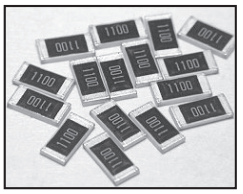
NRCE Series
Thick Film Chip Resistors

9001:2015 CERTIFIED

ROHS/REACH COMPLIANT HALOGEN FREE

NIC Components Corp.

FEATURES



- **EXTENDED VALUE RANGE** (47MΩ ~ 4.7GΩ)
- EIA STANDARD SIZING 0603, 0805 and 1206
- METAL GLAZED THICK FILM ON HIGH PURITY ALUMINA SUBSTRATE (CERMET) PROVIDES UNIFORM QUALITY AND HIGH RELIABILITY
- DOUBLE GLASS OVERCOAT ASSURES STRONG MECHANICAL CONTRUCTION AND LONG LIFE, NICKEL BARRIER PREVENTS LEACHING
- ALL SIZES ARE AVAILABLE IN TAPE/REEL FOR AUTOMATIC MOUNTING
- BOTH FLOW SOLDER AND REFLOW SOLDERING ARE APPLICABLE

SPECIFICATIONS

Type	EIA Size	Power Rating at 70°C	Max. *1 Working Voltage	Max. *2 Overload Voltage	Resistance Tolerance Code	Temperature Coefficient (ppm/°C)	Resistance Range (Ω)	Resistance Value	Operating Temperature Range
NRCE06	0603	1/16 (0.063) W	50V	100V	±10%(K), ±20%(M)	±500	47MΩ ~ 1GΩ	E-12	-55°C ~ +125°C
NRCE10	0805	1/10 (0.10) W	150V	300V	±10%(K), ±20%(M)	±500	47MΩ ~ 1GΩ		
						±1500	1.2GΩ ~ 4.7GΩ		
NRCE12	1206	1/8 (0.125) W	200V	400V	±10%(K), ±20%(M)	±500	47MΩ ~ 1GΩ		
						±1500	1.2GΩ ~ 4.7GΩ		

Note *1 - Maximum allowable continuous Working Voltage for all resistors is the lower of the two values: "Maximum Working Voltage" as specified above (or)

$$\sqrt{\text{Power rating (Watts) x Resistance (Ohms)}}$$

Note *2 - Maximum allowable Overload voltage is two times the Maximum Working Voltage (see Note *1 above).

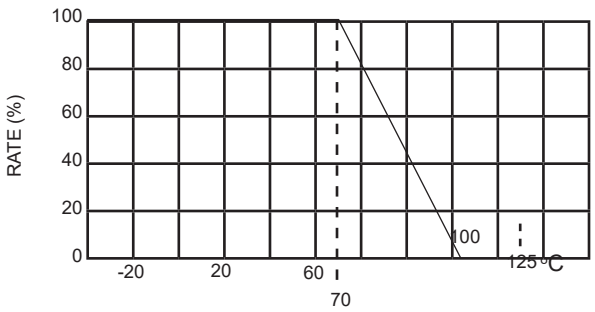
Please note, NIC's NRCE series products are capable of meeting the following specifications: JIS-C 5202, EIAJ RC-2690, EIA575, EIA PDP-100, MIL-R-5542D and UL94V-0.

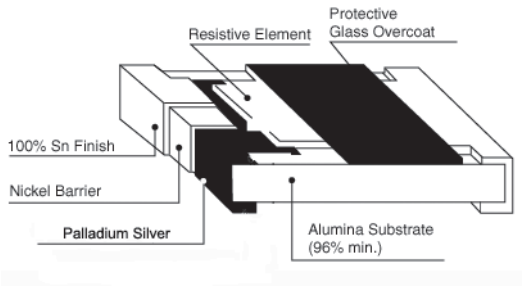
PART NUMBER SYSTEM (E-12 VALUES)

NRCE12 K 476 TR 10 F

- F — RoHS Compliant
- 10 — Optional 10,000 Piece reel
- TR — Tape & Reel Packaging
- 476 — Resistance Code: First 2 figures are significant, 3rd digit is the multiplier, "R" indicates a decimal point.
- K — Tolerance Code: M=20%, K=10%
- NRCE12 — Series and Size

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





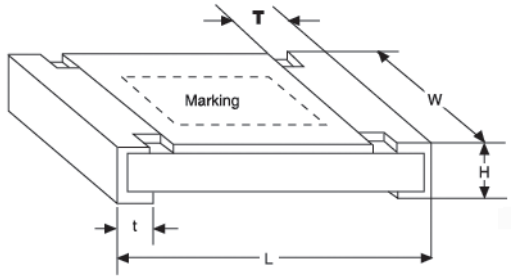
CONSTRUCTION

***Note: Lead Free terminations also available.**
See part numbering system (page 2) for ordering instructions

DIMENSIONS (mm)

Type	EIA Size	L	W	H	T	t
NRCE06	0603	1.60 ± 0.15	0.80 ± 0.15	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20
NRCE10	0805	2.00 ± 0.20	1.25 ± 0.10	0.50 ± 0.10	0.40 ± 0.20	0.40 ± 0.20
NRCE12	1206	3.10 ± 0.15	1.55 ± 0.15	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.30

Note: For details on construction see the NRC Series data sheet



Marking
E-12 Series: Tolerances are ±20% (M), ±10% (K)
3 DIGIT SYSTEM - First 2 digits are significant and 3rd digit is multiplier.

Examples: 686 =68Meg ohms, 827 = 820Meg ohms, 108 = 1Gig ohms

STANDARD E-12 VALUES

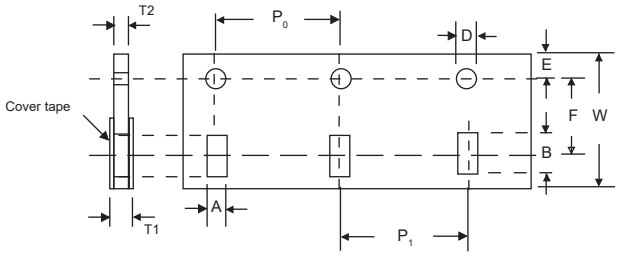
E-12 Value
10
12
15
18
22
27
33
39
47
56
68
82
91

TAPING SPECIFICATIONS

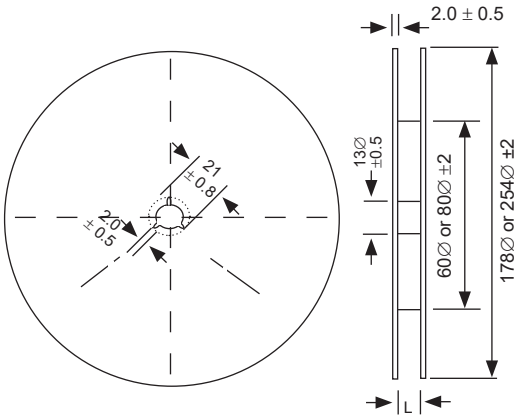
Type	Power Rating	EIA Size	Carrier Tape			Qty per 7" Reel	Qty per 10" Reel
			Fig.	Material	Width (mm)		
NRC06	1/16W	0603	A	Paper	8	5,000	10,000
NRC10	1/10W	0805	A	Paper	8	5,000	10,000
NRC12	1/8W	1206	A	Paper	8	5,000	10.000

CARRIER DIMENSIONS (mm)

Type	EIA Size	A	B	D	E	F	P_o	P_1	T_1	T_2	W
NRC06	0603	1.135 ± 0.05	1.95 ± 0.05	1.5 + 0.1	1.75 ± 0.1	3.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.05	1.1 max.	1.0 max.	8.0 ± 0.2
NRC10	0805	1.65 ±0.2	2.4 ±0.2								
NRC12	1206	2.0 ±0.2	3.6 ±0.2								



REEL SPECIFICATIONS



1. Leader tape : Approximately 250 m/m leader shall be provided at each end of the tape.

2. Accumulative tolerance of feeding hole and chip pocket shall not exceed 0.2mm over 10 pitches.

Type	EIA Size	L (mm)
NRC06	0603	10.0 ±1.5
NRC10	0805	10.0 ±1.5
NRC12	1206	10.0 ±1.5