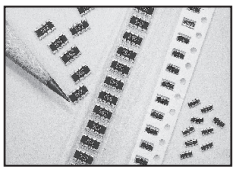
NRSNE Series
Surface Mount Chip Resistor Arrays



FEATURES
- ULTRA MINIATURE SIZE AND LOW PROFILE
- THICK FILM CONSTRUCTION
- HIGH DENSITY PACKAGING OFFERS SIGNIFICANT SPACE SAVINGS
- REFLOW SOLDERING COMPATIBLE

SPECIFICATIONS

Type	NRSNE2I2			NRSNE2I4	
Termination Type	Flat			Flat	
Size W x L (mm)	0.6 x 0.8			0.6 x 1.4	
No. of Resistors & Circuit	2R Isolated			4R Isolated	
Power Rating per Resistor @ +70°C	1/32 (.031W)			1/32 (.031W)	
Resistance Tolerance*	F (±1%)	J (±5%)		F (±1%)	J (±5%)
Resistance Range	10Ω ~ 1MΩ	3.0Ω ~ 9.1Ω	10Ω ~ 1MΩ	10Ω ~ 1MΩ	10Ω ~ 1MΩ
	0Ω (<50mΩ) 0.5A			0Ω (<50mΩ) 0.5A	
Temperature Coeffieient	±200ppm	±300ppm	±200ppm	±200ppm	±200ppm
Maximum Working Voltage*	12.5V				
Maximum Overload Voltage**	25V				
Operating Temperature Range	-55°C ~ +125°C				

Type	NRSNE4I2		NRSNE4I4		NRSNE6I4	
Termination Type	Flat		Flat		Flat	
Size W x L (mm)	1.0 x 1.2		1.0 x 2.0		1.55 x 3.2	
No. of Resistors & Circuit	2R Isolated		4R Isolated		4R Isolated	
Power Rating per Resistor @ +70°C	1/16 (.0625W)		1/16 (0.0625W)		1/8 (0.125W)	
Resistance Tolerance*	F (±1%)	J (±5%)	F (±1%)	J (±5%)	F (±1%)	J (±5%)
Resistance Range	1.0Ω ~ 1MΩ		10Ω ~ 1MΩ	1.0Ω ~ 10MΩ	10Ω ~ 1MΩ	1.0Ω ~ 10MΩ
	0Ω (<50mΩ) 1A		0Ω (<50mΩ) 1A		0Ω (<50mΩ) 1A	
Temperature Coeffieient	±200ppm		±200ppm		±200ppm	
Maximum Working Voltage*	25V		50V		50V	
Maximum Overload Voltage**	50V		100V		100V	
Operating Temperature Range	-55°C ~ +155°C		-55°C ~ +155°C		-55°C ~ +155°C	

* Maximum allowable continuous voltage for all resistors is the lower of the two values: "MAXIMUM WORKING VOLTAGE" as specified, or $\sqrt{\text{Power rating (WATTS) x Resistance (OHMS)}}$

** Maximum overload voltage is 2.5x rated voltage based on calculation referenced above or maximum overload voltage as specified in specifications table, whichever is lower.

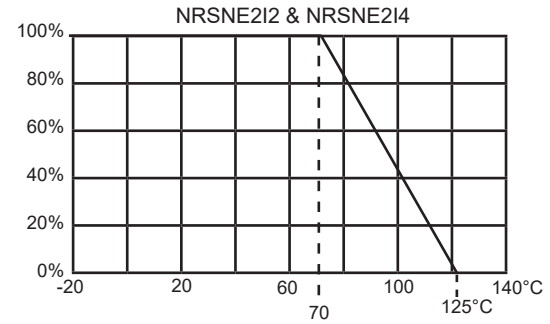
PART NUMBER SYSTEM (E-24 VALUES)

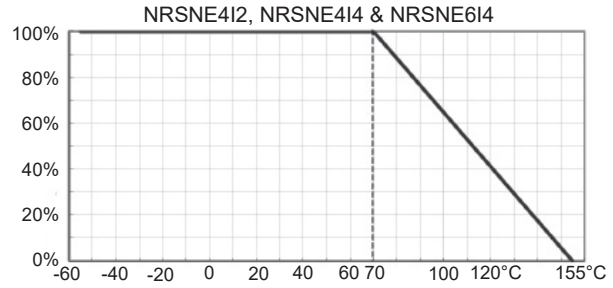
NRSNE 2I2 J 103 TR F
- F — RoHS compliant
- TR — Tape & Reel Packaging
- 103 — Resistance Code: First 2 figures are significant, 3rd digit is the multiplier, "R" indicates a decimal point.
- J — Tolerance Code: J=5%
- 2I2 — Configuration Designator
- NRSNE — Series

PART NUMBER SYSTEM (E-96 VALUES)

NRSNE 2I2 J 1002 TR F
- F — RoHS compliant
- TR — Tape & Reel Packaging
- 1002 — Resistance Code: First 2 figures are significant, 3rd digit is the multiplier, "R" indicates a decimal point.
- J — Tolerance Code: F=1%
- 2I2 — Configuration Designator
- NRSNE — Series

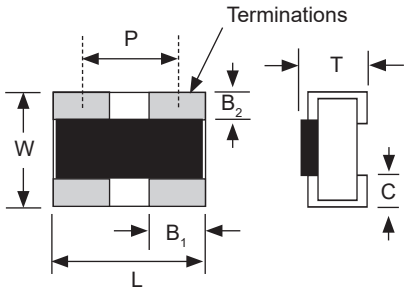
Power Derating Curve:
For operation above 70°C, power rating must be derated according to the following chart:



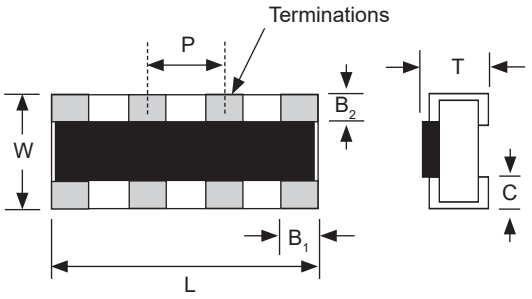


COMPONENT DIMENSIONS (mm)

Type	W	L	P	T	B_1	B_2	C
NRSNE2I2	0.60 ± 0.10	0.80 ± 0.10	0.50 ± 0.10	0.35 ± 0.10	0.30 ± 0.10	0.15 ± 0.10	0.15 ± 0.10
NRSNE2I4	0.60 ± 0.10	1.40 ± 0.10	0.40 ± 0.10	0.35 ± 0.10	0.20 ± 0.10	0.10 ± 0.07	0.15 ± 0.10
NRSNE4I2	1.00 ± 0.10	1.20 ± 0.10	0.82 ± 0.05	0.35 ± 0.10	0.43 ± 0.10	0.22 ± 0.10	0.30 ± 0.15
NRSNE4I4	1.00 ± 0.10	2.00 ± 0.10	0.50 ± 0.10	0.45 ± 0.10	0.35 ± 0.10	0.20 ± 0.10	0.35 ± 0.15
NRSNE6I4	1.55 ± 0.10	3.20 ± 0.10	0.80 ± 0.05	0.55 ± 0.10	0.45 ± 0.15	0.20 ± 0.10	0.47 ± 0.15



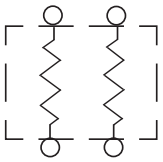
NRSNE2I2, NRSNE4I2



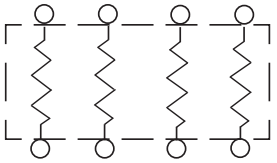
NRSNE2I4, NRSNE4I4, NRSNE6I4

CIRCUIT SCHEMATICS

NRSNE2I2, NRSNE4I2
4 Terminal Isolated

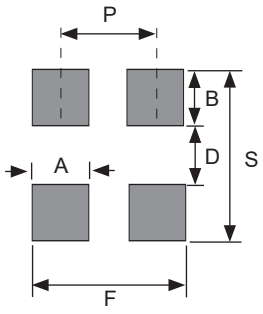


NRSNE2I4, NRSNE4I4, NRSNE6I4
8 Terminal Isolated

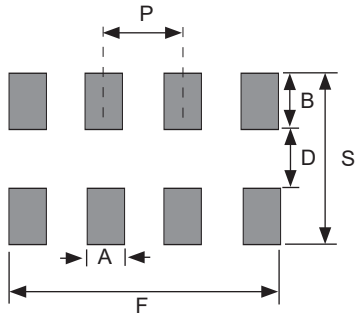


RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Type	Reflow Soldering					
	A	B	D	P	S	F
NRSNE2I2	0.30	0.30	0.30	0.50	0.90	0.80
NRSNE2I4	0.20	0.30	0.30	0.40	0.90	1.40
NRSNE4I2	0.35	0.45	0.35	0.80	1.25	1.50
NRSNE4I4	0.30	0.65	0.50	0.50	1.80	2.10
NRSNE6I4	0.45	1.03	0.80	0.80	2.85	3.10



NRSNE2I2, NRSNE4I2

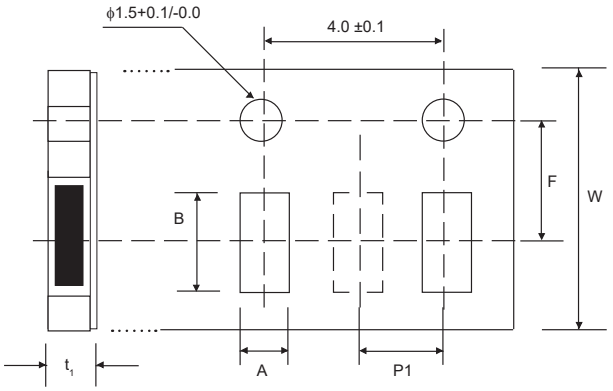


NRSNE2I4, NRSNE4I4, NRSNE6I4

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

TAPE DIMENSIONS (mm)

Type	Material	A ± 0.10	B ± 0.10	F	p1 ± 0.05	W ± 0.20	t_1 ±0.10
NRSNE2I2	Paper	0.70	0.90	3.50 ± 0.05	2.00	8.00	0.50
NRSNE2I4		0.70	1.50	3.50 ± 0.05	2.00	8.00	0.50
NRSNE4I2		1.20	1.45	1.75 ± 0.10	2.00	8.00	0.43
NRSNE4I4		1.20	2.20	1.75 ± 0.10	2.00	8.00	0.70
NRSNE6I4		1.95	3.50	1.75 ± 0.10	4.00	8.00	0.85



REEL DIMENSIONS (mm)

Type	A	B	C	D	W	Qty/Reel
NRSNE2I2 NRSNE2I4	ϕ178.5 ±0.15	ϕ60 -0.0/+1.0	ϕ13.0 ±0.2	ϕ21.0 ±0.8	9.0 ±0.5	10,000
NRSNE4I2 NRSNE4I4						10,000
NRSNE6I4						5,000