

Polymer PTC Resettable Fuse: KRL Type

240Vac Radial Leded Type For Line Voltage Application



■ Features

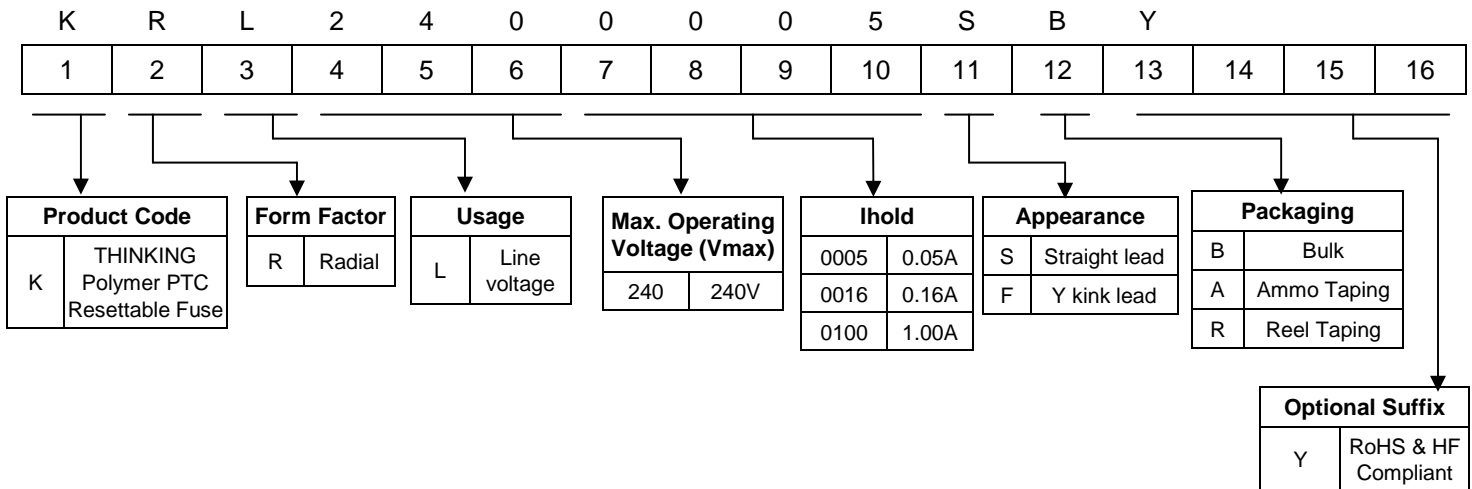
1. RoHS & Halogen-Free (HF) compliant
2. Radial leaded devices
3. Hold current ratings from 0.05A ~ 2.0A
4. Maximum operating voltage: 240Vac
5. Operating & storage temperature range : -40 ~ +85°C
6. Agency Approval: UL / cUL / TUV



■ Recommended Applications

1. Motors
2. Transformers
3. Power supplies
4. Industrial controllers
5. Home appliance

■ Part Number Code

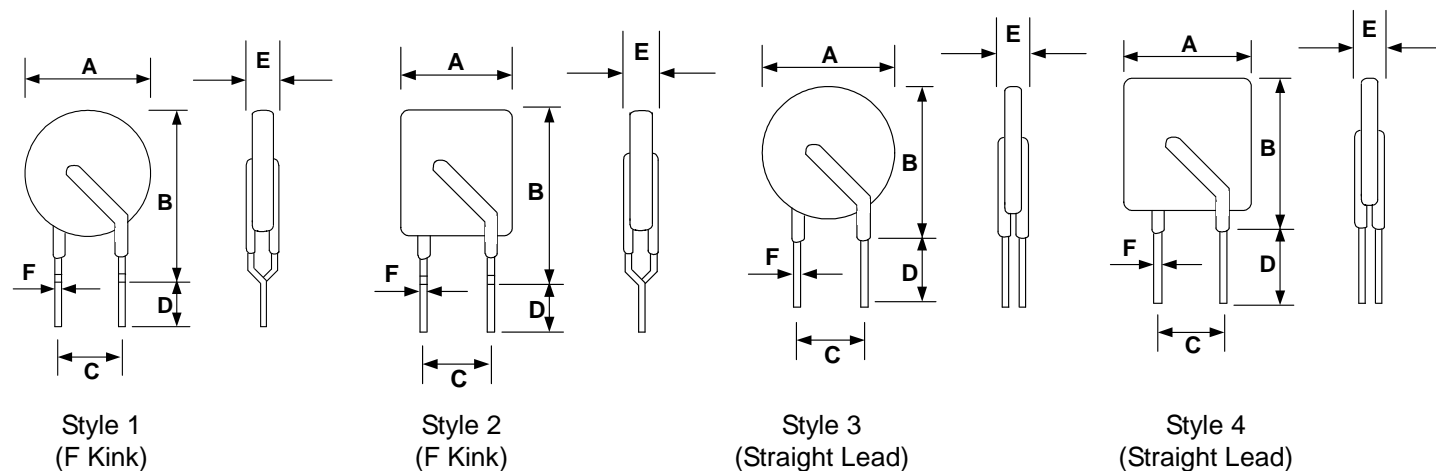


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■ Structure and Dimensions



Marking: Device is marked with product type, V_{max}, and I hold.

(Unit:mm)

Part No.	A	B (Max.)		C	D	E	F	Figure
	Max.	F Kink	Straight Lead	Typ.	Min.	Max.	Typ.	Style
KRL2400005	8.3	12.1	10.7	5.0±0.8	7.6	4.6	0.50±0.02	1,3
KRL2400008	8.3	12.4	10.7	5.0±0.8	7.6	4.6	0.50±0.02	1,3
KRL2400012	8.3	12.9	10.7	5.0±0.8	7.6	3.8	0.50±0.02	1,3
KRL2400016	9.9	13.8	12.5	5.0±0.8	7.6	3.8	0.50±0.02	1,3
KRL2400025	9.6	18.8	17.4	5.0±0.8	7.6	3.8	0.60±0.02	2,4
KRL2400033	11.4	19.0	16.5	5.0±0.8	7.6	3.8	0.60±0.02	2,4
KRL2400040	11.5	20.9	19.5	5.0±0.8	7.6	3.8	0.60±0.02	2,4
KRL2400055	14.0	22.4	21.7	5.0±0.8	7.6	4.1	0.80±0.02	2,4
KRL2400075	11.5	--	23.4	5.0±0.8	7.6	4.8	0.80±0.02	4
KRL2400100	18.7	--	24.4	10.0±0.8	7.6	5.1	0.80±0.02	3
KRL2400125	21.2	--	27.4	10.0±0.8	7.6	5.3	0.80±0.02	3
KRL2400135	16.3	--	21.7	5.0±0.8	7.6	4.1	0.80±0.02	4
KRL2400200	24.9	--	33.8	10.0±0.8	7.6	6.1	0.80±0.02	4

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240Vac Radial Leaded Type For Line Voltage Application



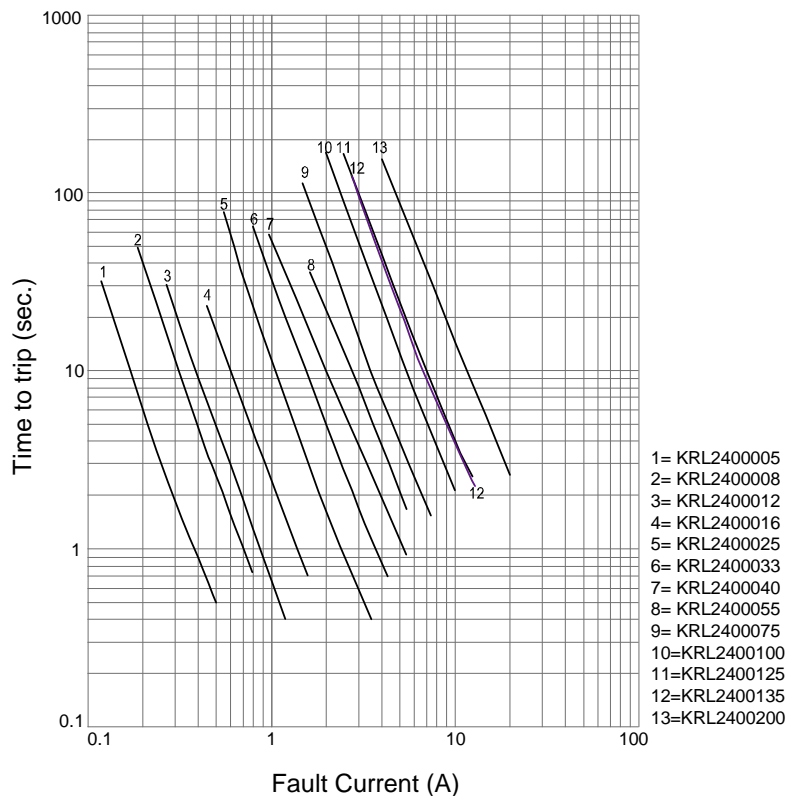
■ Electrical Characteristics at 23°C

Part No.	V _{max.}	V _{interrupt}	I _{max.}	I _{hold}	I _{trip}	P _d (Typ.)	Max. Time to Trip		Resistance		Safety Approvals	
							Current	Time	Initial Ri	Post Trip R1	UL/cUL	TUV
							(A)	(Sec.)	Min. (Ω)	Max. (Ω)		
KRL2400005	240	265	1.00	0.05	0.12	0.70	0.25	15.00	18.500	65.000	√	√
KRL2400008	240	265	1.20	0.08	0.19	0.80	0.40	15.00	7.400	26.000	√	√
KRL2400012	240	265	1.20	0.12	0.30	1.00	0.60	15.00	3.000	12.000	√	√
KRL2400016	240	265	2.00	0.16	0.37	1.40	0.80	15.00	2.500	7.800	√	√
KRL2400025	240	265	3.50	0.25	0.56	1.50	1.25	18.50	1.300	3.800	√	√
KRL2400033	240	265	4.50	0.33	0.74	1.70	1.65	21.00	0.770	2.600	√	√
KRL2400040	240	265	5.50	0.40	0.90	2.00	2.00	24.00	0.600	1.900	√	√
KRL2400055	240	265	7.00	0.55	1.25	3.40	2.75	26.00	0.450	1.450	√	√
KRL2400075	240	265	7.50	0.75	1.50	2.60	3.75	18.00	0.250	0.840	√	√
KRL2400100	240	265	10.00	1.00	2.00	2.90	5.00	21.00	0.179	0.580	√	√
KRL2400125	240	265	12.50	1.25	2.50	3.30	6.25	23.00	0.117	0.440	√	√
KRL2400135	240	265	13.50	1.35	2.70	4.00	6.75	20.00	0.109	0.300	√	√
KRL2400200	240	265	20.00	2.00	4.00	4.50	10.0	36.00	0.075	0.220	√	√

Note: UL&cUL File No: E138827

TUV File No: J50218395

■ Typical Time to Trip Curves at 23°C

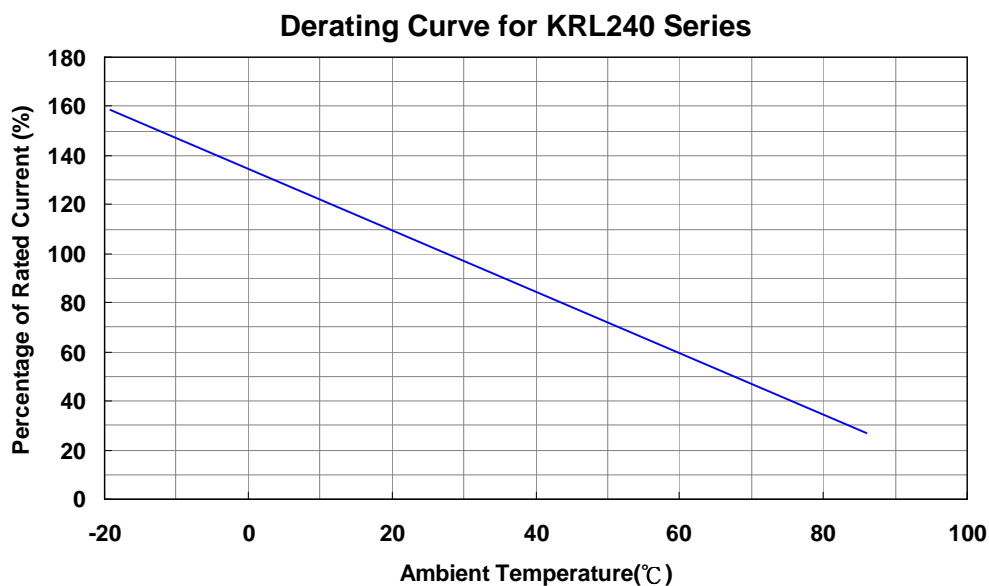


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■ Ihold & Itrip Thermal Derating Curve



■ Ihold Thermal Derating Chart

(Unit: A)

Part no	Ambient Temperature							
	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
KRL2400005	0.08	0.06	0.05	0.04	0.04	0.03	0.03	0.02
KRL2400008	0.12	0.10	0.08	0.07	0.06	0.05	0.04	0.03
KRL2400012	0.18	0.15	0.12	0.10	0.09	0.07	0.06	0.04
KRL2400016	0.24	0.20	0.16	0.13	0.11	0.10	0.08	0.05
KRL2400025	0.38	0.32	0.25	0.21	0.18	0.15	0.13	0.09
KRL2400033	0.50	0.42	0.33	0.27	0.23	0.20	0.17	0.11
KRL2400040	0.61	0.51	0.40	0.33	0.28	0.24	0.20	0.14
KRL2400055	0.80	0.68	0.55	0.46	0.40	0.35	0.29	0.22
KRL2400075	1.23	0.98	0.75	0.60	0.56	0.49	0.45	0.41
KRL2400100	1.65	1.30	1.00	0.80	0.75	0.65	0.60	0.55
KRL2400125	2.06	1.63	1.25	1.00	0.94	0.81	0.75	0.69
KRL2400135	2.00	1.65	1.35	1.12	1.01	0.90	0.78	0.65
KRL2400200	3.30	2.60	2.00	1.60	1.50	1.30	1.20	1.10

■ Reliability

Item	Standard	Test Condition/methods	Criteria
Resistance to Soldering Heat	IEC 60068-2-58	260 ± 5 °C , 10 ± 1 sec	Rf<R1max , No visible damage
Passive Aging	IEC 60738-1	85±5°C, 1000±24hrs	±5% typical resistance change
Humidity Aging	IEC 60068-2-78	85±5°C, 80~85%RH, 1000±5hrs	±5% typical resistance change
Rapid Change of Temperature	IEC 60738-1	85±5/-40±5°C, 10 cycles, Duration:30min	±5% typical resistance change
Overload Endurance	UL 1434	Vmax,120% Imax ,50 cycles Vmax,300% Itrip ,6000 cycles	No visible damage
Trip endurance	UL 1434	Vmax, Itrip ≤ I ≤ Imax , 1000±24hrs	No visible damage

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■ Packaging

Devices taped using IEC 60286-2 standards. See table below and Fig. 1~5 for details.

Description	EIA Mark	Dimensions (mm)	Tolerance (mm)
Sprocket hole pitch	P ₀	12.70	±0.3
Ordinate to adjacent component lead KRL2400005~KRL2400075,KRL2400135	P ₁	3.85	±0.7
Ordinate to adjacent component lead KRL24000100,KRL2400125,KRL2400200		7.70	
Device pitch KRL2400005-KRL2400040,KRL2400075	P	12.70	±1.0
Device pitch KRL2400055,KRL2400100~KRL2400200		25.40	
Carrier tape width	W	18.00	+1/-0.5
Top distance between tape edges	W ₂	3.00	Max
Hold-down tape width	W ₀	12.00	±1.0
Sprocket hole position	W ₁	9.00	+0.75/-0.5
Lead spacing KRL2400005~KRL2400075,KRL2400135	F	5.00	±0.8
Lead spacing KRL24000100,KRL2400125,KRL2400200		10.00	
Lead diameter KRL2400005~KRL2400016	d	0.50	±0.02
Lead diameter KRL2400025~KRL2400040		0.60	
Lead diameter KRL2400055~KRL2400200		0.80	
Abscissa to top KRL2400005-KRL2400016	H ₁	32.20	Max
Abscissa to top KRL2400025-KRL2400200		47.50	
Abscissa to plane (straight lead)	H	18.00	+2/-0
Abscissa to plane (kinked lead)	H ₀	16.00	±0.5
Sprocket hole diameter	D ₀	4.00	±0.2
Lead protrusion	L ₁	0.50	Max
Tape thickness	T	0.60	±0.2
Body tape plane deviation	Δh	2.00	Max.
Body lateral deviation	Δp	1.00	Max.
Reel width	W3	56.00	Max.
Reel diameter		340.00	±10.0
Arbor hold diameter	n0	31.00	±1
Core diameter	n	80.00	Min.

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- Taping Specification

Fig .1 For KRL2400005 ~ KRL2400016

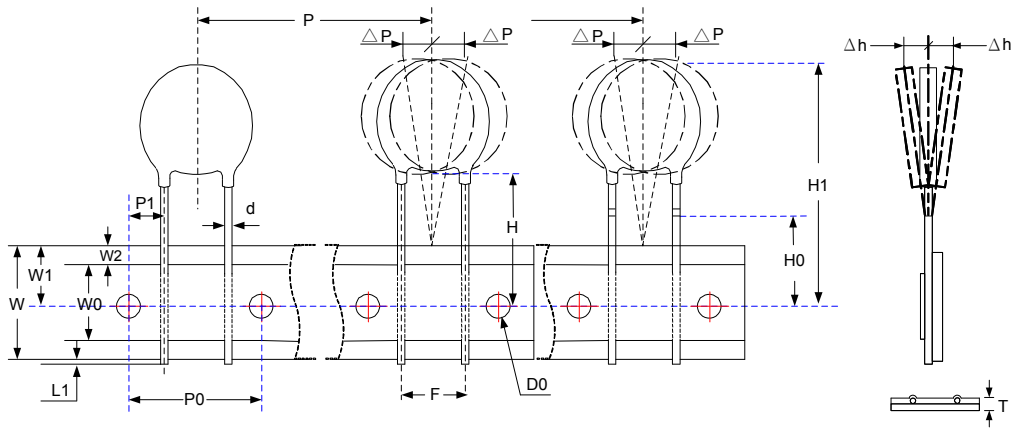


Fig. 2 For KRL2400025 ~ KRL2400055, KRL2400075, KRL2400135

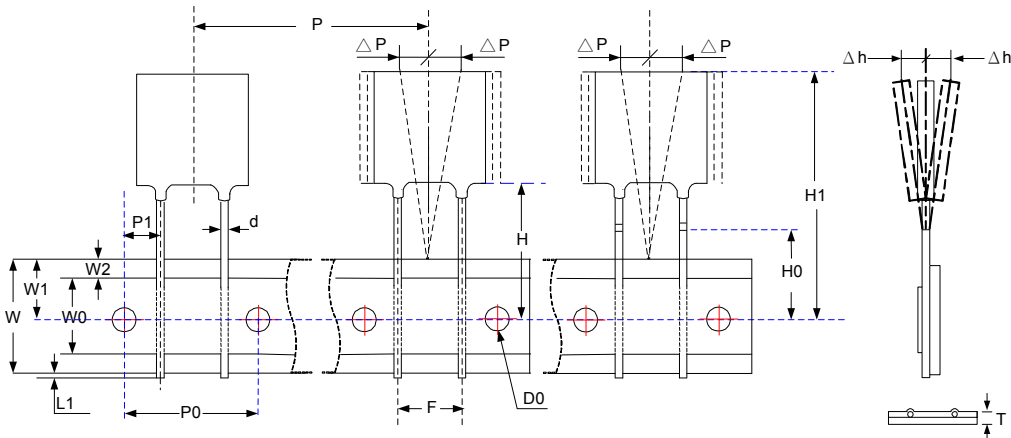
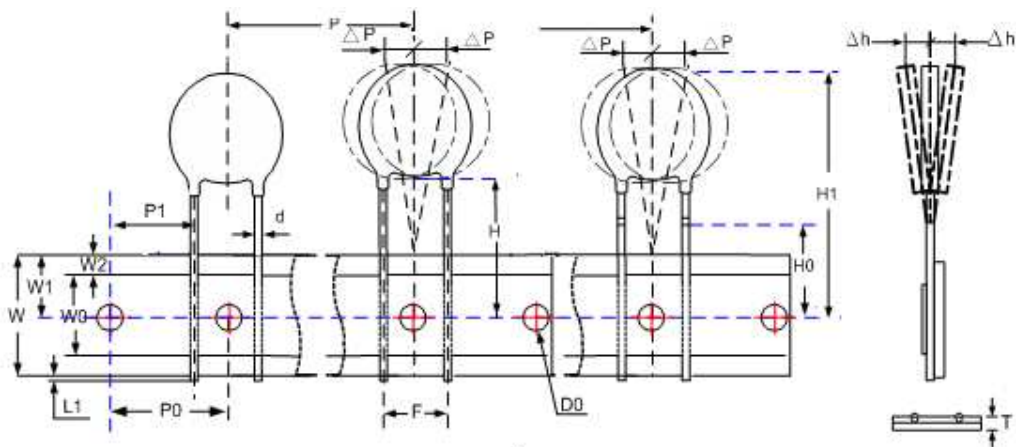


Fig. 3 For KRL24000100, KRL2400125

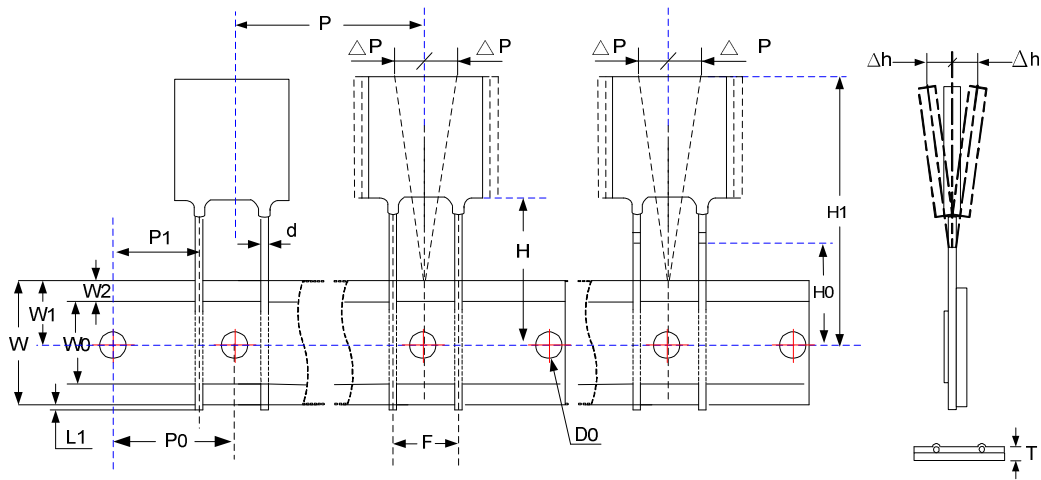


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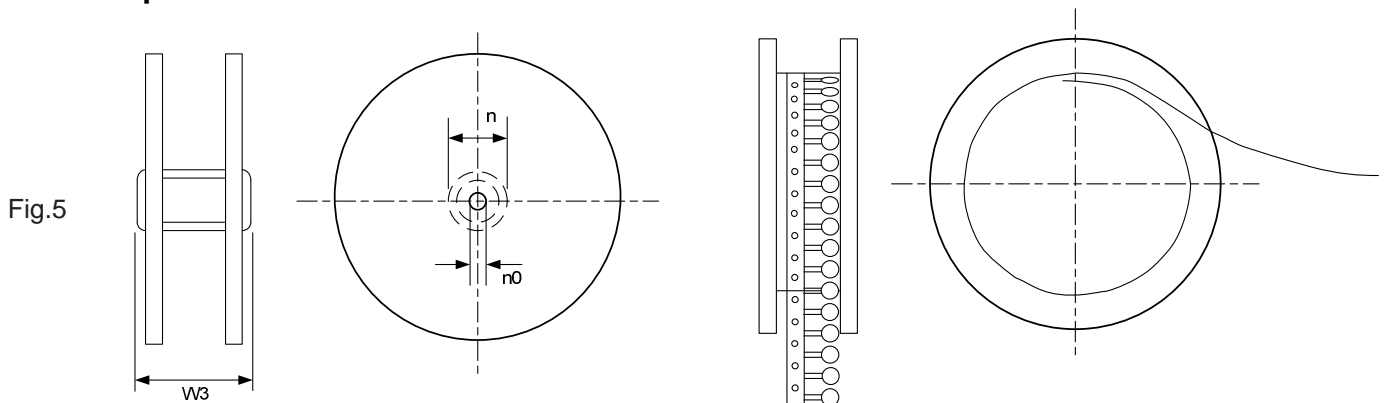
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Fig.4 For KRL2400200



● Reel Specification



■ Quantity

● Bulk Packing

Series	Quantity (pcs/bag)
KRL2400005 ~ KRL2400075	500
KRL2400100 ~ KRL240200	250

● Reel Packing

Series	Quantity (pcs/reel)
KRL2400005 ~ KRL2400016	2,000
KRL2400025 ~ KRL2400040, KRT2400075	1,500
KRL2400055, KRL2400100 ~ KRL2400200	1,000

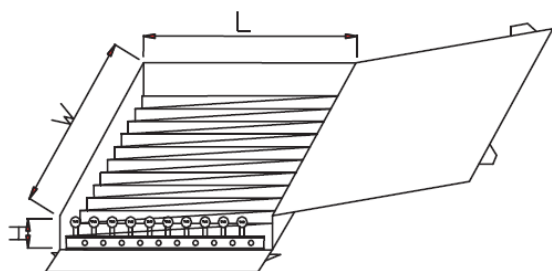
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- **Ammo Packing**

Series	Quantity (pcs/box)
KRL2400005 ~ KRL2400016	1,000
KRL2400025 ~ KRT2400200	500



(Unit: mm)

Series	W	L	H
KRL240 (0005~0016)	348	185	50
KRL240 (0025~0200)	348	185	73

■ Warehouse Storage Conditions of Products

- Storage Conditions :
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative humidity: $\leq 75\% \text{RH}$
 3. Thermistors must be kept away from sunlight and stored in a non-corrosive atmosphere.
- Period of Storage: 1 year