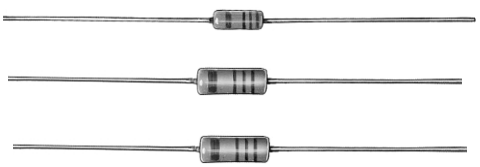
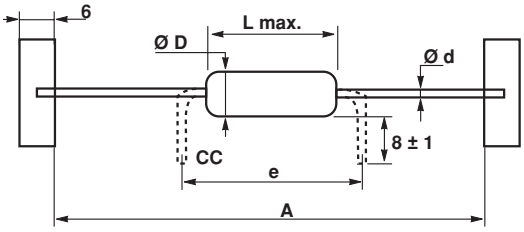
High Precision Metal Film Resistors



FEATURES

- 0.125W to 0.5W at 70°C
- NFC 83-230/CECC 40 100
- ESA-SCC 4001
- LN2/GAM-T-1
- Wide ohmic range
- Good initial precision
- Operating temperatures: – 55°C to + 155°C
  – 25°C to + 85°C for T.C.R. ≤ ± 15ppm/°C
- Protection: "SPINSEAL®" epoxy

DIMENSIONS in millimeters



TYPE	Ø D max.	L max.	A ± 1	Ø d	CC e	MAX. UNIT WEIGHT
N.. 3..	1.8	3.9	53	0.5	5.08	0.15g
N.. 4..	2.5	6.2	53	0.6	NA	0.3g
N.. 5..	3.3	8.7	53	0.6	NA	0.5g

TECHNICAL SPECIFICATIONS

MODEL		NT3S	NP3S	NY3	NK3	NT4S	NP4S	NY4	NK4	N4	NT5S	NP5S	NY5	NK5	N5
Power Rating at + 70°C		0.125W	0.25W			0.25W	0.5W				0.5W				
Ohmic Value Range in Relation to : Temperature Coefficient of Resistance, Tolerance	± 15 ppm/°C ± 0.1%	100Ω 200KΩ E 192		–	–	49.9Ω 499KΩ E 96 E 192			–	–	100Ω 499KΩ E 96 E 192			–	–
	± 15 ppm/°C ± 0.25%														
	± 15 ppm/°C ± 0,5 %	10Ω 200KΩ E 96 E 192			–	10Ω 499KΩ E 96 E 192			–	–	10Ω 499KΩ E 96 E 192			–	–
	± 15 ppm/°C ± 1%														
	± 25 ppm/°C ± 0.1%	–	100Ω 511KΩ E 192		–	–	10Ω 1MΩ E 96 E 192		–	–	–	100Ω 1MΩ E 96 E 192		–	–
	± 25 ppm/°C ± 0.25%														
	± 25 ppm/°C ± 0.5%	–	10Ω 511KΩ E 96 E 192		–	–	10Ω 1MΩ E 96 E 192		–	–	–	10Ω 1MΩ E 96 E 192		–	–
	± 25 ppm/°C ± 1%														
	± 50 ppm/°C ± 0.1%	–	–	–	–	–	–	10Ω 1MΩ E 192	–	–	–	–	10Ω 1MΩ E 192		–
	± 50 ppm/°C ± 0.25%														
	± 50 ppm/°C ± 0.5%	–	–	10Ω 1.5MΩ E 192		–	–	10Ω 4.7MΩ E 192		–	–	–	10Ω 4.7MΩ E 192		–
	± 50 ppm/°C ± 1%	–	–	1Ω 1.5MΩ E 96		–	–	1Ω 4.7MΩ E 96		–	–	–	3.01Ω 4.7MΩ E 96		–
	± 100 ppm/°C ± 1%	–	–	–	1Ω 1.5MΩ E 96	–	–	–	–	–	–	–	–	–	–
	± 100 ppm/°C ± 2%	–	–	–	1Ω 1.5MΩ E 24	–	–	–	1Ω 4.7MΩ E 24		–	–	–	2.7Ω 4.7MΩ E 24	
	± 100 ppm/°C ± 5%														
	± 200 ppm/°C ± 2%	–	–	–	–	–	–	–	–	1Ω 4.7MΩ E 24	–	–	–	–	2.7Ω 4.7MΩ E 24
	± 200 ppm/°C ± 5%														
Limiting Element Voltage V_{RMS}		200V				350V					350V				
Critical Resistance		–	–	160kΩ		490kΩ	245kΩ				245kΩ				
Thermal Resistance		170°C/W				145°C/W					110°C/W				

OFFICIAL APPROVAL AND PREFERENTIAL LISTS

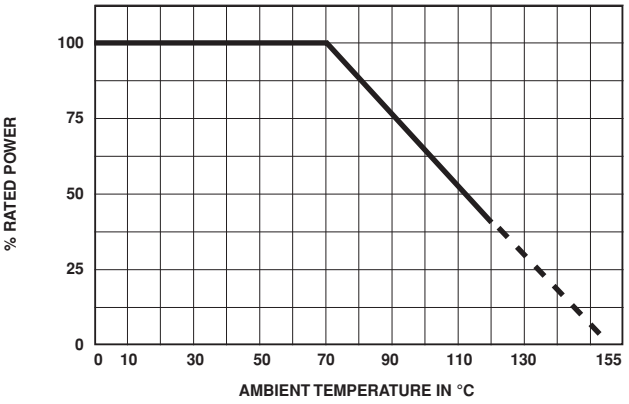
SERIES AND MODEL	SPECIFICATION	DESIGNATION	CECC REFERENCE	QUALIFIED RANGE	TOL ± %	PN AT + 70°C W	PREFERENTIAL LISTS			
							BT	CCQ	CNET	GAM
NY3	40 101-002	RS 59Y	EY	10Ω 301kΩ	1	0.125		•	•	
	002	RS 48Y	AY			0.063		•	•	•
	803	AC	–			0.063		•		
NK3	40 101-001	RC 9	DU	10Ω 510kΩ	2 - 5	0.250		•		
	001	RC 8U	AU			0.125		•	•	•
	002	RS 48K	AK	10Ω 301kΩ	1	0.063		•	•	•
	019	GZ / GX	–			0.125	91G	•		
	802	AV	–	10Ω 150kΩ	2 - 5	0.125		•		
	40101-002	AK	–		1	0.063		•		
NP4S	40 101-002	RS 71P	–	100Ω 1MΩ	0.5 - 1	0.500		•		
	002	RS 64P	FP			0.250		•	•	
	002	RS 58P	BP			0.125		•	•	
NY4	40 101-002	RS 71Y	GY	10Ω 1MΩ	0.5 - 1	0.500		•		
	002	RS 64Y	FY			0.250		•	•	•
	002	RS 58Y	BY			0.125		•	•	•
	803	BC	–			0.125		•		
NK4	40 101-001	RC 32	EU	10Ω 1MΩ	2 - 5	0.5		•	•	•
	001	RC 21U	BU			0.25		•	•	•
	802	BV	–			0.25		•		
N4	40 101-003	RC 30	CU	10Ω 1MΩ	2 - 5	0.5		•	•	
	003	RC 2T	–	10Ω 1MΩ		0.25		•	•	
	801	BD	BD	10Ω 100kΩ		0.25		•		
		BA	BA	105kΩ 1MΩ		0.25		•		
NY5	40 101-002	RS 69Y	HY	10Ω 1MΩ	0.5 - 1	0.5		•		
	002	RS 63Y	CY			0.25		•	•	•
	803	CC	–			0.25		•		
NK5	40 101-001	RC 31U	CU	10Ω 1MΩ	2 - 5	0.5		•	•	•
	802	CV	–					•		
N5	40 101-003	RC 3T	BU	10Ω 1MΩ	2 - 5	0.5		•		
	801	CD	CD	1 0Ω 300kΩ				•		
		CA	CA	301kΩ 1MΩ				•		

PERFORMANCE

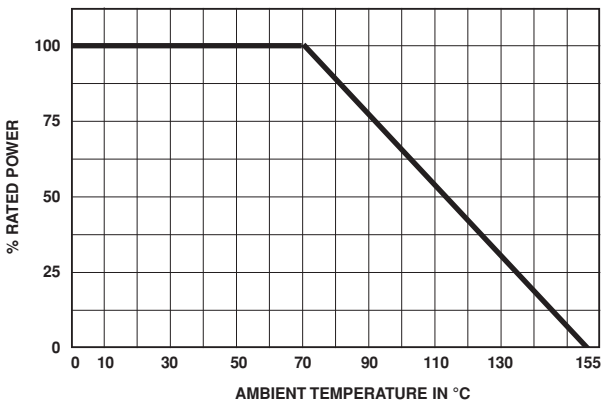
TEST	CONDITIONS	TYPICAL VALUES AND DRIFTS
Load Life at maximum Category Temperature	1000h at 155°C IEC 115-1 4.25.3	≤ ± 0.2%
Short Time Overload	2.5Pn or 2Un 2s for N..3.. 5s for > N3 IEC 115-1 4.13	≤ ± 0.02%
Damp Heat Humidity (Steady State)	56 days with low load IEC 115-1 IEC 68-2-3	≤ ± 0.2%
Rapid Temperature Change	IEC 115-1 4.16 IEC 68-2.14	≤ ± 0.04%
Climatic Sequence	dry heat damp heat cycle cold low pressure IEC 115-1 4.23	≤ ± 0.1%
Terminal Strength	pull - twist - 2 bands	≤ ± 0.01%
Vibration	10 - 500Hz 10g	≤ ± 0.01%
Soldering (Thermal Shock)	+ 260°C 10 s	≤ ± 0.05%
Load Life	1000 h at 70°C cycle 90'/30' IEC 115-1 4.25.1	≤ ± 0.15%
Shelf Life	1 year ambient temperature	≤ ± 0.1%

POWER RATING CHARTS

CECC 40 101-001/019 NK3/NK5

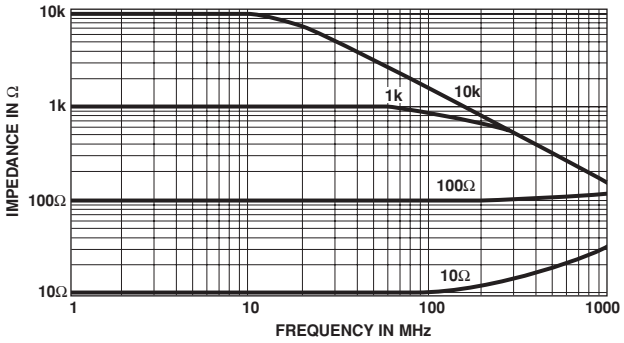


CECC 40 101-003 N4/N5



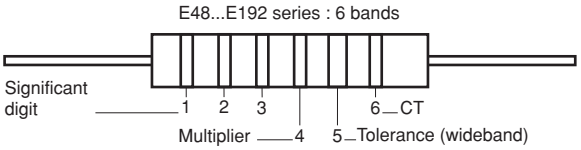
HIGH FREQUENCY

Typical behavior for NK4

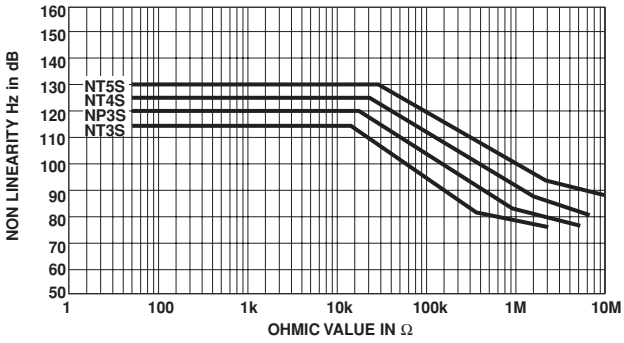


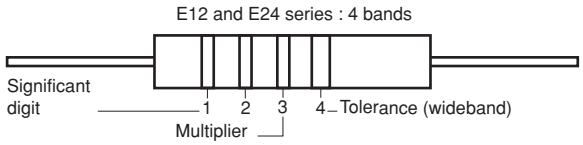
MARKING

Resistor color code chart 6, 5 or 4 bands.

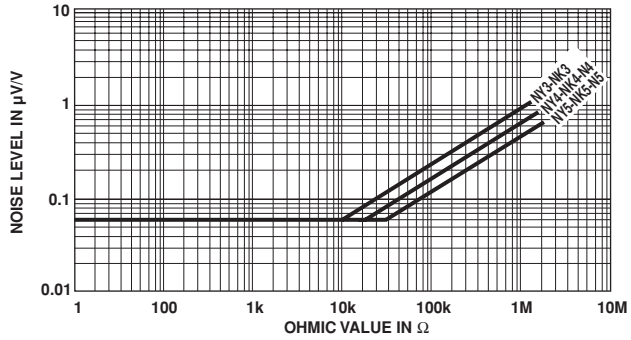


THIRD HARMONIQUE





NOISE



COLOR	DIGIT.	MULTIP.	TOL.%	CT ppm/°C
Black	0	1		
Brown	1	10	1	
Red	2	10^2	2	
Orange	3	10^3		± 15
Yellow	4	10^4		± 25
Green	5	10^5	0.5	
Blue	6	10^6	0.25	± 10
Purple	7	10^7	0.1	± 5
Grey	8	10^8		
White	9	10^9		
Silver		10^{-2}		
Gold		10^{-1}	5	

TAPE AND REEL

SERIES AND MODEL	QUANTITY PER REEL
NT3S/NP3S	5000
NK/NY3	5000
NT4S/NP4S	5000
NK4/N4/NY4	5000
NT5S/NP5S	2500
NK5/N5	2500
SL3	5000
SL4	5000

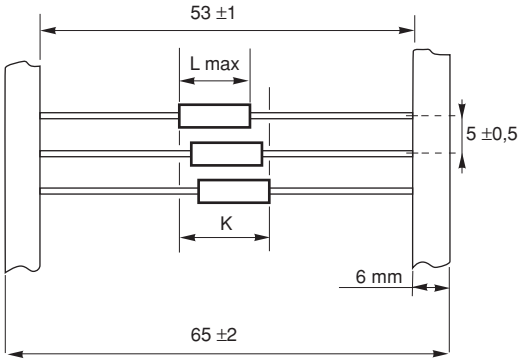
TAPED IN AMMOPACK

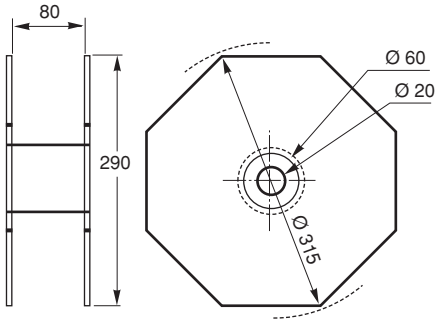
SERIES AND MODEL	QUANTITY PER BOX	BOX DIMENSIONS L x l x H MM^3
NT3S/NP3S	500	260 x 80 x 28
NY3	500	
NY3	1000	
NK3	1000	
NT4S/NP4S	500	
NY4	500	
NY4	1000	340 x 95 x 90
NK4/N4	1000	260 x 80 x 37
NK4/N4	1000	340 x 85 x 90
NT5S/NP5S	500	260 x 85 x 28
NY5	500	
N5/NK5	500	

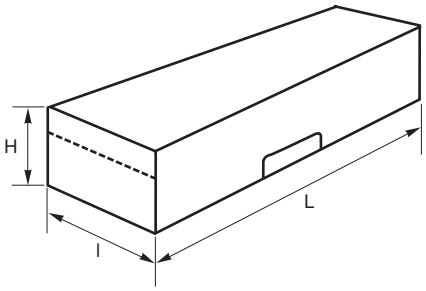
TAPED IN BAG

SERIES AND MODEL	QUANTITY PER BAG	BAG DIMENSIONS mm^2
NP3S/NT3S	100	85 x 140
NP4S/NT4S		
NP5S/NT5S		

PACKAGING







The resistors have to be inside a window which is the K dimension.

K being equal to maximum body length of the resistor + 1.4mm and being centered as per CEI 286 EIA 296D specification to the tape edges.

ORDERING INFORMATION

N	T3S	CC	1kΩ	± 0.1%	AM 500
SERIES	MODEL	SPECIAL REQUEST CC: cut and band leads HF: high frequency	OHMIC VALUE	TOLERANCE	PACKAGING