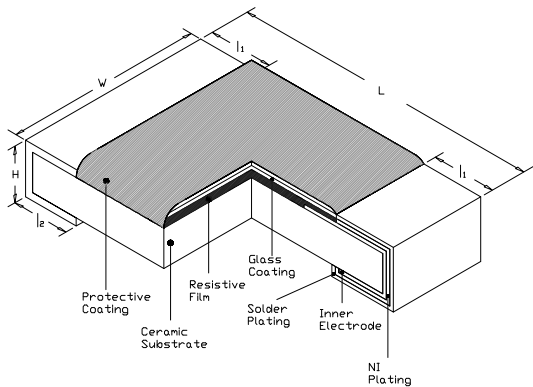


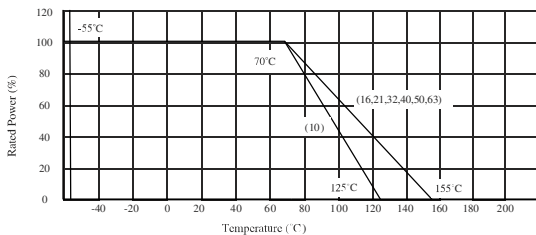
**Features**

- Offers double the power rating of standard chip resistors
- Up to 2W for 2512 case size
- Pb-Free with reflow soldering backward compatibility

**Dimensions and Construction**



Part Number	Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5
<b>CPW10 0402 (1005)</b>	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)
<b>CPW16 0603 (1608)</b>	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)
<b>CPW21 0805 (2012)</b>	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)
<b>CPW32 1206 (3216)</b>	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)
<b>CPW40 1210 (3225)</b>	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)
<b>CPW50 2010 (5025)</b>	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)
<b>CPW63 2512 (6432)</b>	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)



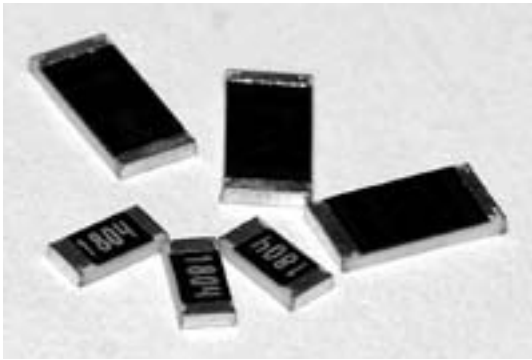
**Ordering Code / Information**

CPW	10	-	XXXX	-	F	K
<b>Type</b>	<b>Size (Inch / mm)</b>	<b>Nominal Resistance</b>		<b>Resistance Tolerance</b>	<b>Packaging</b>	
High Power Rating Chip Resistors	10 (0402/1005) 16 (0603/1608) 21 (0805/2012) 40 (1210/3225) 50 (2010/5025) 63 (2512/6432)	Resistors	3-Digit E24 Series 2.2Ω=2R2 100Ω=101	D = ±0.5% F = ±1% G = ±2% 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 D(±0.5%)	Resistance Range E-96, E-24 F(±1%)	Resistance Range E-24 G(±2%), J(±5%)	Max Working Voltage	Max Overload Voltage	Operating Temperature Range
CPW10 0402 (1005)	1/8W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	50V	100V	-55°C to +125°C
			10Ω ≤ R < 1MΩ					
CPW16 0603 (1608)	1/5W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	150V	300V	-55°C to +155°C
			10Ω ≤ R < 1MΩ					
CPW21 0805 (2012)	1/4W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	200V	400V	-55°C to +155°C
			10Ω ≤ R < 1MΩ					
CPW32 1206 (3216)	1/2W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	200V	400V	-55°C to +155°C
			10Ω ≤ R < 1MΩ					
CPW40 1210 (3225)	2/3W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	200V	400V	-55°C to +155°C
			10Ω ≤ R < 1MΩ					
CPW50 2010 (5025)	1W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	200V	400V	-55°C to +155°C
			10Ω ≤ R < 1MΩ					
CPW63 2512 (6432)	2W	±200	0.1Ω ≤ R < 10Ω		1MΩ ≤ R ≤ 15MΩ	200V	400V	-55°C to +155°C
			10Ω ≤ R < 1MΩ					

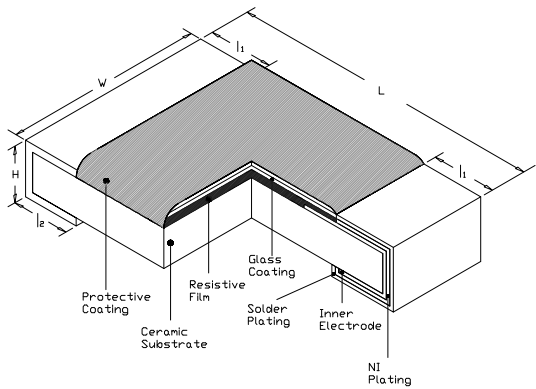
Test	Specification		Test Method
<b>Resistance Value</b>	Within Resistors specification		To be measure at 25°C
<b>Resistance Temperature Coefficient</b>	Within Specification of TCR		25°C/ +125°C
<b>Short Time Overload</b>	±0.5%	For 1% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
	±1.0%	For 2% & 5% tolerance	
<b>Resistance to Soldering Heat</b>	±(0.5%+0.05Ω)	For 1% tolerance	260°C ± 5°C, 10 seconds ± 1 second
	±(1.0%+0.05Ω)	For 2% & 5% tolerance	
<b>Moisture Resistance</b>	±(1%+0.1Ω) for 1% , 2% & 5% tolerance resistor		40°C ± 2°C, 90% - 95% RH, 1000 hours
<b>Load Life</b>	±(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	
<b>High Temperature Exposure</b>	±(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	



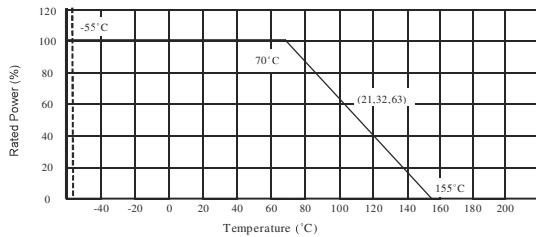
**Features**

- Higher maximum working voltage compared to standard chip resistors
- Reliable electrode construction

**Dimensions and Construction**



Type	Dimensions				
	Inches (Millimeters)				
	L	W	H	l <sub>1</sub>	l <sub>2</sub>
<b>CPM21 0805 (2012)</b>	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)
<b>CPM32 1206 (3216)</b>	0.122 ± 0.004 (3.10 ± 0.10)	0.063 ± 0.006 (1.60 ± 0.15)	0.022 ± 0.004 (0.55 ± 0.10)	0.020 ± 0.010 (0.50 ± 0.25)	0.020 ± 0.010 (0.50 ± 0.25)
<b>CPM63 2512 (6432)</b>	0.250 ± 0.006 (6.30 ± 0.15)	0.126 ± 0.006 (3.20 ± 0.15)	0.022 ± 0.004 (0.55 ± 0.10)	0.024 ± 0.010 (0.60 ± 0.25)	0.016 ± 0.008 (0.40 ± 0.20)



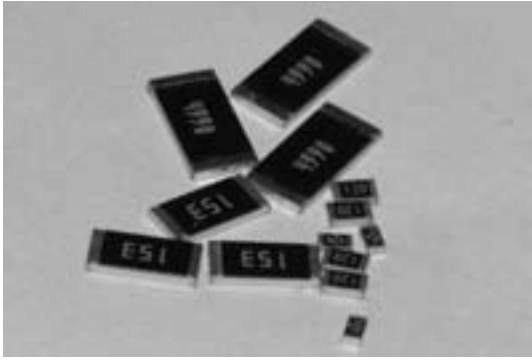
**Ordering Code / Information**

CPM	21	-	1000	-	F	L
<b>Type</b>	<b>Size (Inch / mm)</b>	<b>Nominal Resistance</b>		<b>Resistance Tolerance</b>	<b>Packaging</b>	
Medium Voltage Chip Resistors	21 (0805/2012) 32 (1206/3216) 63 (2512/6432)	Resistors	3-Digit E24 Series 100KΩ=104	F = ±1% J = ±5%	E = 4,000 pcs Lead Free L = 5,000 pcs Lead Free	
			4-Digit E96 Series 100KΩ=1003			

## 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	Dielectric Withstanding Voltage	Operating Temperature Range
CPM21 0805 (2012)	1/8W	± 200	100KΩ to 10MΩ		400V	800V	1,000V	-55°C to +155°C
CPM32 1206 (3216)	1/4W		100KΩ to 10MΩ	100KΩ to 27MΩ	500V			
CPM63 2512 (6432)	1W		-	4.7MΩ to 16MΩ				

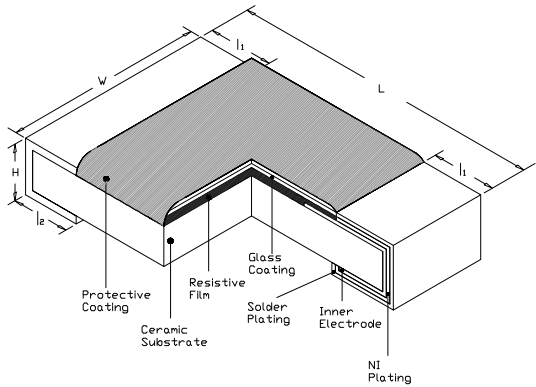
Test	Specification		Test Method
Resistance Value	Within Resistors specification		To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR		25°C/ +125°C
Short Time Overload	±0.5%	For 1% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5secs which is 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	



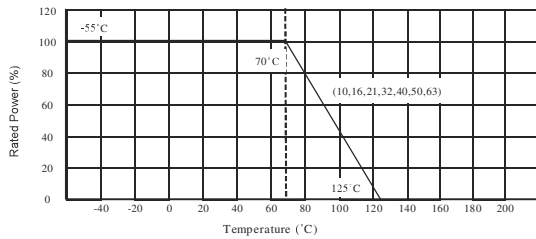
**Features**

- Highly reliable multilayer electrode construction
- Up to 3.0kV for 2512 case size
- Excellent performance at high voltage
- Suitable for inverters and camera flash circuits

**Dimensions and Construction**



Type	Dimensions				
	Inches (Millimeters)				
	L	W	H	$l_1$	$l_2$
CPH10 0402 (1005)	0.040 ± 0.004 (1.00 ± 0.05)	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 (0.20 ± 0.10)
CPH16 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)
CPH21 0805 (2012)	0.079 ± 0.006 (2.00 ± 0.10)	0.049 ± 0.004 (1.25 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.014 ± 0.008 (0.35 ± 0.20)	0.016 ± 0.008 (0.40 ± 0.20)
CPH32 1206 (3216)	0.122 ± 0.004 (3.10 ± 0.10)	0.061 ± 0.004 (1.55 ± 0.10)	0.022 ± 0.004 (0.55 ± 0.10)	0.020 ± 0.010 (0.50 ± 0.25)	0.020 ± 0.008 (0.50 ± 0.20)
CPH50 2010 (5025)	0.200 ± 0.008 (5.00 ± 0.20)	0.098 ± 0.006 (2.50 ± 0.15)		0.024 ± 0.010 (0.60 ± 0.25)	
CPH63 2512 (6432)	0.25 ± 0.008 (6.35 ± 0.20)	0.126 ± 0.006 (3.20 ± 0.15)			



**Ordering Code / Information**

CPH	10	-	XXXX	-	F	K
-----	----	---	------	---	---	---

Type	Size (Inch / mm)	Nominal Resistance		Resistance Tolerance	Packaging	
High Voltage Chip Resistors	10 (0402/1005) 16 (0603/1608) 21 (0805/2012) 32 (1206/3216) 50 (2010/5025) 63 (2512/6432)	Resistors	3-Digit	E24 Series 10Ω=100 100Ω=101	F = ± 1% J = ± 5%	E = 4,000 pcs Lead Free L = 5,000 pcs Lead Free K = 10,000 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
CPH10 0402 (1005)	1/16W	±100 ±200	10Ω - 1MΩ 1.02MΩ - 10MΩ		100V	200V	-55°C to +125°C
CPH16 0603 (1608)	1/10W				200V	400V	
CPH21 0805 (2012)	1/8W				400V	800V	
CPH32 1206 (3216)	1/4W				500V	1,000V	
CPH50 2010 (5025)	1/2W				2,000V	3,000V	
CPH63 2512 (6432)	1W				3,000V	4,000V	

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
Short Time Overload	±1%	±(1.0%+0.05Ω)	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
	±5%	±(2.0%+0.05Ω)	
Insulation Resistance	±1%	≥ 10G	Max. overload voltage for 1 minute
	±5%		
Endurance	±1%	±(2.0%+0.10Ω)	70 ± 2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
	±5%	±(3.0%+0.10Ω)	
Damp Heat with Load	±1%	±(2.0%+0.10Ω)	40 ± 2°C, 90-95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
	±5%	±(3.0%+0.10Ω)	
Dry Heat	±1%	±(1.0%+0.05Ω)	at +125°C for 1000 hrs
	±5%	±(1.5%+0.10Ω)	
Bending Strength	±1%	±(1.0%+0.05Ω)	Bending once for 5 seconds 2010, 2512 sizes: 2mm Other sizes: 3mm
	±5%	±(1.0%+0.05Ω)	
Solderability	±1%	95% min. coverage	245 ± 5°C for 3 seconds
	±5%		
Resistance to Soldering Heat	±1%	±(0.5%+0.05Ω)	260 ± 5°C for 10 seconds
	±5%	±(1.0%+0.05Ω)	
Voltage Proof	No breakdown or flashover		1.42 times RCWV (RMS) for 1 minute
Leaching	Individual leaching area <= 5% Total leaching area <= 10%		260 ± 5°C for 30 seconds
Rapid Change of Temperature	±1%	±(0.5%+0.05Ω)	-55°C to +125°C, 5 cycles
	±5%	±(1.0%+0.05Ω)	