

Data Sheet

Customer:

Product: Wire Wound Leaded Resistors – KNP Series

Sizes.: 0932/1145/1550/1760/2480

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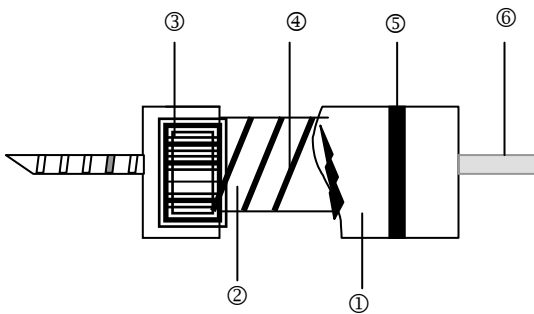
Wire Wound Leded Resistors

Scope

This KNP type standard specification is for use in consumer electronics computer, telecommunication equipments, etc

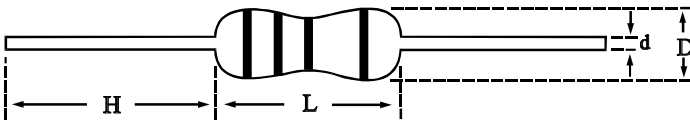


Construction



①	Non-flame Paint With Sol Vent-proof	④	Copper-Nickel Alloy Wire Wound Film
②	Ceramic Rod	⑤	Marking
③	End Cap	⑥	Lead Wire

Dimensions



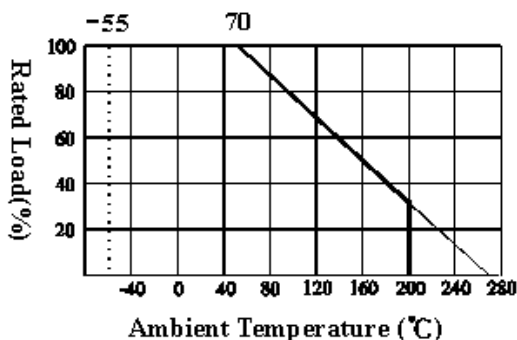
Type	L	D	H	d
0932	9.0±0.5	3.2±0.5	26±2.0	0.53~0.68
1145	11.5±1.0	4.5±0.5	35±2.0	0.73~0.80
1550	15.5±1.0	5.0±0.5	32±2.0	0.73~0.80
1760	17.5±1.0	6.0±0.5	32±2.0	0.73~0.80
2480	24.5±1.0	8.0±0.5	38±3.0	0.73~0.80

Part Numbering

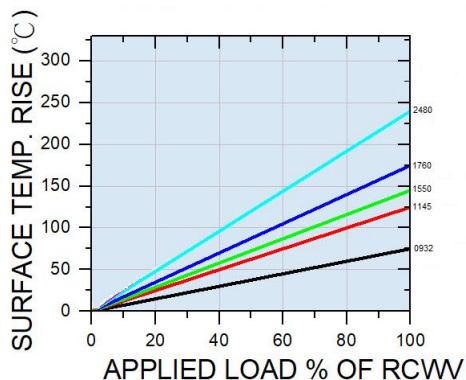
KNP	0932	J	A	H	U	1000	
Product Type	Dimensions (L×D)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance	Special
	0932: 9.0x3.2 1145: 11.5x4.5 1550: 15.5x5.0 1760: 17.5x6.0 2480: 24.5x8.0	F: ±1% J: ±5%	A: Ammo B: Bulk T: Taping Reel	H: ±400	U: 1/2W T: 1W S: 2W R: 3W D: 5W E: 7W	R100: 0.1Ω 0010: 1Ω 0100: 10Ω 1000: 100Ω	: Standard MA: MA-type MB: MB-type MC: MC-type FA: FA-type FB: FB-type FC: FC-type

Wire Wound Led Resistors

Derating Curve



Hot-Spot Temperature



Standard Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Dielectric Withstanding Voltage	Resistance Range		TCR (±PPM/°C)
				±1%	±5%	
0932	1/2W	-55 ~ +200°C	300V	1Ω~150Ω	0.1Ω~150Ω	±400
1145	1W		300V	1Ω~470Ω	0.1Ω~470Ω	
1550	2W		400V	1Ω~470Ω	0.1Ω~470Ω	
1760	3W		400V	1Ω~470Ω	0.1Ω~470Ω	
2480	5W		400V	1Ω~560Ω	0.1Ω~560Ω	

Value Range for standard resistance, below or over this resistance on request. Special TCR by request.

High Power Rating Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Dielectric Withstanding Voltage	Resistance Range		TCR (±PPM/°C)
				±1%	±5%	
0932	1W	-55 ~ +200°C	300V	1Ω~150Ω	0.1Ω~150Ω	±400
1145	2W		300V	1Ω~470Ω	0.1Ω~470Ω	
1550	3W		400V	1Ω~470Ω	0.1Ω~470Ω	
1760	5W		400V	1Ω~470Ω	0.1Ω~470Ω	
2480	7W		400V	1Ω~560Ω	0.1Ω~560Ω	

Resistor body color : Grey or Pink are available

Value Range for standard resistance, below or over this resistance on request. Special TCR by request.

Environmental Characteristics

Item	Specification	Test Method
Short Time Overload	±(2%+0.05Ω)	JIS-C-5201-1 5.5 RCWV*2.5 or Max Overloading Voltage · 5 seconds
Temperature Coefficient	By Type	Resistance value at room temperature and room temperature+100°C
Dielectric Withstanding Voltage	By Type	JIS-C-5201-1 5.7 In V-Block for 1 minute
Insulation Resistance	> 100MΩ	JIS-C-5201-1 5.6 In V-Block for 1 minute
Load Life	±(5%+0.05Ω)	JIS-C5201-1 7.10 RCWV · 70°C · RCWV for1000hrs (1.5hrs.on · 0.5hrs.off)
Humidity (Steady State)	±(5%+0.05Ω)	JIS-C5201-1 7.9 40±2°C , 90~95%RH,RCWV for1000hrs (1.5hrs.on · 0.5hrs.off)
Solderability	95% Min. Coverage	JIS-C5201-1 6.5 260°C±5°C,2±0.5 (sec)
Terminal Strength	Tensile: ≥ 2.5kg	Direct Load for 10 sec. In the direction off the terminal leads.
Resistance to Solvent	No abnormality in coatings and markings	IPA for 5±0.5 Min. with ultrasonic

Storage Temperature :15~28°C; Humidity <80%RH

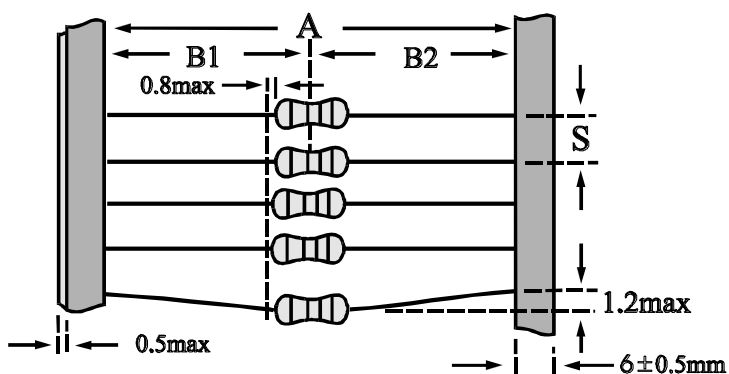
Shelf life: 1 years Max

Wire Wound Led Resistor

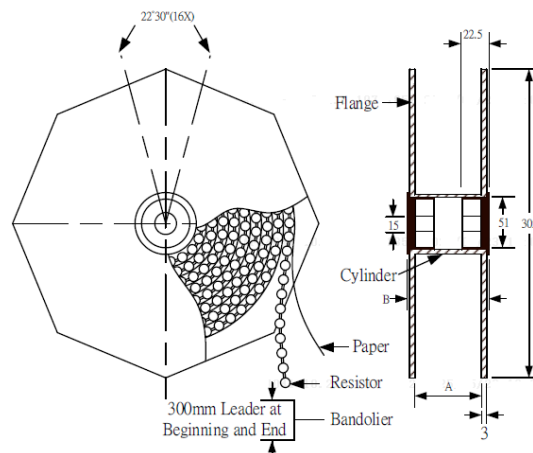
Taping/Packing Specifications

1. Standard Type (Reel & Ammo)

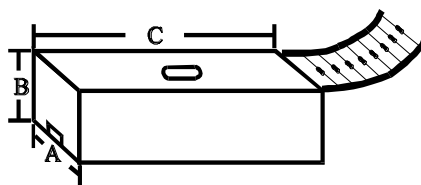
Packing Methods



Reel Packing



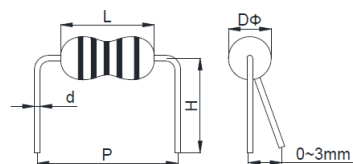
Ammo Packing



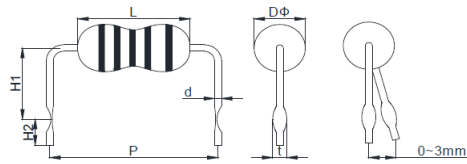
Unit: mm

Packaging Type	Packing Methods			Reel Packing		Ammo Packing			
	A	B1-B2	S	Across Flange (A)	Qty	A	B	C	Qty
0932	52+1/-0	1.2	5±0.3	72	2,500	79±2	58±3	257±5	1,000
1145	52+1/-0	1.5	5±0.3	95	2,000	103±2	82±3	262±5	1,000
	73+1/-0								
1550	52+1/-0	1.5	10±0.8	95	1,000	103±2	96±3	265±5	1,000
	73+1/-0								
1760	73+1/-0	1.5	10±0.8	95	1,000	103±2	82±3	262±5	500
2480	88+1/-0	1.5	10±0.8	110	500	115±2	73±3	265±5	250

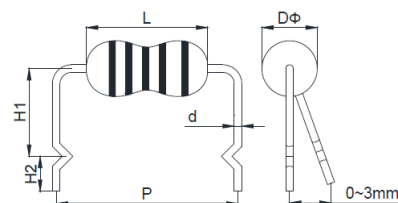
2. Special Type (Bulk)



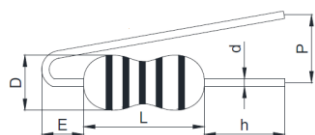
MA Type



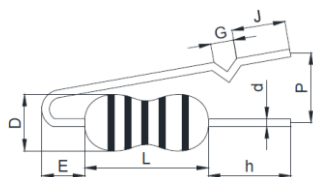
MB Type



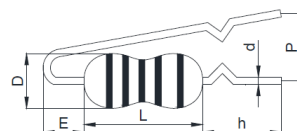
MC Type



FA Type



FB Type



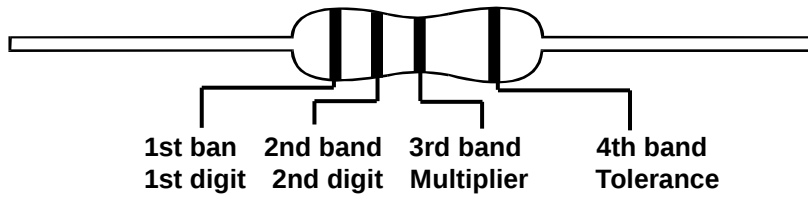
FC Type

Unit: mm

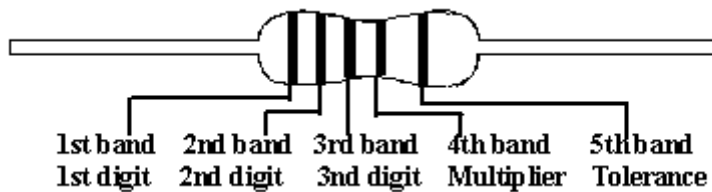
Codes	Type	P	H /H1/h	H2/G	J	t	D	L	d	E
0932	MA	12.5±1	10.0±1	-	-	-	3.2±0.5	9.0±0.5	0.53~0.68	-
	MC	12.5±1	5.0±1	4.0±2	-	-	3.2±0.5	9.0±0.5	0.53~0.68	-
	FA	5~15	5.0±2	-	-	-	3.2±0.5	9.0±0.5	0.53~0.68	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	3.2±0.5	9.0±0.5	0.53~0.68	3±1
	FC	5~15	10.0±3	-	-	-	3.2±0.5	9.0±0.5	0.53~0.68	-
1145	MA	15±1	12.5±1	-	-	-	4.5±0.5	11.5±1.0	0.73~0.80	-
	MC	15±1	8.0±1	6.0±1	-	-	4.5±0.5	11.5±1.0	0.73~0.80	-
	FA	5~15	5.0±2	-	-	-	4.5±0.5	11.5±1.0	0.73~0.80	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	4.5±0.5	11.5±1.0	0.73~0.80	3±1
	FC	5~15	10.0±3	-	-	-	4.5±0.5	11.5±1.0	0.73~0.80	-
1550	MA	20±1	15.0±1	-	-	-	5.0±0.5	15.5±1.0	0.73~0.80	-
	MC	20±1	12.0±1	5.0±1	-	-	5.0±0.5	15.5±1.0	0.73~0.80	-
	FA	5~15	5.0±2	-	-	-	5.0±0.5	15.5±1.0	0.73~0.80	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	5.0±0.5	15.5±1.0	0.73~0.80	3±1
	FC	5~15	10.0±3	-	-	-	5.0±0.5	15.5±1.0	0.73~0.80	-
1760	MA	25±1	15.0±1	-	-	-	6.0±0.5	17.5±1.0	0.73~0.80	-
	MB	25±1	10.0±1	5.5±1	-	1.4±0.2	6.0±0.5	17.5±1.0	0.73~0.80	-
	MC	24±1	5.0±1	6.0±1	-	-	6.0±0.5	17.5±1.0	0.73~0.80	-
	FB	5~15	7.0±3	3.0±1	-	-	6.0±0.5	17.5±1.0	0.73~0.80	3±1
	FC	5~15	7.0±3	-	-	-	6.0±0.5	17.5±1.0	0.73~0.80	3±1
2480	MA	30±1	15.0±1	-	-	-	8.0±0.5	24.5±1.0	0.73~0.80	-
	MB	30±1	12.0±1	5.0±1	-	1.4±0.2	8.0±0.5	24.5±1.0	0.73~0.80	-
	FC	5~15	10.0±3	-	-	-	8.0±0.5	24.5±1.0	0.73~0.80	3±1

Wire Wound Led Resistors

■ Marking & Resistance Tolerance



±5.0%	E-24	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1
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±1.0%	E-96	1.00	1.02	1.05	1.07	1.10	1.13	1.15	1.18	1.21	1.24	1.27	1.30	1.33	1.37	1.40	1.43	1.47	1.50	1.54	1.58	1.62	1.65	1.69	1.74
		1.78	1.82	1.87	1.91	1.96	2.00	2.05	2.10	2.15	2.21	2.26	2.32	2.37	2.43	2.49	2.55	2.61	2.67	2.74	2.80	2.87	2.94	3.01	3.09
		3.16	3.24	3.32	3.40	3.48	3.57	3.65	3.74	3.83	3.92	4.02	4.12	4.22	4.32	4.42	4.53	4.64	4.75	4.87	4.99	5.11	5.23	5.36	5.49
		5.62	5.76	5.90	6.04	6.19	6.34	6.49	6.65	6.81	6.98	7.15	7.32	7.50	7.68	7.87	8.06	8.25	8.45	8.66	8.87	9.09	9.31	9.53	9.76

Color	Digit	Multiplier	Tolerance	
Without	-	-	-	-
Silver	-	10 ⁻²	-	-
Gold	-	10 ⁻¹	±5.0%	J
Black	0	10 ⁰	-	-
Brown	1	10 ¹	±1.0%	F
Red	2	10 ²	-	-
Orange	3	10 ³	-	-
Yellow	4	10 ⁴	-	-
Green	5	10 ⁵	-	-
Blue	6	10 ⁶	-	-
Violet	7	10 ⁷	-	-
Grey	8	10 ⁸	-	-
White	9	10 ⁹	-	-

REVISION HISTORY

<u>REVISION</u>	<u>DATE</u>	<u>CHANGE NOTIFICATION</u>	<u>DESCRIPTION</u>
Version A8	Mar 31,2025		-Add Shelf life.
Version A9	May 23,2025		-Remove Packing Method A 52+1/-0 dimensions for 1760.