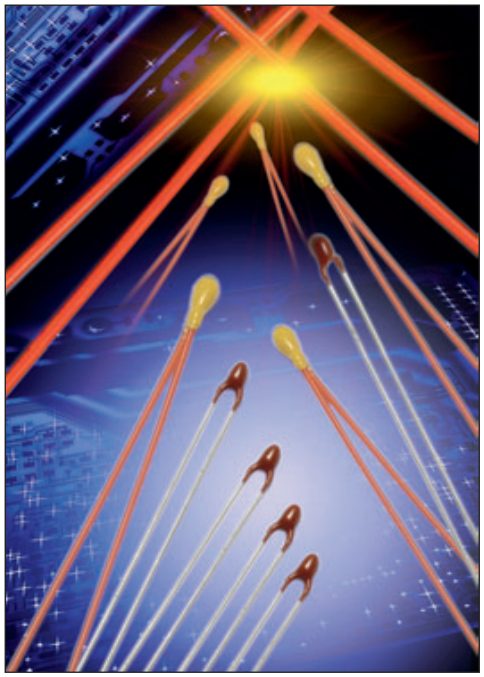
NTC Accurate Leaded Thermistors
NI24 • NJ28

APPLICATIONS

- High precision resistance
- Tight B tolerance
- Ideal for temperature measurement applications



TECHNOLOGY

- NJ range: Coated chip (phenolic resin + varnish overcoat + bare leads)
- NI range: Coated chip (epoxy resin and insulated leads)
- Leads: Radial wire: NJ: tinned copper (*)
  NI: PTFE insulated silvered nickel
- Marking: on package only
- Delivery Mode: Bulk for NI range
  Bulk or Reel or Ammopack for NJ range

(*) other materials available: consult us

Accuracy Series

NJ28

NI24

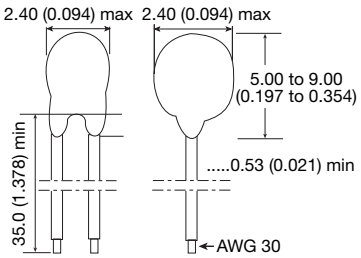
PERFORMANCE CHARACTERISTICS

Types	Accurate Thermistors	
	NJ28	NI24
Operating Temperature	–55 to +150°C	
Tolerance on Rn (25°C)	±1%, ±2%, ±3%	
Maximum dissipation at 25°C	0.16 W	
Thermal dissipation factor	3 mW/°C	
Thermal time constant	8 s	
Response time	< 2 s	

HOW TO ORDER

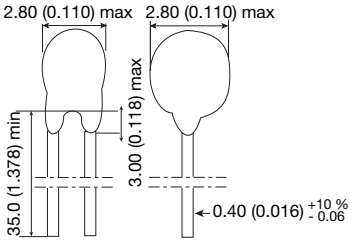
NJ28	MA	0502	F	– –
Type	**Material Code** MA	**Resistance** 5 kΩ	**Tolerance** F (±1%)	**Packaging** Bulk

TABLE OF VALUES
NI24



Part Number	Rn at 25°C (Ω)	Material Code	B (K)	α at 25°C (%/°C)
NI24KA0202	2000	KA	3625 ±1%	–4.1
NI24MA0302	3000	MA	3960 ±0.5%	–4.5
NI24MA0502	5000	MA	3960 ±0.5%	–4.5
NI24MA0103	10000	MA	3960 ±0.5%	–4.5
NI24NA0103	10000	NA	4100 ±1%	–4.6
NI24PA0203	20000	PA	4235 ±1%	–4.8
NI24QA0503	50000	QA	4250 ±1%	–4.8
NI24RA0104	100000	RA	4380 ±1%	–4.9

TABLE OF VALUES
NJ28



Part Number	Rn at 25°C (Ω)	Material Code	B (K)	α at 25°C (%/°C)
NJ28KA0202	2000	KA	3625 ±1%	–4.1
NJ28MA0302	3000	MA	3960 ±0.5%	–4.5
NJ28MA0502	5000	MA	3960 ±0.5%	–4.5
NJ28MA0103	5000	MA	3960 ±0.5%	–4.5
NJ28NA0103	10000	NA	4100 ±1%	–4.6
NJ28PA0203	20000	PA	4235 ±1%	–4.8
NJ28QA0503	50000	QA	4250 ±1%	–4.8
NJ28RA0104	100000	RA	4380 ±1%	–4.9

TABLE OF RESISTANCE: TEMPERATURE CHARACTERISTICS

T	Material code B (K)									T
	KA 3625			MA 3960			NA 4100			
(°C)	R (T) / R25	TF (%)	α (%/°C)	R (T) / R25	TF (%)	α (%/°C)	R (T) / R25	TF (%)	α (%/°C)	(°C)
- 55	61.21	7.1	6.77	104.2	3.9	7.89	109.5	8.0	7.83	- 55
- 50	44.24	6.1	6.53	71.63	3.4	7.57	75.42	6.9	7.54	- 50
- 45	32.33	5.3	6.30	49.94	2.9	7.28	52.63	6.0	7.27	- 45
- 40	23.88	4.5	6.08	35.28	2.5	7.00	37.18	5.1	7.01	- 40
- 35	17.81	3.8	5.88	25.25	2.1	6.73	26.58	4.3	6.76	- 35
- 30	13.41	3.2	5.68	18.28	1.8	6.48	19.22	3.7	6.52	- 30
- 25	10.19	2.7	5.49	13.39	1.5	6.25	14.04	3.1	6.30	- 25
- 20	7.814	2.2	5.31	9.917	1.2	6.02	10.37	2.5	6.09	- 20
- 15	6.040	1.8	5.14	7.419	1.0	5.81	7.730	2.1	5.89	- 15
- 10	4.707	1.5	4.98	5.605	.8	5.61	5.817	1.6	5.70	- 10
- 5	3.696	1.1	4.83	4.275	.6	5.42	4.416	1.3	5.51	- 5
0	2.923	.9	4.68	3.289	.5	5.24	3.382	1.0	5.34	0
5	2.329	.6	4.53	2.552	.3	5.06	2.611	.7	5.17	5
10	1.867	.4	4.40	1.997	.2	4.90	2.032	.5	5.01	10
15	1.507	.3	4.27	1.574	.1	4.74	1.593	.3	4.86	15
20	1.224	.1	4.14	1.250	.1	4.59	1.258	.1	4.71	20
25	1.0000	0.0	4.02	1.0000	0.0	4.45	1.0000	0.0	4.57	25
30	.8217	.1	3.91	.8053	.1	4.31	.8004	.1	4.44	30
35	.6788	.2	3.80	.6527	.1	4.18	.6446	.3	4.31	35
40	.5638	.4	3.69	.5323	.2	4.06	.5224	.4	4.19	40
45	.4707	.5	3.59	.4367	.3	3.94	.4258	.6	4.07	45
50	.3948	.7	3.49	.3604	.4	3.82	.3491	.8	3.96	50
55	.3328	.9	3.40	.2990	.5	3.71	.2877	1.0	3.85	55
60	.2818	1.0	3.31	.2493	.6	3.61	.2383	1.2	3.74	60
65	.2396	1.2	3.22	.2090	.7	3.51	.1984	1.4	3.64	65
70	.2046	1.4	3.14	.1760	.8	3.41	.1660	1.6	3.55	70
75	.1754	1.6	3.06	.1489	.9	3.32	.1396	1.8	3.45	75
80	.1510	1.8	2.98	.1266	1.0	3.23	.1178	2.1	3.36	80
85	.1305	2.0	2.90	.1081	1.1	3.14	.09991	2.3	3.28	85
90	.1131	2.3	2.83	.09262	1.2	3.06	.08507	2.5	3.20	90
95	.09846	2.5	2.76	.07970	1.3	2.98	.07273	2.8	3.12	95
100	.08597	2.7	2.69	.06885	1.5	2.91	.06241	3.0	3.04	100
105	.07531	2.9	2.63	.05969	1.6	2.83	.05376	3.3	2.96	105
110	.06618	3.1	2.56	.05194	1.7	2.76	.04648	3.5	2.89	110
115	.05834	3.4	2.50	.04535	1.8	2.69	.04032	3.8	2.82	115
120	.05158	3.6	2.44	.03973	2.0	2.63	.03510	4.1	2.76	120
125	.04573	3.8	2.39	.03491	2.1	2.56	.03065	4.3	2.69	125
130	.04066	4.0	2.33	.03077	2.2	2.50	.02685	4.6	2.63	130
135	.03625	4.3	2.28	.02721	2.3	2.44	.02359	4.8	2.57	135
140	.03240	4.5	2.23	.02412	2.5	2.39	.02079	5.1	2.51	140
145	.02903	4.7	2.18	.02145	2.6	2.33	.01838	5.4	2.45	145
150	.02608	5.0	2.13	.01912	2.7	2.28	.01629	5.6	2.40	150

T	Material code B (K)									T
	PA 4235			QA 4250			RA 4380			
(°C)	R (T) / R25	TF (%)	α (%/°C)	R (T) / R25	TF (%)	α (%/°C)	R (T) / R25	TF (%)	α (%/°C)	(°C)
- 55	123.3	8.3	8.00	101.8	8.3	7.36	110.7	8.6	7.53	- 55
- 50	84.31	7.2	7.71	71.33	7.2	7.13	77.22	7.4	7.29	- 50
- 45	58.37	6.2	7.43	50.51	6.2	6.91	54.43	6.4	7.07	- 45
- 40	40.92	5.3	7.17	36.14	5.3	6.70	38.76	5.5	6.85	- 40
- 35	29.03	4.5	6.92	26.11	4.5	6.50	27.86	4.6	6.65	- 35
- 30	20.83	3.8	6.69	19.05	3.8	6.31	20.22	3.9	6.46	- 30
- 25	15.10	3.2	6.46	14.02	3.2	6.12	14.81	3.3	6.27	- 25
- 20	11.07	2.6	6.25	10.41	2.6	5.85	10.94	2.7	6.09	- 20
- 15	8.189	2.1	6.05	7.791	2.1	5.78	8.143	2.2	5.92	- 15
- 10	6.117	1.7	5.85	5.879	1.7	5.62	6.112	1.8	5.76	- 10
- 5	4.610	1.3	5.67	4.470	1.3	5.46	4.622	1.4	5.60	- 5
0	3.504	1.0	5.49	3.424	1.0	5.31	3.522	1.0	5.45	0
5	2.686	.7	5.32	2.642	.7	5.17	2.702	.8	5.31	5
10	2.075	.5	5.16	2.052	.5	5.03	2.087	.5	5.17	10
15	1.615	.3	5.01	1.605	.3	4.90	1.623	.3	5.03	15
20	1.266	.1	4.86	1.263	.1	4.77	1.270	.1	4.91	20
25	1.0000	0.0	4.72	1.0000	0.0	4.65	1.0000	0.0	4.78	25
30	.7949	.1	4.58	.7965	.1	4.53	.7920	.1	4.66	30
35	.6359	.3	4.45	.6380	.3	4.42	.6308	.3	4.55	35
40	.5119	.4	4.32	.5139	.4	4.31	.5052	.5	4.43	40
45	.4145	.6	4.20	.4162	.6	4.20	.4068	.6	4.33	45
50	.3376	.8	4.09	.3388	.8	4.10	.3292	.8	4.22	50
55	.2765	1.0	3.98	.2771	1.0	4.00	.2678	1.0	4.12	55
60	.2276	1.2	3.87	.2278	1.2	3.90	.2189	1.3	4.02	60
65	.1883	1.4	3.77	.1881	1.4	3.81	.1797	1.5	3.93	65
70	.1566	1.7	3.67	.1560	1.7	3.72	.1483	1.7	3.84	70
75	.1308	1.9	3.58	.1300	1.9	3.63	.1228	2.0	3.75	75
80	.1098	2.1	3.48	.1088	2.1	3.55	.1022	2.2	3.67	80
85	.09258	2.4	3.40	.0914	2.4	3.47	.08537	2.5	3.58	85
90	.07838	2.6	3.31	.07708	2.6	3.39	.07160	2.7	3.50	90
95	.06662	2.9	3.23	.06527	2.9	3.31	.06029	3.0	3.42	95
100	.05686	3.1	3.15	.05547	3.2	3.24	.05095	3.2	3.35	100
105	.04871	3.4	3.07	.04731	3.4	3.17	.04322	3.5	3.28	105
110	.04189	3.7	3.00	.04049	3.7	3.10	.03679	3.8	3.21	110
115	.03614	3.9	2.93	.03478	3.9	3.03	.03143	4.1	3.14	115
120	.03130	4.2	2.86	.02996	4.2	2.96	.02693	4.3	3.07	120
125	.02719	4.5	2.79	.02590	4.5	2.90	.02316	4.6	3.01	125
130	.02370	4.7	2.73	.02246	4.7	2.84	.01997	4.9	2.94	130
135	.02072	5.0	2.67	.01953	5.0	2.78	.01728	5.2	2.88	135
140	.01817	5.3	2.61	.01704	5.3	2.72	.01499	5.4	2.82	140
145	.01598	5.5	2.55	.01490	5.5	2.67	.01305	5.7	2.77	145
150	.01410	5.8	2.49	.01307	5.8	2.61	.01138	6.0	2.71	150

PACKAGING

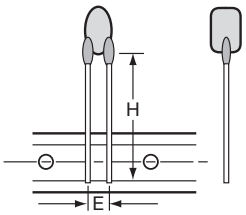
• Reel & Ammopack

millimeters (inches)

Types	Suffix	H or Ho	Leads	Quantity/Size	Packaging
NJ28	CA	16 ± 0.5 (0.630 ± 0.020)	Straight	3000	AMMOPACK
	CB	16 ± 0.5 (0.630 ± 0.020)	Straight	3000	REEL
	CC	19.5 ± 0.5 (0.768 ± 0.020)	Straight	3000	AMMOPACK
	CD	19.5 ± 0.5 (0.768 ± 0.020)	Straight	3000	REEL

• Bulk

Type	Quantity/box
NJ28	2000
NI24	1000



E: 2.54 -0.10 +0.60
(0.100 -0.004 +0.024)

TAPING CHARACTERISTICS

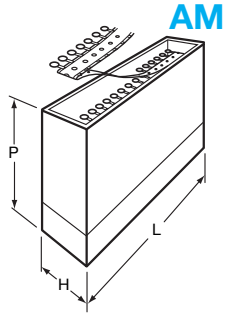
Missing components

A maximum of 3 consecutive components may be missing from the bandolier, surrounded by at least 6 filled positions. The number of missing components may not exceed 0.5% of the total per packing module.

The beginning and the end of tape exhibit 8 or 9 blank positions.

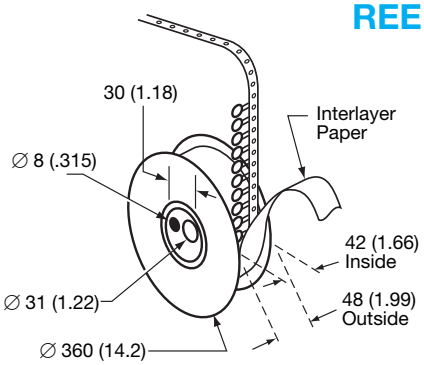
DIMENSIONS: millimeters (inches)

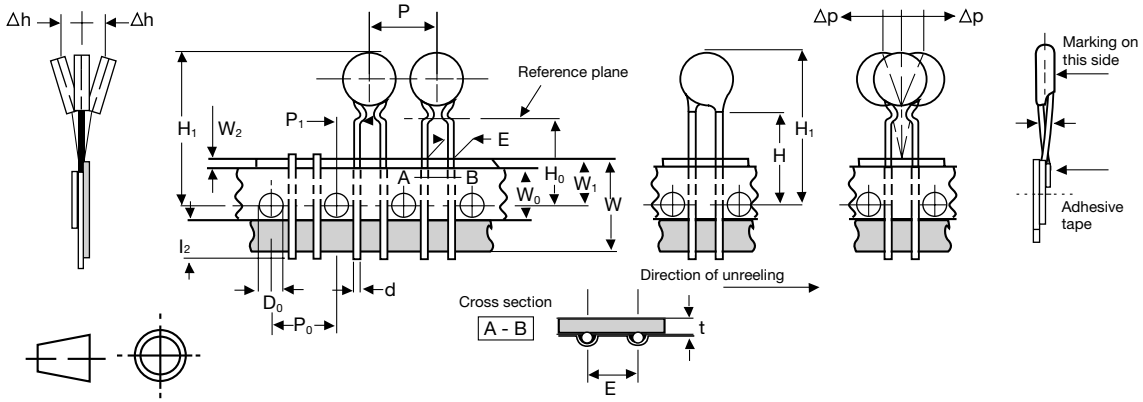
AMMOPACK



L	H	P
330 (13.0)	46 (1.81)	290 (11.4)

REEL





Value	Tolerance	Dimensions Characteristics	
18	+1 / -0.5	W	Leading tape width
6	±0.3	W_0	Adhesive tape width
9	+0.75 / -0.5	W_1	Sprocket hole position
3 max.		W_2	Distance between the top of the tape and the adhesive
4	±0.2	D_0	Diameter of sprocket hole
16/19.5	±0.5	H_0	Distance between the tape axis and the seating plane of the component
		H_1	Distance between the tape axis and the top of component body

Value		Tolerance	Dimensions Characteristics	
12.7		±0.2	P_0	Sprocket holes pitch
254		±1	–	Distance between 21 consecutive holes 20 pitches
0.7		±0.2	t	Total thickness of tape
2.54	5.08	+0.6 -0.1	E	Lead spacing
5.08	3.85	± 0.7	P_1	Distance between the sprocket hole axis and the lead axis
12.7		±1.0	P	Spacing of components
0.5	0.6	±5%	d	Lead diameter
0		±1.3	^{3}P	Verticality of components
0		±2	^{3}h	Alignment of components