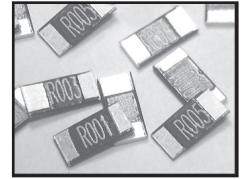




FEATURES

- HIGH POWER SURFACE MOUNTABLE 2512 CASE SIZE
- **AEC Q-200 QUALIFIED**
- WIDE RANGE OF RESISTANCE VALUES (UP TO 500mΩ)
- METAL STRIP CONSTRUCTION
- PRECISION TOLERANCE (±1%)
- REFLOW COMPATIBLE

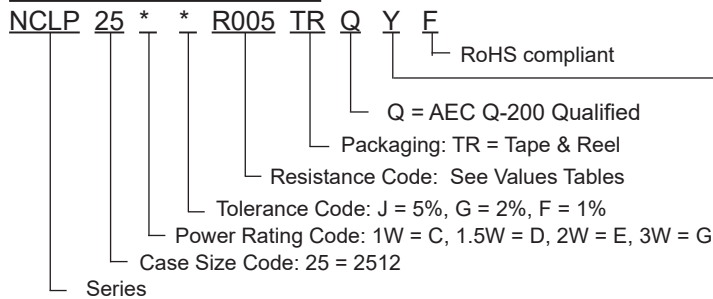


SPECIFICATIONS

Type	EIA Size	Material (See Note on EMF Characteristics Below)	Power Rating at 70°C	Resistance Tolerance (Code)	Temperature Coefficient (ppm/°C, +25°C ~ +125°C)	Resistance Range*	Operating Temperature Range (°C)
NCLP25...F	2512	Ni-Cu	1W (C)	±1% (F) ±2% (G) ±5% (J)	±50ppm	68mΩ ~ 100mΩ	-55°C ~ +170°C
			1.5W (D)				
			2W (E)				
			3W (G)				
NCLP25...F	2512	Mn-Cu	1W (C)				
			1.5W (D)				
			2W (E)				
			3W (G)				
NCLP25...F	2512	Ni-Cr	1W (C)		±50ppm	120mΩ ~ 500mΩ	
			1.5W (D)				
			2W (E)				

*Contact NIC regarding availability of values not shown

PART NUMBER SYSTEM



"Y" denotes suitable for automotive equipment, sourced to special production and inspection at TS-16949 certified production site

*Insert appropriate power rating and tolerance codes, Contact NIC regarding availability of other values

THERMAL EMF CHARACTERISTICS:

Mn-Cu Construction: Thermal EMF = -1µV/°C

Ni-Cu Construction: Thermal EMF = -40µV/°C

Ni-Cr Construction: Thermal EMF = -1µV/°C

Operating Voltage: $\sqrt{\text{Power rating (Watts)} \times \text{Resistance (Ohms)}}$

Short Time Overload Voltage: $5 \times \sqrt{\text{Power rating (Watts)} \times \text{Resistance (Ohms)}}$

Operating Current: $\sqrt{\text{Power rating (Watts)} / \text{Resistance (Ohms)}}$



ENVIRONMENTAL CHARACTERISTICS

Item	Specification	Test Method	Reference Standard
	2512		
Temperature Coefficient of Resistance	Within specified value	+25°C ~ +125°C	IEC60115-1 4.8 JIS-C5201 4.8
Load Life	<±1%	1,000 hours at rated power, +70°C, 1.5 hours ON, 0.5 hours OFF	IEC60115-1 4.25.1 JIS-C5201 4.25.1
Short Time Overload	<±0.5%	5 x rated power for 5 seconds	IEC60115-1 4.13 JIS-C5201 4.13
Moisture Resistance (no load)	<±1% (<0.5%)	+85°C, 85% RH, 1000 hours	IEC60115-1 4.24.2 1a JIS-C5201 4.24.2 1a
Temperature Cycling	<±0.5%	-55°C & +155°C (+125°C), 300 cycles, (1000 cycles) 15 minutes at each temperature	IEC60115-1 4.19 JIS-C5201 4.19
Resistance to Soldering Heat	<±0.5%	+260°C ± 5°C for 10 sec. ±1 sec., Two cycles (20 sec. ±1 sec. for 2512 size)	IEC60115-1 4.18 JIS-C5201 4.18
Solderability	At least 95% coverage of electrode surface	+245°C ± 5°C, 2 sec. ± 0.5sec.	IEC60115-1 4.17 JIS-C5201 4.17
High Temperature Exposure	<±1%	(+125°C) +170°C for 1,000 hours	IEC60115-1 4.23.2 JIS-C5201 4.23.2
Low Temperature Storage	<±0.5%	-55°C for 1,000 hours (45 minutes)	IEC60115-1 4.23.4 JIS-C5201 4.23.4
Substrate Bending	<±0.5%	Bending within 2mm	IEC60115-1 4.33 JIS-C5201 4.33
Insulation Resistance	>100MΩ	100VDC for 1 minute	IEC60115-1 4.6 JIS-C5201 4.6
Mechanical Shock	<±0.5%	100g's, 6ms, half sine pulses	N/A
Vibration Resistance	<±0.5%	5g's for 20 minutes, 12 cycles, 10~2000Hz	N/A
Flammability	No flaming drips allowed	Electric test not required	UL-94 V-0 or V-1

NCLP25 (2512 CASE SIZE 1W, 1.5W, 2W and 3W) AVAILABLE VALUES (Ni-Cu)

Part Number	Resistance Value (mΩ)	Available Power Ratings	Available Tolerance	Available TCR
NCLP25__R068TRQYF	68	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R070TRQYF	70	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R075TRQYF	75	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R080TRQYF	80	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R085TRQYF	85	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R090TRQYF	90	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R100TRQYF	100	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm

NCLP25 (2512 CASE SIZE 1W, 1.5W, 2W and 3W) AVAILABLE VALUES (Mn-Cu)

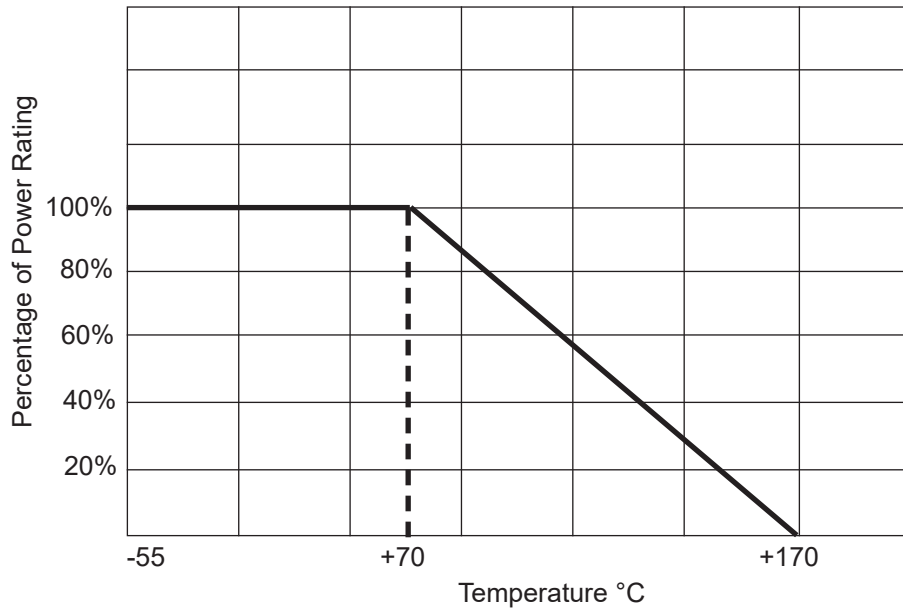
Part Number	Resistance Value (mΩ)	Available Power Ratings	Available Tolerance	Available TCR
NCLP25__R001TRQYF	1.0	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R0011TRQYF	1.1	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R002TRQYF	2.0	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R003TRQYF	3.0	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R005TRQYF	5.0	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R007TRQYF	7.0	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R008TRQYF	8.0	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R010TRQYF	10	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R015TRQYF	15	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R020TRQYF	20	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R027TRQYF	27	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R030TRQYF	30	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R033TRQYF	33	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R050TRQYF	50	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R060TRQYF	60	1W (C), 1.5W (D), 2W (E), 3W (G)	±1% (F), ±2% (G), ±5% (J)	±50ppm



NCLP25 (1W, 1.5W and 2W, 2512 CASE SIZE) AVAILABLE VALUES (Ni-Cr)

Part Number	Resistance Value (mΩ)	Available Power Ratings	Available Tolerance	Available TCR
NCLP25__R120TRQYF	120	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R130TRQYF	130	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R140TRQYF	140	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R150TRQYF	150	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R180TRQYF	180	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R200TRQYF	200	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R220TRQYF	220	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R240TRQYF	240	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R270TRQYF	270	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R280TRQYF	280	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R300TRQYF	300	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R400TRQYF	400	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm
NCLP25__R500TRQYF	500	1W (C), 1.5W (D), 2W (E)	±1% (F), ±2% (G), ±5% (J)	±50ppm

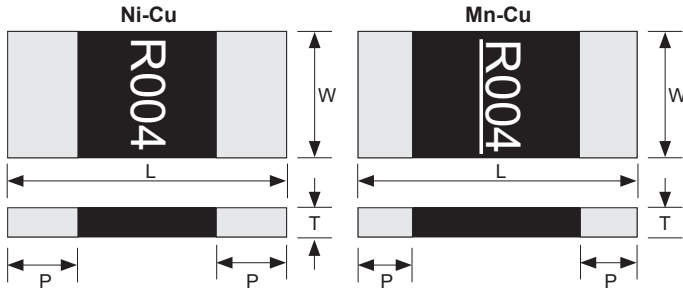
Power Derating Curve: For operation above 70°C, power rating must be derated according to the following chart:



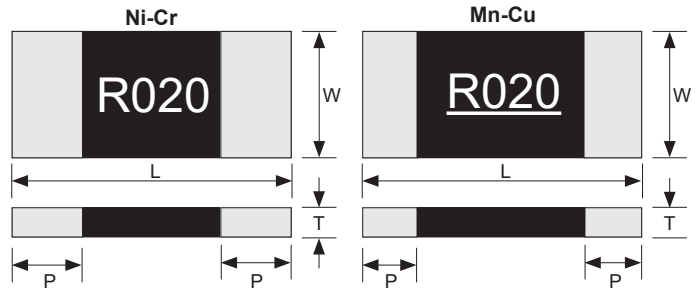
DIMENSIONS AND PART MARKING

Case Size		L	W	T	P
2512	R ≤ 4mΩ	6.4 ± 0.2	3.2 ± 0.2	0.7 ± 0.2	2.2 ± 0.2
	R > 4mΩ				0.9 ± 0.2

Marking for Values ≤ 4mΩ



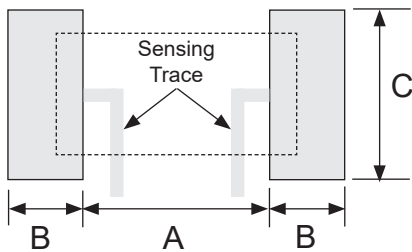
Marking for Values > 4mΩ



RECOMMENDED LAND PATTERN DIM. (mm)

Case Size		A	B	C
2512	1mΩ ~ 3mΩ	1.3	3.1	4.0
	4mΩ ~ 500mΩ	4.1	2.1	4.0

Reflow Soldering Heat Profile and Limits
 → www.niccomp.com/resource/files/resistive/NIC-ChipR-Reflow-Sept2020-Rev2.pdf
 Wave soldering? – Please review your wave soldering process profile with NIC: tpmg@niccomp.com



EMBOSSED PLASTIC TAPE DIMENSIONS (mm)

Case Size	A	B	K	P	P ₁	E	F	D ₀	D ₁	W	Quantity per Reel
2512	3.6 ± 0.2	6.9 ± 0.2	1.25 ± 0.15	4.0 ± 0.05	4.0 ± 0.1	1.75 ± 0.1	5.5 ± 0.05	1.5 ^{+0.1} / ₀	1.5 min.	12.0 ± 0.2	4,000

