

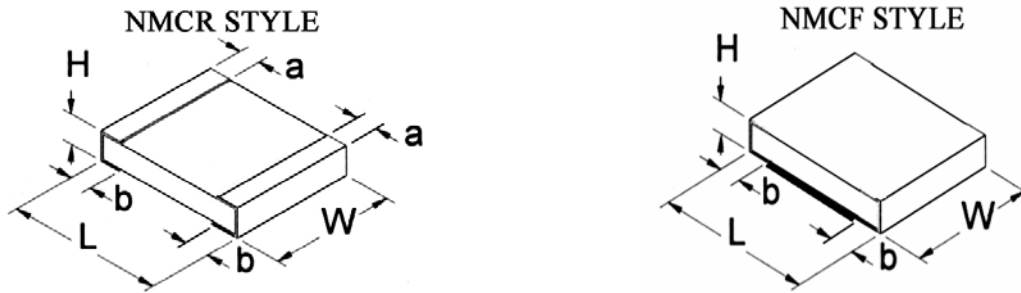
- Features:
- NMCR series provides standard wrap-around termination
  - NMCF series provides flip-chip technology, single-sided face down
  - Pb-Ag terminations require epoxy adhesive for attachment
  - Zero ohm available (max. 0.05Ω)
  - RoHS compliant

Electrical Specifications							
Type / Code	Package Size	Power Rating (Watts) @70°C	Maximum Working Voltage <sup>①</sup>	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance	
						1%	5%
NMCR / NMCF 0402	0402	0.063W	50V	100V	±200	1 - 9.76	
Jumper					-	0Ω (<50mΩ)	
NMCR / NMCF 0603	0603	0.100W	50V	100V	±200	1 - 9.76	
Jumper					-	0Ω (<50mΩ)	
NMCR / NMCF 0805	0805	0.125W	150V	300V	±200	1 - 9.76	
NMCR / NMCF 1206	1206	0.250W	200V	400V	±200	1 - 9.76	
Jumper					-	0Ω (<50mΩ)	
NMCR / NMCF 1210	1210	0.330W	200V	400V	±200	1 - 9.76	
Jumper					-	0Ω (<50mΩ)	
NMCR / NMCF 2010	2010	0.750W	200V	400V	±200	1 - 9.76	
Jumper					-	0Ω (<50mΩ)	
NMCR / NMCF 2512	2512	1.000W	250V	500V	±200	1 - 9.76	
Jumper					-	0Ω (<50mΩ)	

Operating Voltage =  $\sqrt{P \cdot R}$  or maximum operating voltage listed above, whichever is lower.  
Overload Voltage =  $2.5\sqrt{P \cdot R}$  or maximum overload voltage listed above, whichever is lower.

### How to Order

SEI Type		Size		Nominal Resistance	Tolerance	Packaging			
NMCR		0603		4.7K	5%	R			
Type	Description	Code	Wattage	Tolerance		Types	Qty	Description	Code
NMCR	Wrap-around Termination	0402	0.063W	1%		0402	10,000	10" Reel - Paper	G
NMCF	Flip Chip	0603	0.100W	5%				10" Reel - Paper	G
		0805	0.125W			0603, 0805, 1206	5,000	7" Reel - Paper	R
		1206	0.250W					Bulk	A
		1210	0.330W			1210, 2010, 2512	4,000	7" - Embossed	R
		2010	0.750W						
		2512	1.000W						



Mechanical Specifications						
Type / Code	L Body Length	W Body Width	H Body Height	a $\varnothing$ Top Termination	b Bottom Termination	Units
NMCR 0402	0.039 ± 0.002	0.020 ± 0.002	0.014 ± 0.002	0.008 ± 0.004	0.010 +0.002/-0.004	inches
NMCF 0402	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.25 +0.05/-0.10	mm
NMCR 0603	0.063 ± 0.004	0.031 ± 0.004	0.018 ± 0.004	0.012 ± 0.008	0.012 ± 0.008	inches
NMCF 0603	1.60 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20	mm
NMCR 0805	0.079 ± 0.008	0.049 ± 0.004	0.020 ± 0.006	0.016 ± 0.008	0.016 ± 0.008	inches
NMCF 0805	2.00 ± 0.20	1.25 ± 0.10	0.50 ± 0.15	0.40 ± 0.20	0.40 ± 0.20	mm
NMCR 1206	0.126 ± 0.008	0.063 ± 0.006	0.021 ± 0.006	0.020 ± 0.010	0.020 ± 0.010	inches
NMCF 1206	3.20 ± 0.20	1.60 ± 0.15	0.55 ± 0.15	0.50 ± 0.25	0.50 ± 0.25	mm
NMCR 1210	0.126 ± 0.008	0.098 ± 0.008	0.021 ± 0.006	0.020 ± 0.010	0.020 ± 0.010	inches
NMCF 1210	3.20 ± 0.20	2.5 ± 0.20	0.55 ± 0.15	0.50 ± 0.25	0.50 ± 0.25	mm
NMCR 2010	0.197 ± 0.008	0.098 ± 0.008	0.021 ± 0.006	0.024 ± 0.010	0.024 ± 0.010	inches
NMCF 2010	5.00 ± 0.20	2.5 ± 0.20	0.55 ± 0.15	0.60 ± 0.25	0.60 ± 0.25	mm
NMCR 2512	0.248 ± 0.008	0.126 ± 0.008	0.021 ± 0.006	0.024 ± 0.010	0.024 ± 0.010	inches
NMCF 2512	6.30 ± 0.20	3.2 ± 0.20	0.55 ± 0.15	0.60 ± 0.25	0.60 ± 0.25	mm

① "a" dimension applies only to the NMCR series type; NMCF has only bottom terminations.

Performance Characteristics		
Test	Test Conditions (JIS C 5202)	Test Results
Short Time Overload	2.5x rated voltage for 5 seconds	±(2% + 0.1 $\Omega$ )
Dielectric Withstanding Voltage	100VAC, 1 minute	±(1% + 0.05 $\Omega$ )
Resistance to Soldering Heat	260°C ± 5°C, for 10 sec. ± 0.5 sec (Solder Bath)	±(1% + 0.05 $\Omega$ )
Solderability	235°C ± 5°C, for 2 sec ± 0.5 sec (Colophonium flux)	95% coverage, minimum
Temperature Cycle	-65°C: 30 min. 25°C: 2 to 3 min. 155°C: 30 min. 25°C: 2 to 3 min. (5 cycles)	±(1% + 0.05 $\Omega$ ) Jumper (<0.05 $\Omega$ )
Endurance (Damp load)	40°C ± 2°C, 90% RH, Rated Load 90 min. ON, 30 min. OFF for 1,000 hrs. -0 hrs. / +48 hrs.	±(3% + 0.1 $\Omega$ ) Jumper (<0.05 $\Omega$ )
Endurance (Rated load)	70°C ± 2°C, Rated Load 90 min. ON, 30 min. OFF for 1,000 hrs. -0 hrs. / +48 hrs.	±(3% + 0.1 $\Omega$ ) Jumper (<0.05 $\Omega$ )
Voltage Coefficient	1/10 rated voltage for 3 sec. max, then rated voltage for 3 sec. max.	±100 (ppm/V)
Robustness of Termination	Bend of 3mm for 5 ± 1 sec.	±(1.0% + 0.05 $\Omega$ )

Operating Temperature Range: -65°C to +155°C