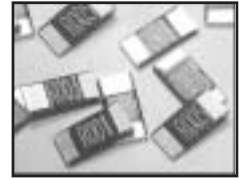


FEATURES

- SURFACE MOUNTABLE 2512 CASE SIZE
- LOW RESISTANCE & LOW INDUCTANCE METAL STRIP CONSTRUCTION
- PRECISION TOLERANCE ($\pm 1\%$) AND TCR ($\pm 50\text{PPM}$) TO $+170^\circ\text{C}$
- TAPED & REEL PACKAGING FOR EASY PICK AND PLACE)

**RoHS
Compliant**

includes all homogeneous materials



*See Part Number System for Details

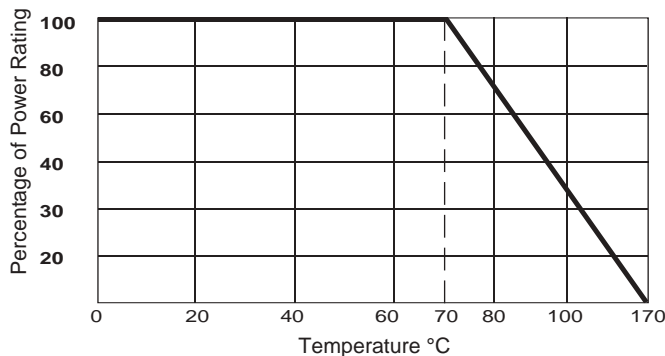
SPECIFICATIONS

Type	EIA Size	Power Rating at 70°C	Resistance Tolerance (Code)	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature Range (°C)
NCSR	2512	1 ~ 3 Watt	$\pm 1\%$ (F) $\pm 3\%$ (H) $\pm 5\%$ (J)	± 50 (D) ± 75 (W) ± 100 (E) ± 150 (K)	0.50m Ω ~ 22m Ω	-55°C ~ +170°C

ENVIRONMENTAL CHARACTERISTICS

Item	Specification	Test Method
Temperature Coefficient of Resistance	As Specified	MIL-STD-202, Method 304 +25/-55/+25/+125/+25°C
Thermal Shock	$\pm 0.5\%$	MIL-STD-202, Method 107G -55°C ~ +150°C, 100 cycles
Short Time Overload	$\pm 0.5\%$	JIS-C-5202-5.5 RCWV x 2.5 or Max. Overloading Voltage for 5 sec.
Resistance to dry heat	$\pm 1\%$	JIS-C-5202-7.2 96 hrs @ 155°C without load
Load Life	$\pm 1\%$	MIL-STD-202 Method 108 RCWV @ 70°C, cycles of 1.5 hours on, 0.5 hrs off for 1,000 ~ 1,048 hrs
Resistance to Soldering Heat	$\pm 0.5\%$	MIL-STD-202F Method 210E 260°C $\pm 5^\circ\text{C}$ for 10 sec. ± 1 sec.
Solderability	95% min. coverage	MIL-STD-202F Method 208H 235°C $\pm 5^\circ\text{C}$ for 2 sec. ± 0.5 sec.

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

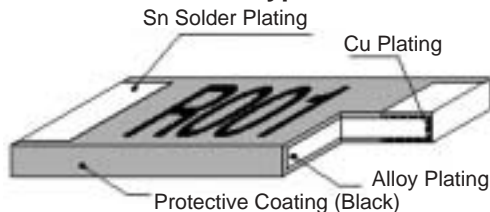


PART NUMBER SYSTEM

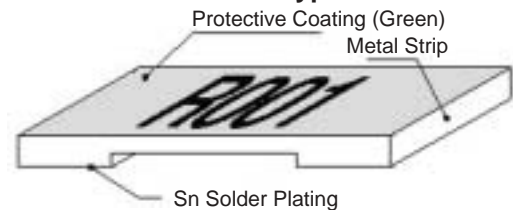
NCSR 100 F R015 K TR G E

- Series
- Power Rating (100 = 1W, 200 = 2W, 250=2.5W and 300 = 3W)
- Tolerance Code: J=5%, H=3%, F=1%
- Resistance Code: See Values Tables
- TCR Code: D=50ppm, W=75ppm, E=100ppm, K=150ppm
- Packaging: TR = Tape & Reel
- Case Type (G = Case 2)
- RoHS compliant

Case Type 1



Case Type 2



NCSR100 (1 WATT) AVAILABLE VALUES

Part Number	Resistance Value (mΩ)	Available Tolerance	Available TCR	Length (L)	Width (W)	Thickness (T)	Termination Width (P)	Case Type	
NCSR100*M50DTRF	0.50	±1% (F) ±3% (H) ±5% (J)	±50ppm (D)	6.35 ±0.25	3.18 ±0.25	1.40 ± 0.20	1.30 ±0.30	1	
NCSR100*M75DTRF	0.75					1.00 ± 0.20			
NCSR100*R001DTRF	1.0					0.80 ± 0.80			
NCSR100*1M50DTRF	1.5					0.65 ± 0.20			
NCSR100*R002DTRF	2.0					0.50 ± 0.20			
NCSR100*2M50KTRF	2.5					±150ppm (K)			1.00 ± 0.20
NCSR100*R003KTRF	3.0		0.70 ± 0.20						
NCSR100*3M50KTRF	3.5		0.71 ± 0.20						
NCSR100*R004ETRF	4.0		±100ppm (E)			0.60 ± 0.20			
NCSR100*4M50ETRF	4.5					0.58 ± 0.20			
NCSR100*R005ETRF	5.0					0.50 ± 0.20			
NCSR100*5M50ETRF	5.5					0.47 ± 0.20			
NCSR100*R006WTRF	6.0			0.50 ± 0.20					
NCSR100*6M50WTRF	6.5		±75ppm (W)	0.47 ± 0.20					
NCSR100*R007WTRF	7.0			0.45 ± 0.20					
NCSR100*R008WTRF	8.0			0.45 ± 0.20					
NCSR100*R010WTRF	10				6.50 ± 0.25	3.20 ± 0.25	0.80 ± 0.15	1.90 ± 0.15	
NCSR100*R011DTRGF	11		±50ppm (D)	±50ppm (D)	6.35 ± 0.25	3.18 ± 0.35	0.60 ± 0.20	1.93 ± 0.75	2
NCSR100*R012DTRGF	12								
NCSR100*R013DTRGF	13								
NCSR100*R014DTRGF	14								
NCSR100*R015DTRGF	15								
NCSR100*R016DTRGF	16								
NCSR100*R017DTRGF	17								
NCSR100*R018DTRGF	18								
NCSR100*R019DTRGF	19								
NCSR100*R020DTRGF	20								
NCSR100*R021DTRGF	21								
NCSR100*R022DTRGF	22								

NCSR200 (2 WATT) AVAILABLE VALUES

Part Number	Resistance Value (mΩ)	Available Tolerance	Available TCR	Length (L)	Width (W)	Thickness (T)	Termination Width (P)	Case Type
NCSR200*M50DTRF	0.50	±1% (F) ±3% (H) ±5% (J)	±50ppm (D)	6.35 ±0.25	3.18 ±0.35	1.4 ±0.20	1.30 ± 0.30	1
NCSR200*M75DTRF	0.75					1.0 ± 0.20		
NCSR200*R001DTRF	1.0					0.8 ± 0.20		
NCSR200*1M50DTRF	1.5					0.65 ± 0.20		
NCSR200*R002DTRF	2.0					0.5 ± 0.20		
NCSR200*R007DTRGF	7.0					0.6 ± 0.20	1.93 ±0.75	2
NCSR200*7M50DTRGF	7.5							
NCSR200*R008DTRGF	8.0							
NCSR200*8M50DTRGF	8.5							
NCSR200*R009DTRGF	9.0							
NCSR200*9M50DTRGF	9.5							
NCSR200*R010DTRGF	10							

* Insert appropriate tolerance code



NCSR250 (2.5 WATT) AVAILABLE VALUES

Part Number	Resistance Value (mΩ)	Available Tolerance	Available TCR	Length (L)	Width (W)	Thickness (T)	Termination Width (P)	Case Type
NCSR250*R004DTRGF	4.0	±1% (F) ±3% (H) ±5% (J)	±50ppm (D)	6.35 ±0.25	3.18 ±0.35	0.60 ±0.20	1.93 ±0.75	2
NCSR250*4M50DTRGF	4.5							
NCSR250*R005DTRGF	5.0							
NCSR250*5M50DTRGF	5.5							
NCSR250*R006DTRGF	6.0							
NCSR250*6M50DTRGF	6.5							

* Insert appropriate tolerance code

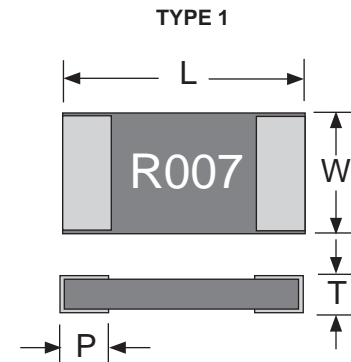
NCSR300 (3 WATT) AVAILABLE VALUES

Part Number	Resistance Value (mΩ)	Available Tolerance	Available TCR	Length (L)	Width (W)	Thickness (T)	Termination Width (P)	Case Type
NCSR300*M50ETRGF	0.50	±1% (F) ±3% (H) ±5% (J)	±100ppm (E)	6.35 ±0.25	3.18 ±0.35	1.00 ±0.20	1.93 ±0.75	2
NCSR300*M75ETRGF	0.75		±50ppm (D)			0.60 ±0.20		
NCSR300*R001DTRGF	1.0							
NCSR300*1M50DTRGF	1.5							
NCSR300*R002DTRGF	2.0							
NCSR300*2M50DTRGF	2.5							
NCSR300*R003WTRGF	3.0		±75ppm (W)					

* Insert appropriate tolerance code

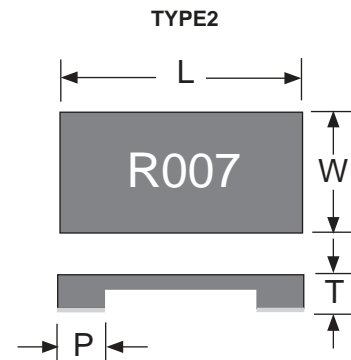
TYPE 1 DIMENSIONS (mm)

Length (L) ±0.25	Width (W) ±0.25	Thickness (T) ±0.2	Termination Width (P) ±0.3	Resistance Value mΩ
6.35	3.18	1.40	1.30	0.50
		1.00		0.75
		0.80		1.00
		0.65		1.50
		0.50		2.00
		1.00		2.50
		0.70		3.00
		0.60		4.00
		0.50		5.00
		0.50		6.00
		0.45		7.00
6.50	3.20	0.8	1.90	8.00
				9.00
				10.00

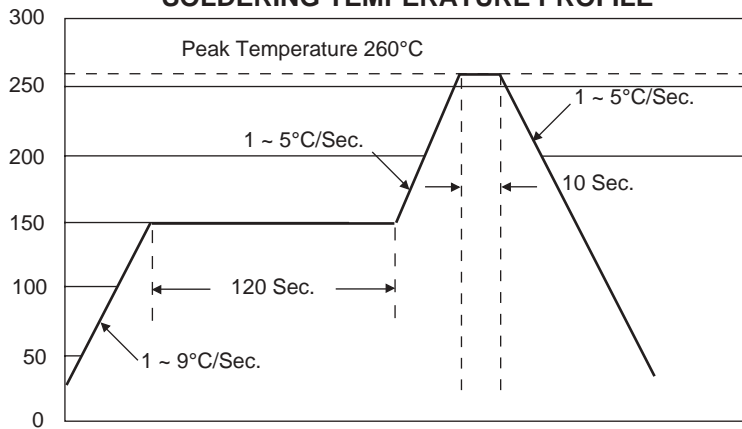


TYPE 2 DIMENSIONS (mm)

Length (L) ±0.25	Width (W) ±0.25	Thickness (T) ±0.2	Termination Width (P) ±0.3	Resistance Value mΩ
6.35	3.18	0.6	1.93	1 ~ 20
		1.0		0.5 ~ 0.75

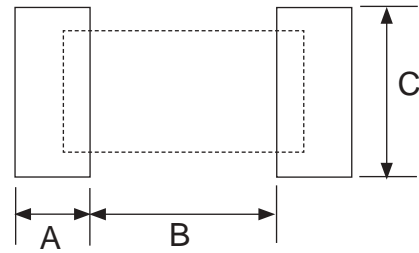


RECOMMENDED REFLOW SOLDERING TEMPERATURE PROFILE



LAND PATTERN DIM. (mm)

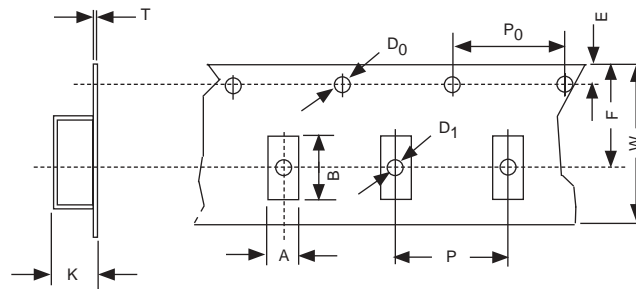
A	B	C
1.6	4.9	3.0 ±0.2



TAPE DIMENSIONS (mm)

A	B	K	P0	P1	P2
3.40 ±0.1	6.75 ±0.1	0.80 ±0.1	4.0 ±0.1	4.0 ±0.1	2.0 ±0.05
T	E	F	D0	D1	W
0.25 ±0.1	1.75 ±0.1	5.50 ±0.05	1.55 ±0.05	1.5 min.	12.0 ±0.3

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[NRLF103M25V35X20F](#) [NRLMW682M50V30X40F](#) [NDTM106K35F](#) [NRLMW102M200V35X35F](#) [NPIS43LS220MTRF](#) [NTC-
T475K50TRDF](#) [NCD222M1KVZ5UKF](#) [NRLR472M63V25X40SF](#) [NTP157M10TRD\(40\)F](#) [NPIM74C3R3MTRF](#) [NPI104C100MTRF](#)
[NEXC474Z3.5V10.5X8.5TRF](#) [NRLM102M100V25X25F](#) [NACZ331M35V10X10.5TR13F](#) [NRLM223M50V 35X50F](#)
[NAZT221M50V10X10.5LBF](#)