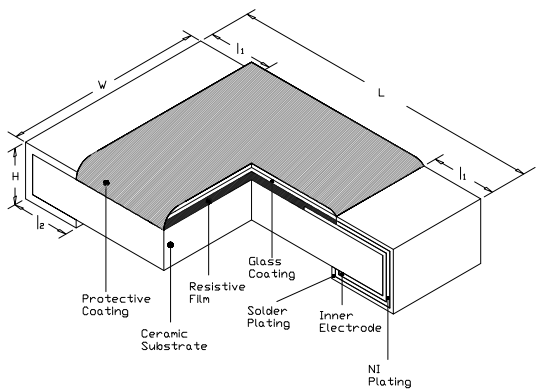
Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range E-96, E-24 F(±1%)	Resistance Range E-24 J(±5%)	Max Working Voltage	Max Overload Voltage	Operating Temperature Range		
CH10 0402 (1005)	1/16W	±200	10MΩ < R ≤ 15MΩ		50V	100V	-55°C to +125°C		
		±500	15MΩ < R ≤ 100MΩ						
CH16 0603 (1608)	1/10W	±200	10MΩ < R ≤ 30MΩ				150V	300V	-55°C to +155°C
		±500	30MΩ < R ≤ 100MΩ						
CH21 0805 (2012)	1/8W	±200	10MΩ < R ≤ 30MΩ		200V	400V			
		±500	30MΩ < R ≤ 100MΩ						
CH32 1206 (3216)	1/4W	±200	10MΩ < R ≤ 30MΩ		200V	400V			
		±500	30MΩ < R ≤ 100MΩ						
CH40 1210 (3225)	1/3W	±200	10MΩ < R ≤ 30MΩ		200V	400V			
		±500	30MΩ < R ≤ 100MΩ						
CH50 2010 (5025)	3/4W	±200	10MΩ < R ≤ 30MΩ		200V	400V			
		±500	30MΩ < R ≤ 100MΩ						
CH63 2512 (6432)	1W	±200	10MΩ < R ≤ 30MΩ		200V	400V			
		±500	30MΩ < R ≤ 100MΩ						

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 5secs which is lower
	±1.0%	For 2% & 5% tolerance	
Resistance to Soldering Heat	±(0.5%+0.05Ω)	For 1% tolerance	260°C ± 5°C, 10 seconds ± 1 second
	±(1.0%+0.05Ω)	For 2% & 5% tolerance	
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	
High Temperature Exposure	±(0.5%+0.05Ω)	For 1% tolerance	125°C , 1000 hours. Unpowered. Measurement at 24 ± 2 hours after test conclusion.
	±(1.0%+0.05Ω)	For 2% & 5% tolerance	



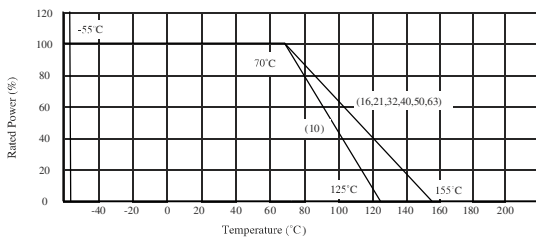
Dimensions and Construction



Features

- Resistance Range - above 10MΩ to 1TΩ (10¹²Ω)
- Tolerance of ±5% for resistance values up to 500MΩ,
- For resistance range more than 500MΩ to 1TΩ, tolerance available are ±10% and ±20%
- Excellent thermal, voltage and environmental stability

Type	Dimensions				
	Inches (Millimeters)				
	L	W	H	l ₁	l ₂
CH10 0402 (1005)	0.040 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.002 (0.50 ± 0.05)	0.014 ± 0.002 (0.35 ± 0.05)	0.008 ± 0.004 (0.20 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)
CH16 0603 (1608)	0.063 ± 0.004 (1.60 ± 0.10)	0.031 ± 0.004 (0.80 ± 0.10)	0.018 ± 0.004 (0.45 ± 0.10)	0.012 ± 0.008 (0.30 ± 0.20)	0.012 ± 0.008 (0.30 ± 0.20)
CH21 0805 (2012)	0.079 ± 0.006 (2.00 ± 0.15)	0.049 ± 0.004 (1.25 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.016 ± 0.008 (0.40 ± 0.20)	0.016 ± 0.008 (0.40 ± 0.20)
CH32 1206 (3216)	0.122 ± 0.004 (3.10 ± 0.10)	0.063 ± 0.006 (1.60 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.020 ± 0.010 (0.50 ± 0.25)	0.020 ± 0.010 (0.50 ± 0.25)
CH40 1210 (3225)	0.122 ± 0.004 (3.10 ± 0.10)	0.098 ± 0.006 (2.50 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.020 ± 0.010 (0.50 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)
CH50 2010 (5025)	0.200 ± 0.006 (5.00 ± 0.15)	0.098 ± 0.006 (2.50 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.024 ± 0.010 (0.60 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)
CH63 2512 (6432)	0.250 ± 0.006 (6.30 ± 0.15)	0.126 ± 0.006 (3.20 ± 0.15)	0.022 ± 0.002 (0.55 ± 0.05)	0.024 ± 0.010 (0.60 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)



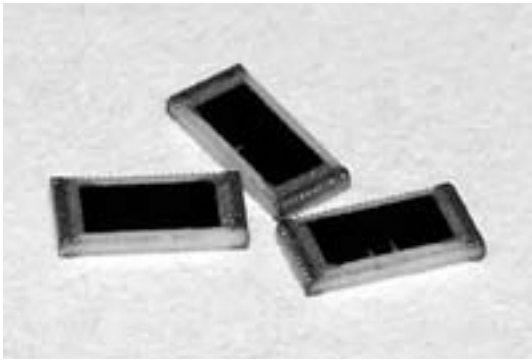
Ordering Code / Information

CH	10	-	XXX	-	J	K
Type	Size (Inch / mm)		Nominal Resistance		Resistance Tolerance	Packaging
Ultra High Ohmic Value Chip Resistors	10 (0402/1005) 16 (0603/1608) 21 (0805/2012) 32 (1206/3216) 40 (1210/3225) 50 (2010/5025) 63 (2512/6432)		3-Digit E24 Series 100MΩ=107 For Resistance Value 1G and above Tolerance 5% - Represented by 3 figures, "G" (For Giga Ohm) and "T" (For Tera Ohm) indicates the decimal on value (Only available for E-24 Series)		J = ±5% K = ±10% M = ±20%	E = 4,000 pcs Lead Free L = 5,000 pcs Lead Free K = 10,000 pcs Lead Free

Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range E-24 K(±10%)	Resistance Range E-24 J(±5%)	Max Working Voltage	Max Overload Voltage	Operating Temperature Range
CH10 0402 (1005)	1/16W	±500	100MΩ < R ≤ 470MΩ		50V	100V	-55°C to +125°C
CH16 0603 (1608)	1/10W	±500	100MΩ < R ≤ 1GΩ				
CH21 0805 (2012)	1/8W	±1000	1GΩ < R ≤ 10GΩ		150V	300V	-55°C to +155°C
		±500	100MΩ < R ≤ 1GΩ				
		±2000	10GΩ < R ≤ 100GΩ				
		±2500	100GΩ < R ≤ 1TΩ				
CH32 1206 (3216)	1/4W	±500	100MΩ < R ≤ 1GΩ		200V	400V	
		±1000	1GΩ < R ≤ 10GΩ				
		±2000	10GΩ < R ≤ 100GΩ				
		±2500	100GΩ < R ≤ 1TΩ				
CH40 1210 (3225)	1/3W	±500	100MΩ < R ≤ 470MΩ		200V	400V	
CH50 2010 (5025)	3/4W	±500	100MΩ < R ≤ 470MΩ				
CH63 2512 (6432)	1W	±500	100MΩ < R ≤ 1GΩ				

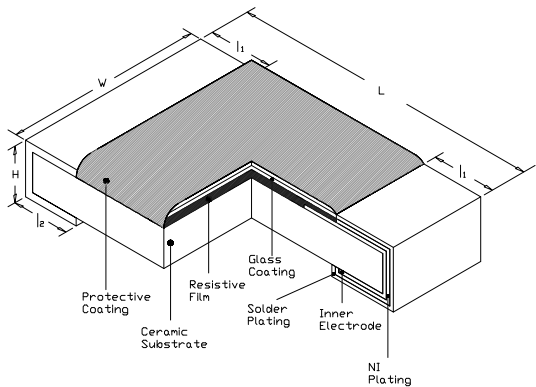
Test	Specification		Test Method
Resistance Value	Within Resistors specification		To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR		25°C/ +125°C
Short Time Overload	±0.5%	For 1% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5secs which is lower
	±1.0%	For 2% & 5% tolerance	
Resistance to Soldering Heat	±(0.5%+0.05Ω)	For 1% tolerance	260°C ± 5°C, 10 seconds ± 1 second
	±(1.0%+0.05Ω)	For 2% & 5% tolerance	
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	
High Temperature Exposure	±(0.5%+0.05Ω)	For 1% tolerance	125°C , 1000 hours. Unpowered. Measurement at 24 ± 2 hours after test conclusion.
	±(1.0%+0.05Ω)	For 2% & 5% tolerance	



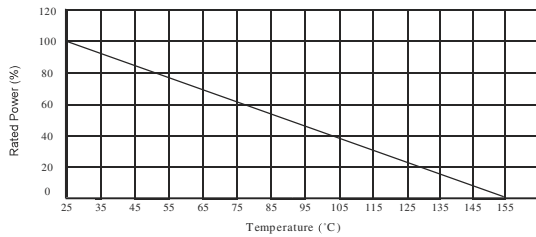
Features

- High resistance range (up to 1GΩ), with maximum working voltage as high as 1kV
- Precise tolerance down to ±0.1%

Dimensions and Construction



Type	Dimensions				
	Inches (Millimeters)				
	L	W	H	l ₁	l ₂
CH32 1206 (3216)	0.126 ± 0.01 (3.2 ± 0.25)	0.061 ± 0.014 (1.55 ± 0.35)	0.024 ± 0.008 (0.6 ± 0.2)	0.020 ± 0.010 (0.50 ± 0.25)	0.020 ± 0.015 (0.51 ± 0.38)
CH63 2512 (6432)	0.25 ± 0.01 (6.4 ± 0.25)	0.132 ± 0.014 (3.35 ± 0.35)	0.024 ± 0.008 (0.6 ± 0.2)	0.024 ± 0.010 (0.60 ± 0.25)	0.025 ± 0.015 (0.63 ± 0.38)



Ordering Code / Information

CH	32	-	XXXX	-	B	L
Type	Size (Inch / mm)	Nominal Resistance			Resistance Tolerance	Packaging
Precision High Ohmic Chip Resistors	32 (1206/3216) 63 (2512/6432)	Resistors	4-Digit	E96 Series 100KΩ = 1003 1MΩ=1004	B = ±0.1% C = ±0.25% D = ±0.5%	E = 4,000 pcs Lead Free L = 5,000 pcs Lead Free

Application and Ratings

Product Type	Power Rating @ 25°C	T.C.R (ppm/°C) Max	Resistance Range E-192 B (±0.1%), C (±0.25%), D (±0.5%)	Max Working Voltage	Max Overload Voltage
CH32 1206 (3216)	1/4W	±100	100KΩ to 100MΩ	300V	600V
CH63 2512 (6432)	1W			1,000V	2,000V

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
Pulse Capability	1.0%	2 times of rated voltage, 1.2x 50uS
Resistance to Soldering Heat	0.10%	260°C ± 5°C, 3 seconds
Moisture Resistance	0.50%	40°C ± 2°C, 90% - 95% RH, 1000 hours
Load Life	1.00%	70°C ± 2°C , 1000 hours, 1.5 hours On, 0.5 hours Off cycle
Low Temp Exposure	0.50%	24 hrs @ -55° C
High Temp Exposure	0.50%	100 hrs @ 125° C