SPECIFICATION FOR APPROVAL

INDEX

RoHS

Radial Leaded PTC Resettable Fuse : RDL16V Series

1.Summary

(a) RoHS Compliant (Lead Free) Product
(b) Applications : Wide variety of electronic equipment
(c) Product Features : Very Low resistance, Very High hold current, Solid state, Radial leaded product ideal for up to 16V
(d) Operation Current : 2.5A~14.0A
(e) Maximum Voltage : 16V
(f) Temperature Range : -40℃ to 85℃

2. Agency Recognition

UL : File No. E211981
C-UL: File No. E211981
TÜV: File No. R 50004084

3. Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Max.Time to trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							R_{MIN}	R_{1MAX}
	I_H, A	I_T, A	at 5x I_H	I_{MAX}, A	V_{MAX}, Vdc	Pd, W	Ω	Ω
RDL16V250	2.5	4.7	5.0	100	16	1.0	0.022	0.053
RDL16V300	3.0	5.1	2.0	100	16	2.3	0.034	0.105
RDL16V400	4.0	6.8	3.5	100	16	2.4	0.020	0.063
RDL16V500	5.0	8.5	3.6	100	16	2.6	0.014	0.044
RDL16V500K	5.0	8.5	3.6	100	16	2.6	0.014	0.044
RDL16V600	6.0	10.2	5.8	100	16	2.8	0.009	0.033
RDL16V700	7.0	11.9	8.0	100	16	3.0	0.006	0.021
RDL16V800	8.0	13.6	9.0	100	16	3.0	0.005	0.018
RDL16V900	9.0	15.3	12.0	100	16	3.3	0.004	0.015
RDL16V1000	10.0	17.0	12.5	100	16	3.3	0.003	0.012
RDL16V1100	11.0	18.7	13.5	100	16	3.7	0.003	0.010
RDL16V1200	12.0	20.4	16.0	100	16	4.2	0.002	0.009
RDL16V1400	14.0	23.8	20.0	100	16	4.6	0.002	0.008

I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V max).
Pd=Typical power dissipated from device when in the tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃ 1 hour after tripping .
Physical specifications:
Lead material: RDL16V250 Tin plated copper, 24 AWG.
RDL16V300~RDL16V1100 Tin plated copper,20 AWG.
RDL16V1200~RDL16V1400 Tin plated copper,18 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy ,meet UL-94V-O requirement.

RoHS

4. Production Dimensions (mm)

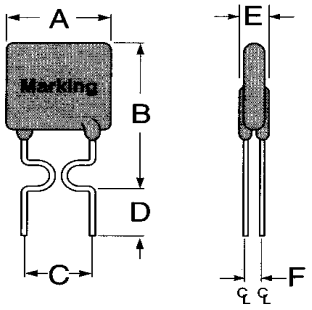


Figure 1
Lead Size: 24AWG
Φ 0.51 mm Diameter

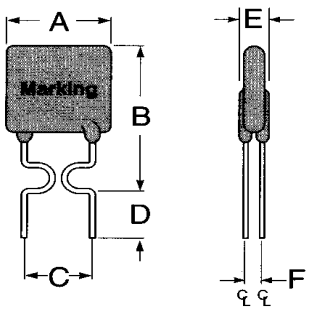


Figure 2
Lead Size: 20AWG
Φ 0.81 mm Diameter

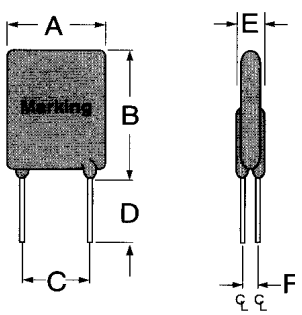


Figure 3
Lead Size: 20AWG
Φ 0.81 mm Diameter

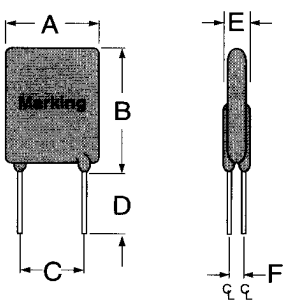
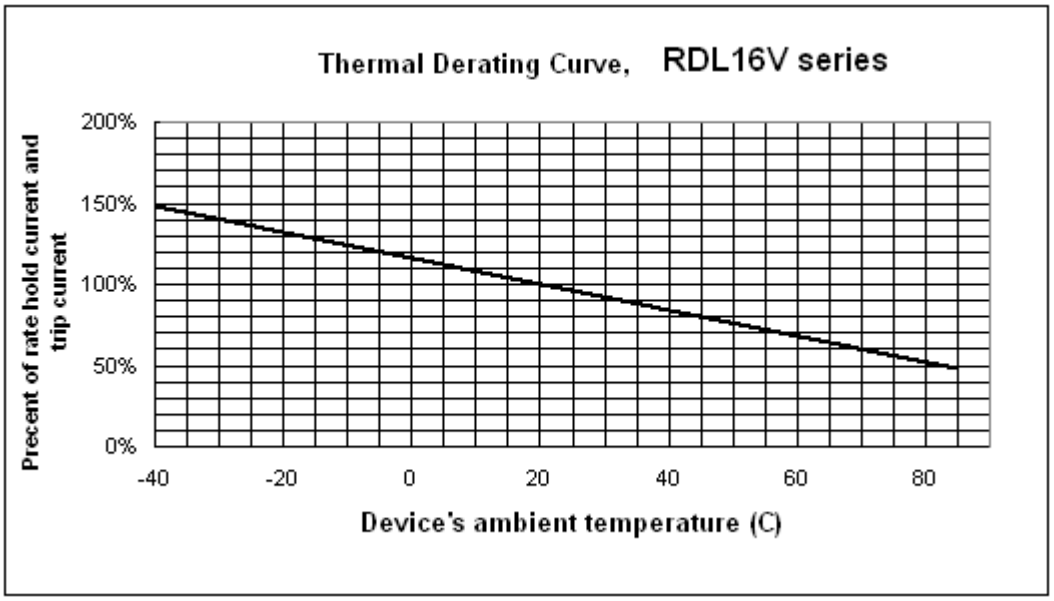


Figure 4
Lead Size: 18AWG
Φ 1.0 mm Diameter

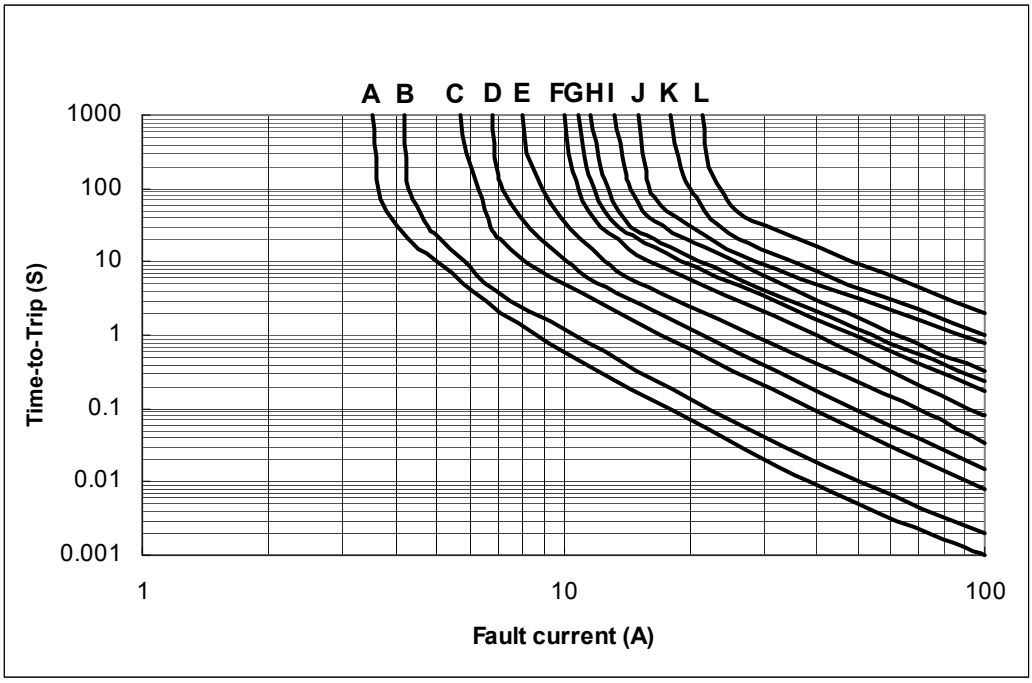
Part Number	Fig	A	B	C	D	E	F
		max	max	typ	min	max	typ
RDL16V250	1	8.9	12.8	5.1	7.6	3.0	1.2
RDL16V300	3	7.1	11.0	5.1	7.6	3.0	1.2
RDL16V400	3	8.9	12.8	5.1	7.6	3.0	1.2
RDL16V500	3	10.4	14.3	5.1	7.6	3.0	1.2
RDL16V500K	2	10.4	18.7	5.1	7.6	3.0	1.2
RDL16V600	3	10.7	17.1	5.1	7.6	3.0	1.2
RDL16V700	3	11.2	19.7	5.1	7.6	3.0	1.2
RDL16V800	3	12.7	20.9	5.1	7.6	3.0	1.2
RDL16V900	3	14.0	21.7	5.1	7.6	3.0	1.2
RDL16V1000	3	16.5	24.1	5.1	7.6	3.0	1.2
RDL16V1100	3	17.5	26.0	5.1	7.6	3.0	1.2
RDL16V1200	3	17.5	28.0	10.2	7.6	3.6	1.4
RDL16V1400	3	27.9	27.9	10.2	7.6	3.6	1.4

5. Thermal Derating Curve



6. Typical Time-To-Trip at 23℃

A=RDL16V250
B=RDL16V300
C=RDL16V400
D=RDL16V500/
RDL16V500K
E=RDL16V600
F=RDL16V700
G=RDL16V800
H=RDL16V900
I=RDL16V1000
J=RDL16V1100
K=RDL16V1200
L=RDL16V 1400

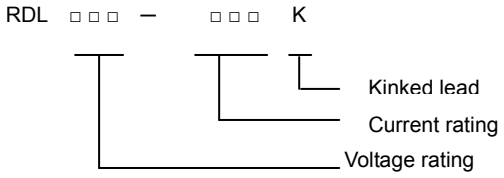


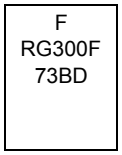
7. Material Specification

Lead material： RDL16V250 Tin plated copper, 24 AWG.
RDL16V300~RDL16V1100 Tin plated copper, 20 AWG.
RDL16V1200~RDL16V1400 Tin plated copper, 18 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

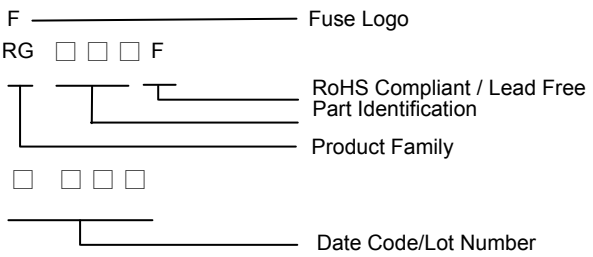
Part Numbering System





Example

Part Marking System



Radial Leaded PTC Resettable Fuse: RDL30V Series

1.Summary

(g) RoHs Compliant (Lead Free) Product
(h) Applications: Wide variety of electronic equipment
(i) Product Features: Low resistance, High hold current, Solid state, Radial leaded product ideal for up to 30V
(j) Operation Current: 900mA~9.0A
(k) Maximum Voltage: 30V
(l) Temperature Range : -40℃ to 85℃

2. Agency Recognition

UL: File No. E211981
C-UL: File No. E211981
TÜV: File No. R 50004084

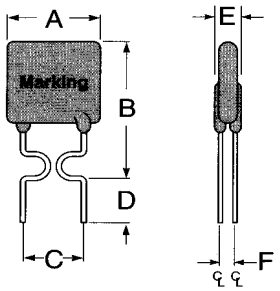
3.Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Max.Time To Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							R_{MIN}	R_{1MAX}
	I_H, A	I_T, A	at 5xI_H	I_{MAX}, A	V_{MAX}, Vdc	Pd, W	Ω	Ω
RDL30V090	0.90	1.80	5.9	40	30	0.6	0.070	0.22
RDL30V110	1.10	2.20	6.6	40	30	0.7	0.050	0.17
RDL30V135	1.35	2.70	7.3	40	30	0.8	0.040	0.13
RDL30V160	1.60	3.20	8.0	40	30	0.9	0.030	0.11
RDL30V185	1.85	3.70	8.7	40	30	1.0	0.030	0.09
RDL30V250	2.50	5.00	10.3	40	30	1.2	0.020	0.07
RDL30V300	3.00	6.00	10.8	40	30	2.0	0.020	0.08
RDL30V400	4.00	8.00	12.7	40	30	2.5	0.010	0.05
RDL30V500	5.00	10.00	14.5	40	30	3.0	0.010	0.05
RDL30V600	6.00	12.00	16.0	40	30	3.5	0.005	0.04
RDL30V700	7.00	14.00	17.5	40	30	3.8	0.005	0.03
RDL30V800	8.00	16.00	18.8	40	30	4.0	0.005	0.02
RDL30V900	9.00	18.00	20.0	40	30	4.2	0.005	0.02

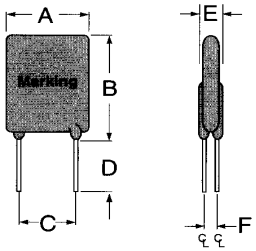
I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃, 1 hour after tripping.
Physical specifications:
Lead material: RDL30V090~RDL30V250 Tin plated copper, 24 AWG.
RDL30V300~RDL30V900 Tin plated copper, 20 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

RoHS

4.Production Dimensions (mm)



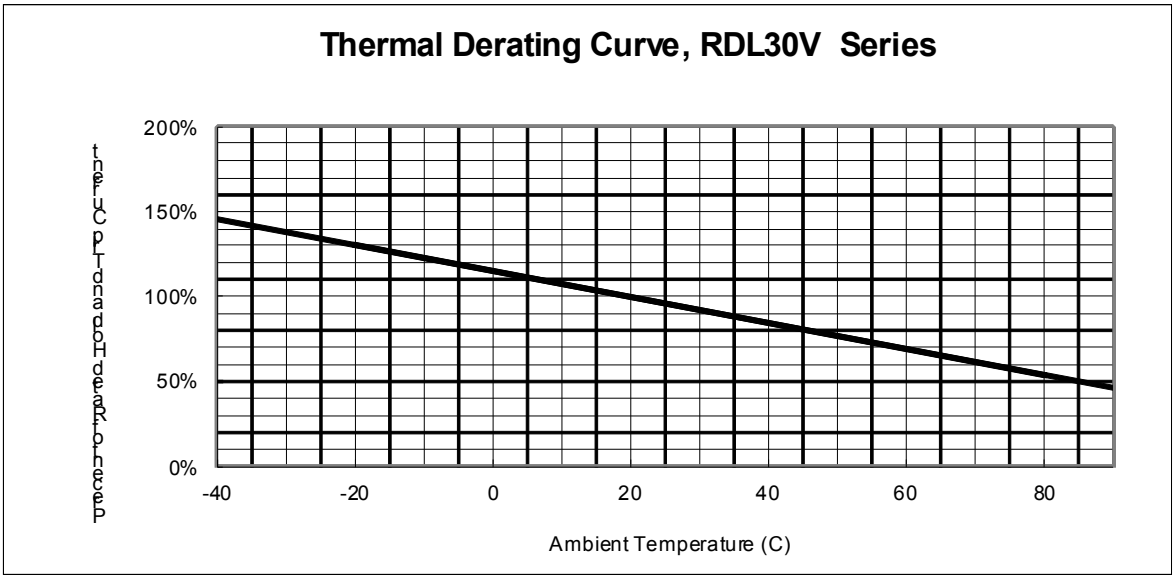
RDL30V 090 ~ RDL30V250
Lead Size: 24AWG
Φ 0.51 mm Diameter



RDL30V300 ~ RDL30V900
Lead Size: 20AWG
Φ 0.81 mm Diameter

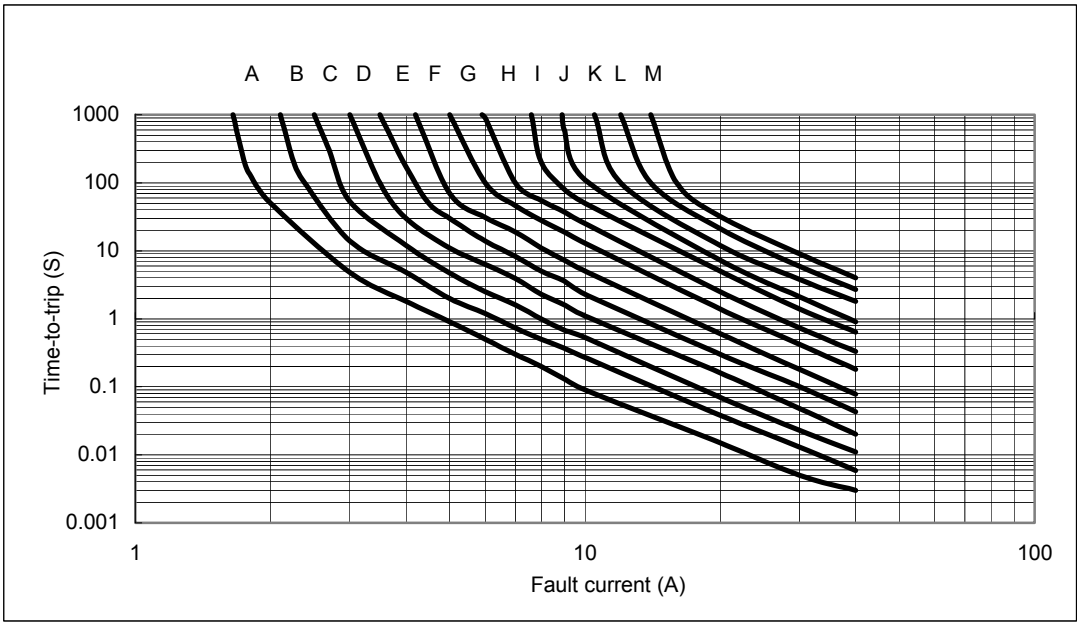
Part Number	A	B	C	D	E	F
	max	max	typ	min	max	typ
RDL30V090	7.4	12.2	5.1	7.6	3.0	0.9
RDL30V110	7.4	14.2	5.1	7.6	3.0	0.9
RDL30V135	8.9	13.5	5.1	7.6	3.0	0.9
RDL30V160	8.9	15.2	5.1	7.6	3.0	0.9
RDL30V185	10.2	15.7	5.1	7.6	3.0	0.9
RDL30V250	11.4	18.3	5.1	7.6	3.0	0.9
RDL30V300	11.4	17.3	5.1	7.6	3.0	1.2
RDL30V400	14.0	20.1	5.1	7.6	3.0	1.2
RDL30V500	14.0	24.9	10.2	7.6	3.0	1.2
RDL30V600	16.5	24.9	10.2	7.6	3.0	1.2
RDL30V700	19.1	26.7	10.2	7.6	3.0	1.2
RDL30V800	21.6	29.2	10.2	7.6	3.0	1.2
RDL30V900	24.1	29.7	10.2	7.6	3.0	1.2

5.Thermal Derating Curve



6. Typical Time-To-Trip at 23℃

A =RDL30V090
B =RDL30V110
C =RDL30V135
D =RDL30V160
E =RDL30V185
F =RDL30V250
G =RDL30V300
H =RDL30V400
I =RDL30V500
J =RDL30V600
K =RDL30V700
L =RDL30V800
M =RDL30V900

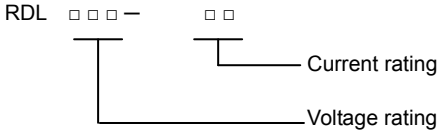


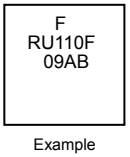
7. Material Specification

Lead material： RDL30V090~RDL30V250 Tin plated copper, 24 AWG.
RDL30V300~RDL30V900 Tin plated copper, 20 AWG.
Soldering characteristics: MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

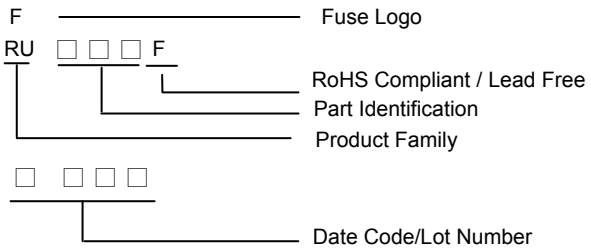
Part Numbering System





Example

Part Marking System



Radial Leaded PTC Resettable Fuse : RDL-H Series

1.Summary

(a) RoHS Compliant (Lead Free) Product
(b) Applications : Wide variety of electronic equipment
(c) Product Features : Very Low resistance, Very High hold current, Solid state, Radial leaded product ideal for up to 16V and Operating temperatures up to 125℃.
(d) Operation Current : 0.5A~15.0A
(e) Maximum Voltage : 16V~30V
(f) Temperature Range : -40℃ to 125℃

2.Agency Recognition

UL: File No. E211981
C-UL: File No. E211981
*Note: RDL30V050H,RDL30V070H and RDL30V100H UL, C-UL Pending

3.Electrical Characteristics (23℃)

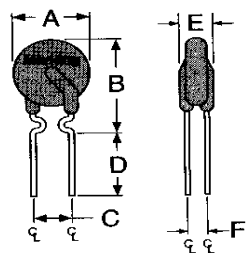
Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							R_{MIN}	R_{1MAX}
	I_H, A	I_T, A	at 5xI_H, Sec	I_{MAX}, A	V_{MAX} ,V_{DC}	Pd, W	Ω	Ω
RDL30V050H	0.5	0.9	2.5	40	30	0.9	0.4800	1.1000
RDL30V070H	0.7	1.4	3.2	40	30	1.4	0.3000	0.8000
RDL30V100H	1.0	1.8	5.2	40	30	1.4	0.1800	0.4300
RDL16V200H	2.0	3.8	3.0	100	16	1.4	0.0450	0.1100
RDL16V300H	3.0	6.0	5.0	100	16	3.0	0.0330	0.0790
RDL16V400H	4.0	7.0	5.0	100	16	3.3	0.0240	0.0600
RDL16V450H	4.5	7.8	3.0	100	16	3.6	0.0220	0.0540
RDL16V550H	5.5	10.0	6.0	100	16	3.5	0.0150	0.0370
RDL16V600H	6.0	10.8	5.0	100	16	4.1	0.0130	0.0320
RDL16V650H	6.5	12.0	5.5	100	16	4.3	0.0110	0.0260
RDL16V700H	7.0	13.0	7.0	100	16	4.0	0.0100	0.0250
RDL16V750H	7.5	13.1	7.0	100	16	4.5	0.0094	0.0220
RDL16V800H	8.0	15.0	8.0	100	16	4.2	0.0080	0.0200
RDL16V900H	9.0	16.5	10.0	100	16	5.0	0.0074	0.0170
RDL16V1000H	10.0	18.5	9.0	100	16	5.3	0.0062	0.0150
RDL16V1100H	11.0	20.0	11.0	100	16	5.5	0.0055	0.0130
RDL16V1300H	13.0	24.0	13.0	100	16	6.9	0.0041	0.0100
RDL16V1400H	14.0	27.0	13.0	100	16	6.9	0.0030	0.0090
RDL16V1500H	15.0	28.0	20.0	100	16	7.0	0.0032	0.0092

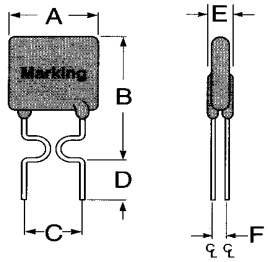
I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃, 1 hour after tripping .

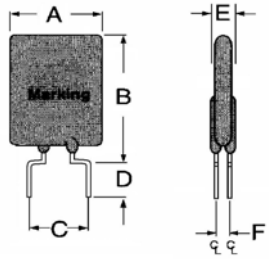
RoHS

Physical specifications:
Lead material: RDL30V050H~RDL30V100H and RDL16V200H Tin plated copper, 24 AWG.
RDL16V300H~RDL16V1100H Tin plated copper, 20 AWG.
RDL16V1300H~RDL16V1500H Tin plated copper, 18 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

4.Production Dimensions (mm)







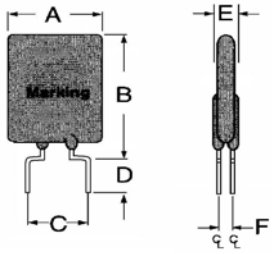


Figure 1
Lead Size :24AWG
Φ0.51 mm Diameter

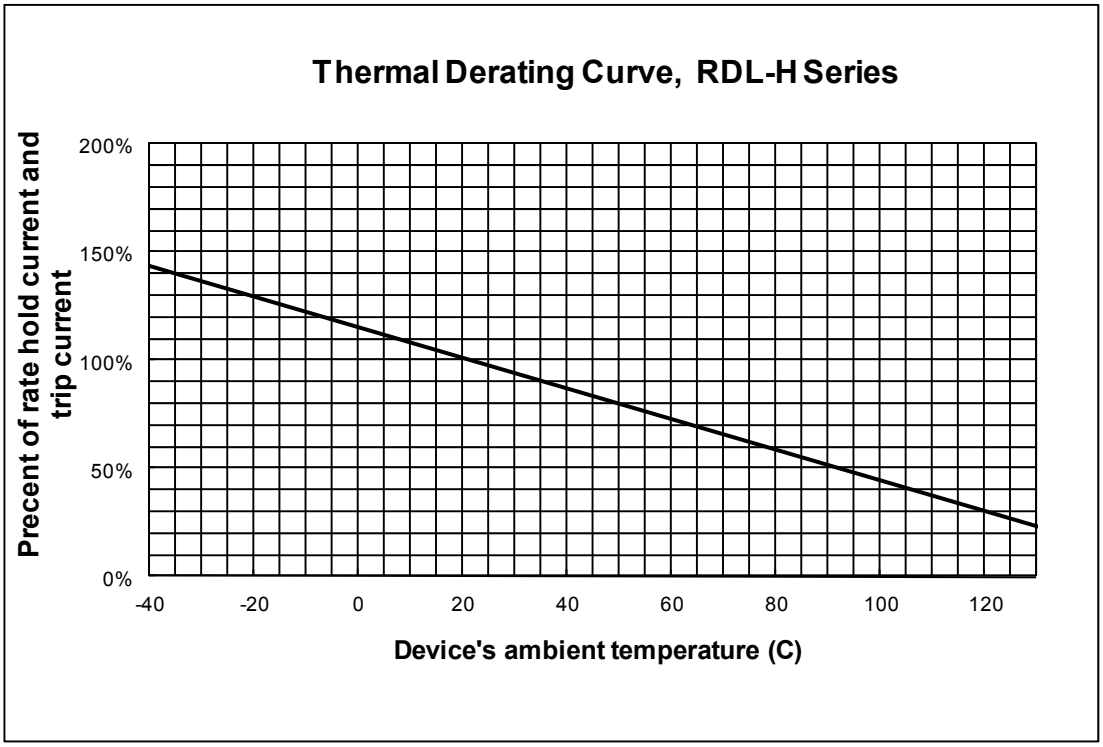
Figure 2
Lead Size :24AWG
Φ0.51 mm Diameter

Figure 3
Lead Size : 20AWG
Φ 0.81 mm Diameter

Figure 4
Lead Size : 18AWG
Φ 1.00 mm Diameter

Part Number	Figure	A	B	C	D	E	F
		max	max	typ	min	max	typ
RDL30V050H	1	7.4	12.7	5.1	7.6	3.0	1.2
RDL30V070H	2	6.9	10.8	5.1	7.6	3.0	1.2
RDL30V100H	1	9.7	13.6	5.1	7.6	3.0	1.2
RDL16V200H	1	9.4	14.4	5.1	7.6	3.0	1.2
RDL16V300H	3	8.8	13.8	5.1	7.6	3.0	1.2
RDL16V400H	3	10.0	15.0	5.1	7.6	3.0	1.2
RDL16V450H	3	10.4	15.6	5.1	7.6	3.0	1.2
RDL16V550H	3	11.2	18.9	5.1	7.6	3.0	1.2
RDL16V600H	3	11.2	21.0	5.1	7.6	3.0	1.2
RDL16V650H	3	12.7	22.2	5.1	7.6	3.0	1.2
RDL16V700H	3	14.0	21.9	5.1	7.6	3.0	1.2
RDL16V750H	3	14.0	23.5	5.1	7.6	3.0	1.2
RDL16V800H	3	16.5	22.5	5.1	7.6	3.0	1.2
RDL16V900H	3	16.5	25.7	5.1	7.6	3.0	1.2
RDL16V1000H	3	17.5	26.5	10.2	7.6	3.0	1.2
RDL16V1100H	3	21.0	26.1	10.2	7.6	3.0	1.2
RDL16V1300H	4	23.5	28.7	10.2	7.6	3.6	1.4
RDL16V1400H	4	23.5	28.7	10.2	7.6	3.6	1.4
RDL16V1500H	4	23.5	28.7	10.2	7.6	3.6	1.4

5.Thermal Derating Curve



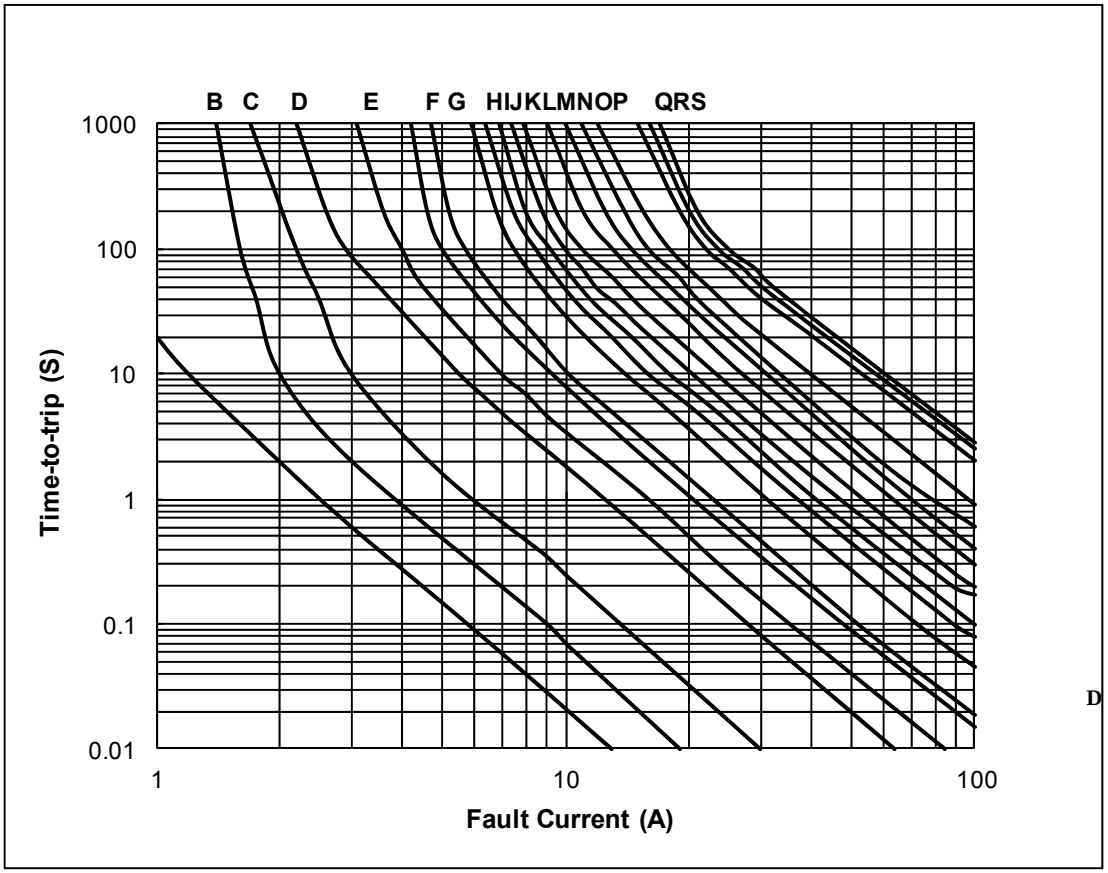
6.Typical Time-To-Trip at 23℃

A=RDL30V050H
B=RDL30V070H
C=RDL30V100H
D=RDL16V200H
E=RDL16V300H

F=RDL16V400H
G=RDL16V450H
H=RDL16V550H

I=RDL16V600H
J=RDL16V650H
K=RDL16V700H
L=RDL16V750H
M=RDL16V800H
N=RDL16V900H

O=RDL16V1000H
P=RDL16V1100H
Q=RDL16V1300H
R=RDL16V1400H
S=RDL16V1500H

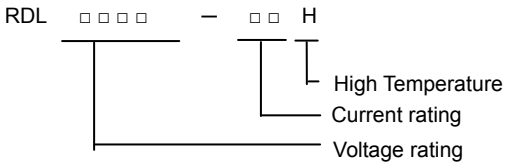


7.Material Specification

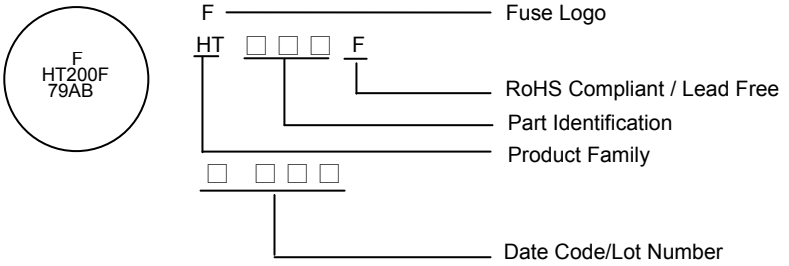
Lead material： RDL30V050H~RDL30V100H and RDL16V200H Tin plated copper, 24 AWG.
RDL16V300H~RDL16V1100H Tin plated copper, 20 AWG.
RDL16V1300H~RDL16V1500H Tin plated copper, 18 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

8.Part Numbering and Marking System

Part Numbering System



Part Marking System



Radial Leaded PTC Resettable Fuse: RDL33V Series

1. Summary

(m) RoHS Compliant (Lead Free) Product
(n) Applications: IEEE 1394 FireWire, Computers & Consumer electronics
(o) Product Features: Fast trip time, Lower Trip-to-hold Ratio, Radial-leaded product ideal for up to 36V
(p) Operation Current: 500mA~2.50A
(q) Maximum Voltage: 36V
(r) Temperature Range : -40℃ to 85℃

2. Agency Recognition

UL: E211981
C-UL: E211981
TUV : R50004084

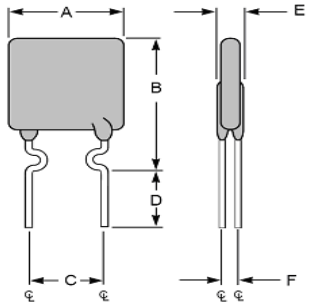
3. Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
						R_{MIN}	R_{1MAX}
	I_H,A	I_T,A	I_{MAX},A	V_{MAX},Vdc	Pd, W	Ω	Ω
RDL33V050	0.50	1.10	40	36	0.67	0.140	0.448
RDL33V075	0.75	1.50	40	36	0.71	0.115	0.368
RDL33V090	0.90	1.80	40	36	0.74	0.090	0.288
RDL33V120	1.20	2.30	40	36	0.78	0.074	0.180
RDL33V135	1.35	2.50	40	36	0.84	0.059	0.143
RDL33V160	1.60	2.75	40	36	0.86	0.041	0.131
RDL33V190	1.90	3.00	40	36	0.90	0.045	0.092
RDL33V220	2.20	3.50	40	36	0.95	0.025	0.080
RDL33V250	2.50	4.00	40	36	0.99	0.020	0.064

I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃, 1 hour after tripping .
Physical specifications:
Lead material: Tin plated copper, 24 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

RoHS

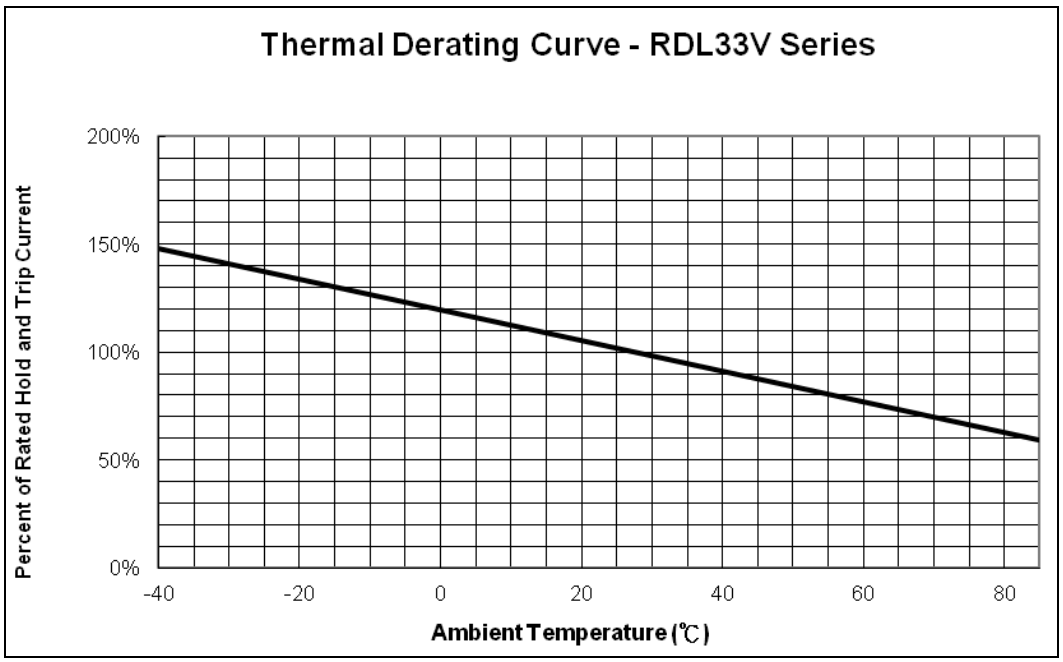
4. Production Dimensions (mm)



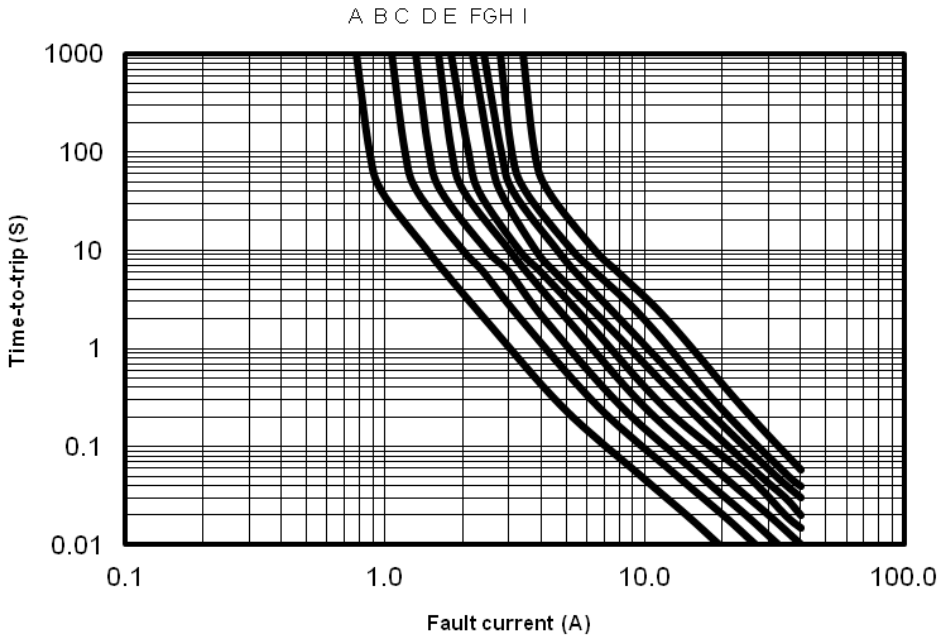
Lead Size :24AWG,
Φ 0.51 mm Diameter

Part Number	A	B	C	D	E	F
	max	max	typ	min	max	typ
RDL33V050	7.4	12.2	5.1	7.6	3.0	1.1
RDL33V075	7.4	12.2	5.1	7.6	3.0	1.1
RDL33V090	7.4	12.2	5.1	7.6	3.0	1.1
RDL33V120	7.4	12.2	5.1	7.6	3.0	1.1
RDL33V135	7.4	14.2	5.1	7.6	3.0	1.1
RDL33V160	7.4	14.0	5.1	7.6	3.0	1.1
RDL33V190	9.0	13.5	5.1	7.6	3.0	1.1
RDL33V220	10.0	17.0	5.1	7.6	3.0	1.1
RDL33V250	10.0	19.5	5.1	7.6	3.0	1.1

5. Thermal Derating Curve



6. Typical Time-To-Trip at 23℃



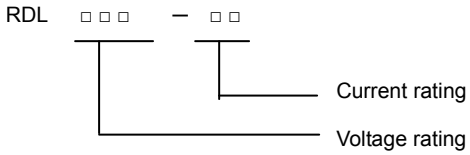
A=RDL33V050
B=RDL33V075
C=RDL33V 090
D=RDL33V120
E=RDL33V135
F=RDL33V160
G=RDL33V190
H=RDL33V220
I =RDL33V250

7. Material Specification

Lead material： Tin plated copper, 24 AWG.
Soldering characteristics: MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

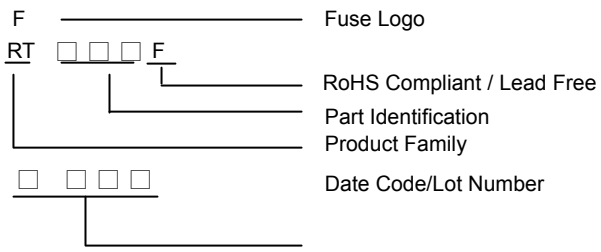
8. Part Numbering and Marking System

Part Numbering System



Part Marking System

Example



Radial Leaded PTC Resettable Fuse : RDL60V Series

1.Summary

(s) RoHS Compliant (Lead Free) Product
(t) Applications : Wide variety of electronic equipment
(u) Product Features : Low hold current, Solid state, Radial leaded product ideal for up to 60V
(v) Operation Current : 50mA~3.75A
(w) Maximum Voltage : 60V
(x) Temperature Range : -40℃ to 85℃

2. Agency Recognition

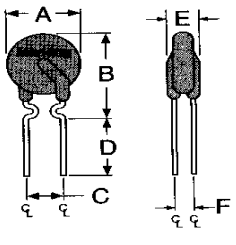
UL : File No. E211981
C-UL: File No. E211981
TÜV: File No. R 50004084

3. Electrical Characteristics (23℃)

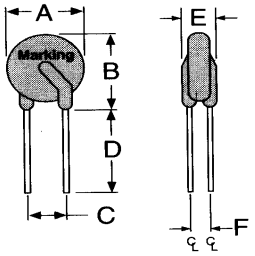
Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							R_{MIN}	R_{1MAX}
	I_H,A	I_T,A	at 5xI_H	I_{MAX},A	V_{MAX},V_{DC}	Pd, W	Ω	Ω
RDL60V005	0.05	0.10	5.0	40	60	0.26	7.30	20.0
RDL60V010	0.10	0.20	4.0	40	60	0.38	2.50	7.50
RDL60V017	0.17	0.34	3.0	40	60	0.48	2.00	8.00
RDL60V020	0.20	0.40	2.2	40	60	0.41	1.83	4.40
RDL60V025	0.25	0.50	2.5	40	60	0.45	1.25	3.00
RDL60V030	0.30	0.60	3.0	40	60	0.49	0.88	2.10
RDL60V040	0.40	0.80	3.8	40	60	0.56	0.55	1.29
RDL60V050	0.50	1.00	4.0	40	60	0.77	0.50	1.17
RDL60V065	0.65	1.30	5.3	40	60	0.88	0.31	0.72
RDL60V075	0.75	1.50	6.3	40	60	0.92	0.25	0.60
RDL60V090	0.90	1.80	7.2	40	60	0.99	0.20	0.47
RDL60V110	1.10	2.20	8.2	40	60	1.50	0.15	0.38
RDL60V135	1.35	2.70	9.6	40	60	1.70	0.12	0.30
RDL60V160	1.60	3.20	11.4	40	60	1.90	0.09	0.22
RDL60V185	1.85	3.70	12.6	40	60	2.10	0.08	0.19
RDL60V250	2.50	5.00	15.6	40	60	2.50	0.05	0.13
RDL60V300	3.00	6.00	19.8	40	60	2.80	0.04	0.10
RDL60V375	3.75	7.50	24.0	40	60	3.20	0.03	0.08

I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃, 1 hour after tripping .
Physical specifications:
Lead material: RDL60V010~RDL60V090 Tin plated copper, 24 AWG.
RDL60V110~RDL60V375 Tin plated copper, 20 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

4. Production Dimensions (mm)



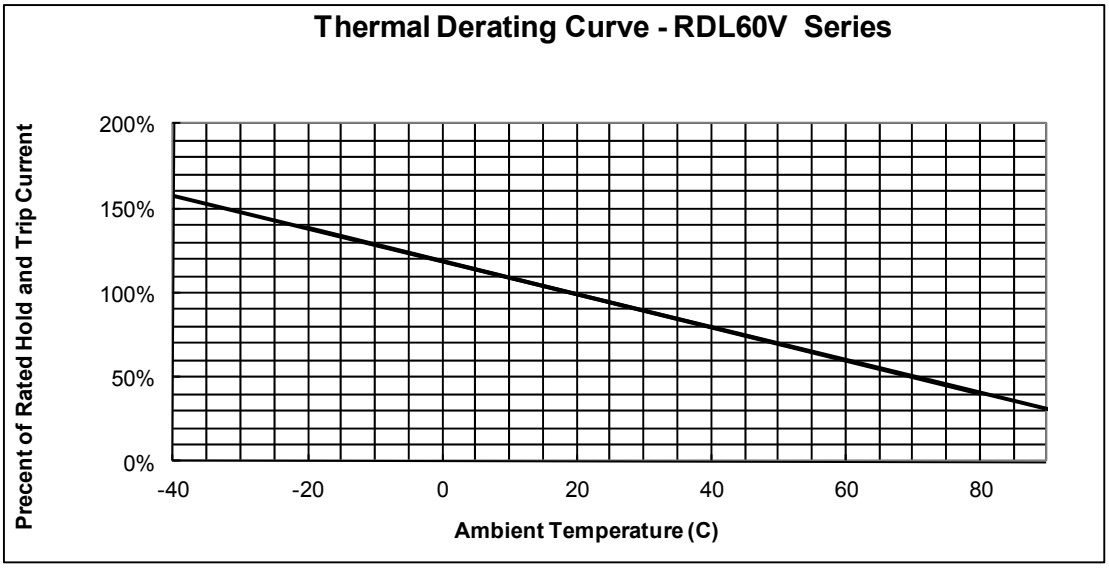
RDL60V 005 ~ RDL60V 090
Lead Size : 24AWG
Φ 0.51 mm Diameter



RDL60V 110 ~ RDL60V375
Lead Size : 20AWG
Φ 0.81 mm Diameter

Part Number	A	B	C	D	E	F
	max	max	typ	min	max	typ
RDL60V005	7.4	12.7	5.1	7.6	3.1	1.1
RDL60V010	7.4	12.7	5.1	7.6	3.1	1.1
RDL60V017	7.4	12.7	5.1	7.6	3.1	1.1
RDL60V020	7.4	12.7	5.1	7.6	3.1	1.1
RDL60V025	7.4	12.7	5.1	7.6	3.1	1.1
RDL60V030	7.4	13.0	5.1	7.6	3.1	1.1
RDL60V040	7.6	13.5	5.1	7.6	3.1	1.1
RDL60V050	7.9	13.7	5.1	7.6	3.1	1.1
RDL60V065	9.7	14.5	5.1	7.6	3.1	1.1
RDL60V075	10.4	15.2	5.1	7.6	3.1	1.1
RDL60V090	11.7	15.8	5.1	7.6	3.1	1.1
RDL60V110	13.0	18.0	5.1	7.6	3.1	1.4
RDL60V135	14.5	19.6	5.1	7.6	3.1	1.4
RDL60V160	16.3	21.3	5.1	7.6	3.1	1.4
RDL60V185	17.8	22.9	5.1	7.6	3.1	1.4
RDL60V250	21.3	26.4	10.2	7.6	3.1	1.4
RDL60V300	24.9	30.0	10.2	7.6	3.1	1.4
RDL60V375	28.5	33.5	10.2	7.6	3.1	1.4

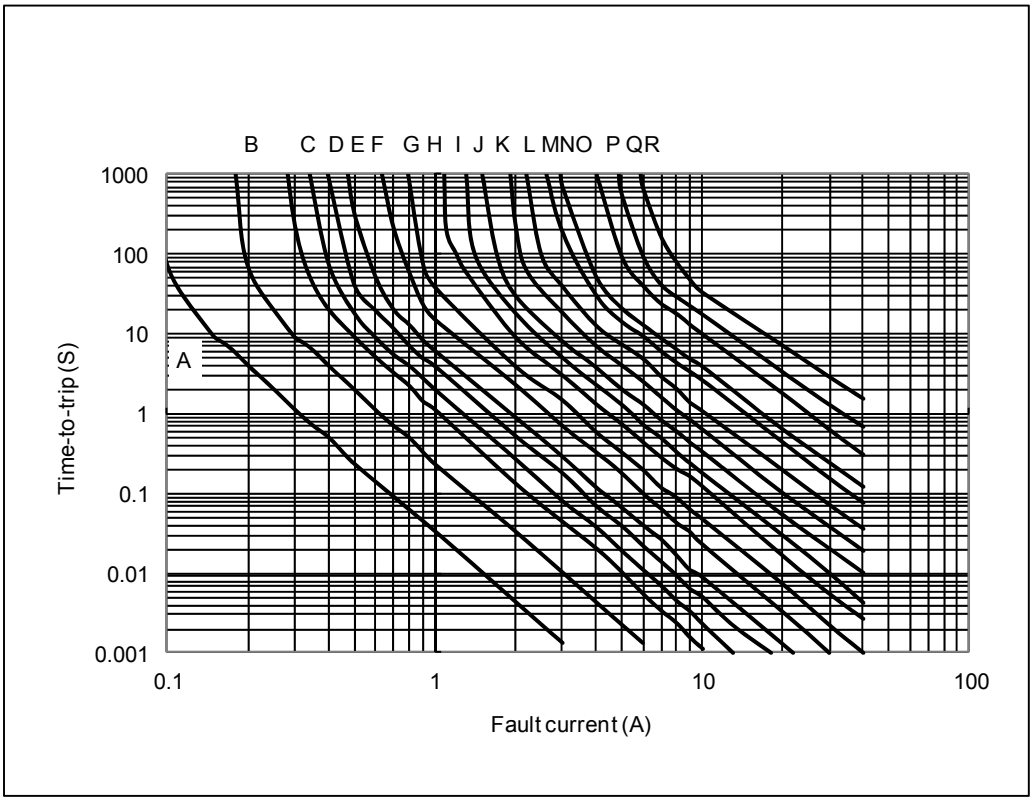
5. Thermal Derating Curve



RoHS

6. Typical Time-To-Trip at 23℃

A =RDL60V005
B =RDL60V010
C =RDL60V017
D =RDL60V020
E =RDL60V025
F =RDL60V030
G =RDL60V040
H =RDL60V050
I =RDL60V065
J =RDL60V075
K =RDL60V090
L =RDL60V110
M =RDL60V135
N =RDL60V160
O =RDL60V185
P =RDL60V250
Q=RDL60V300
R =RDL60V375

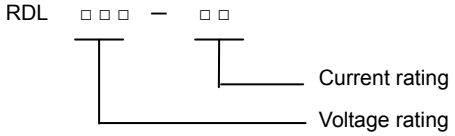


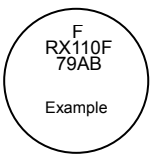
7. Material Specification

Lead material： RDL60V005~RDL60V090 Tin plated copper,24 AWG.
RDL60V110~RDL60V375 Tin plated copper, 20 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-O requirement

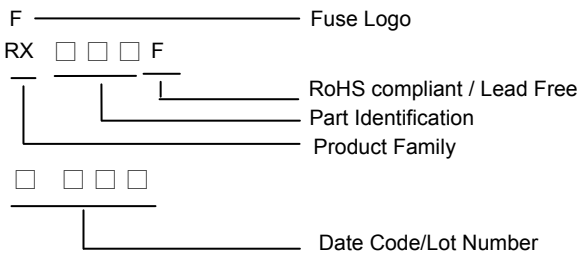
8. Part Numbering and Marking System

Part Numbering System





Part Marking System



Radial Leaded PTC Resettable Fuse : RDL120V Series

1. Summary

(y) RoHS Compliant (Lead Free) product
(z) Applications : Wide variety of electronic equipment
(aa) Product Features : Solid state, Radial leaded product ideal for up to 135$V_{AC/DC}$
(bb) Operation Current : 100mA~3.75A
(cc) Maximum Operating Voltage : 120$V_{AC/DC}$
(dd) Maximum Interrupt Voltage : 135$V_{AC/DC}$
(ee) Temperature Range : -40℃ to 85℃

2. Agency Recognition

UL :File No. E211981
C-UL:File No. E211981: RDL120V010~RDL120V030、RDL120V075 and RDL120V135~RDL120V375
TÜV :File No. R50122733

3. Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							R_{MIN}	R_{1MAX}
	I_H, A	I_T, A	at 5XI_H, Sec	I_{MAX},A	V_{MAX},V_{DC}	Pd, W	Ω	Ω
RDL120V010	0.10	0.20	10.0	2.0	120	0.84	3.00	7.50
RDL120V017	0.17	0.34	10.0	2.0	120	0.84	2.00	7.00
RDL120V020	0.20	0.40	9.0	2.0	120	1.08	1.83	4.40
RDL120V025	0.25	0.50	7.5	3.0	120	1.08	1.25	3.00
RDL120V030	0.30	0.60	8.5	3.0	120	1.44	0.88	2.10
RDL120V040	0.40	0.80	6.5	3.0	120	1.44	0.55	1.29
RDL120V050	0.50	1.00	6.0	3.0	120	1.56	0.50	1.17
RDL120V065	0.65	1.30	5.7	5.0	120	1.68	0.31	0.72
RDL120V070	0.75	1.50	6.3	5.0	120	1.80	0.25	0.60
RDL120V075	0.75	1.50	15.0	7.5	120	2.64	0.25	0.69
RDL120V090	0.90	1.80	7.2	5.0	120	1.80	0.20	0.47
RDL120V100	1.00	2.00	15.0	10.0	120	2.64	0.18	0.47
RDL120V110	1.10	2.20	8.2	8.0	120	2.28	0.15	0.38
RDL120V125	1.25	2.50	20.0	12.5	120	2.88	0.11	0.33
RDL120V130	1.35	2.70	9.6	10.0	120	2.64	0.12	0.30
RDL120V135	1.35	2.70	20.0	13.5	120	3.12	0.11	0.30
RDL120V160	1.60	3.20	11.4	12.0	120	3.12	0.09	0.22
RDL120V185	1.85	3.70	12.6	12.0	120	3.36	0.08	0.19
RDL120V200	2.00	4.20	36.0	20.0	120	4.32	0.08	0.21
RDL120V250	2.50	5.00	15.6	15.0	120	4.44	0.05	0.13
RDL120V300	3.00	6.00	19.8	17.0	120	4.56	0.04	0.10
RDL120V375	3.75	7.50	24.0	20.0	120	4.80	0.03	0.08

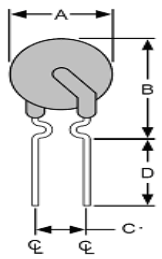
I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃, 1 hour after tripping .

RoHS

Physical specifications:
Lead material: Tin plated copper,24AWG.、22AWG、20AWG
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

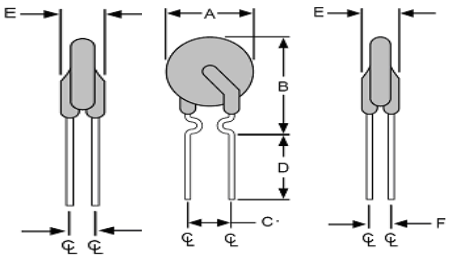
4. Production Dimensions (mm)

Fig 1.



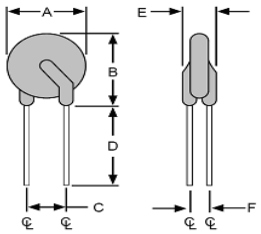
RDL120V010~RDL120V017
Lead S ize :24AWG
Φ 0.51 mm Diameter

Fig 2.



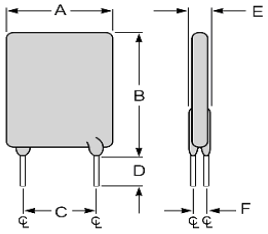
RDL120V020~RDL120V090
Lead Size :22AWG
Φ 0.65 mm Diameter

Fig 3.



RDL120V110~RDL120V375
Lead Size :20AWG
Φ 0.81 mm Diameter

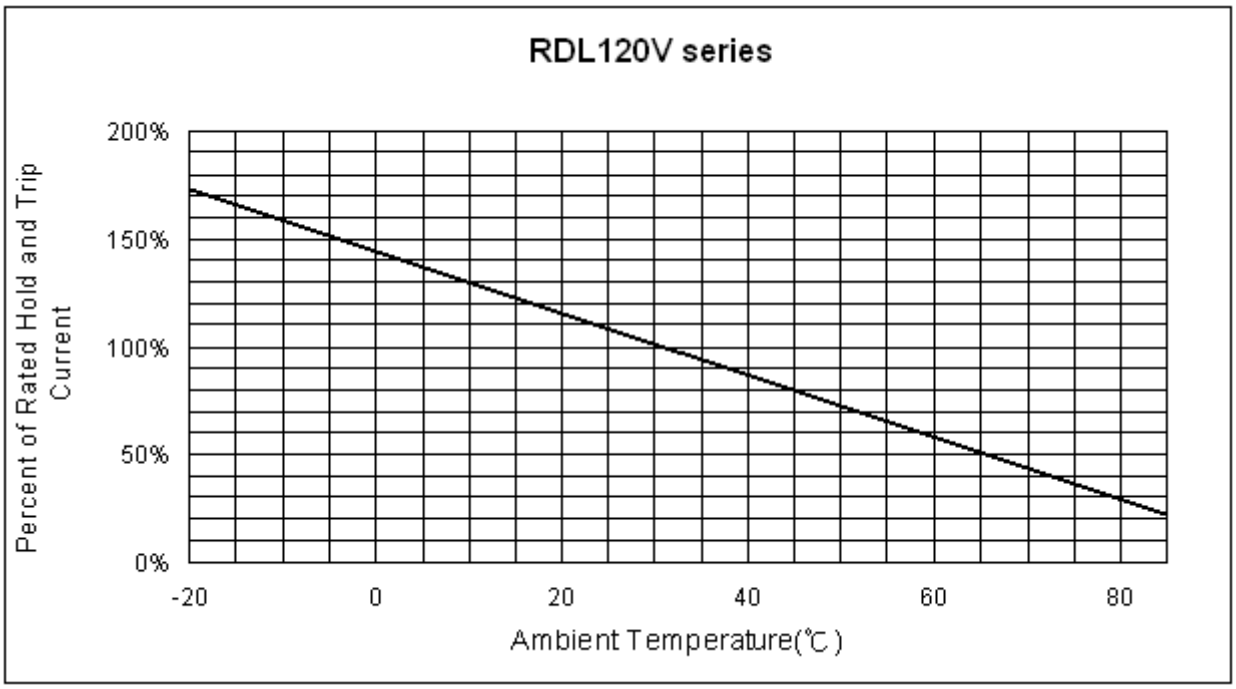
Fig 4.



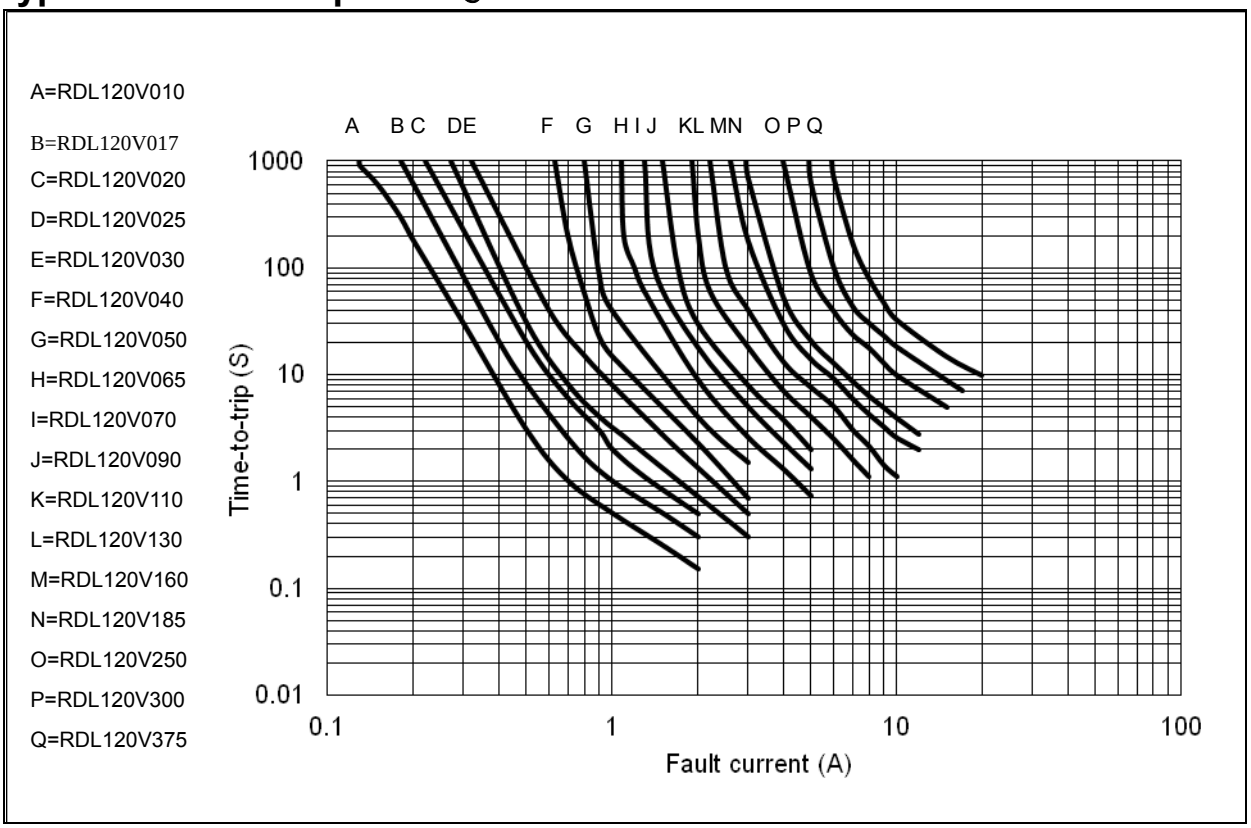
RDL120V075 ~RDL120V200
Lead Size : 20AWG
Φ 0.81 mm Diameter

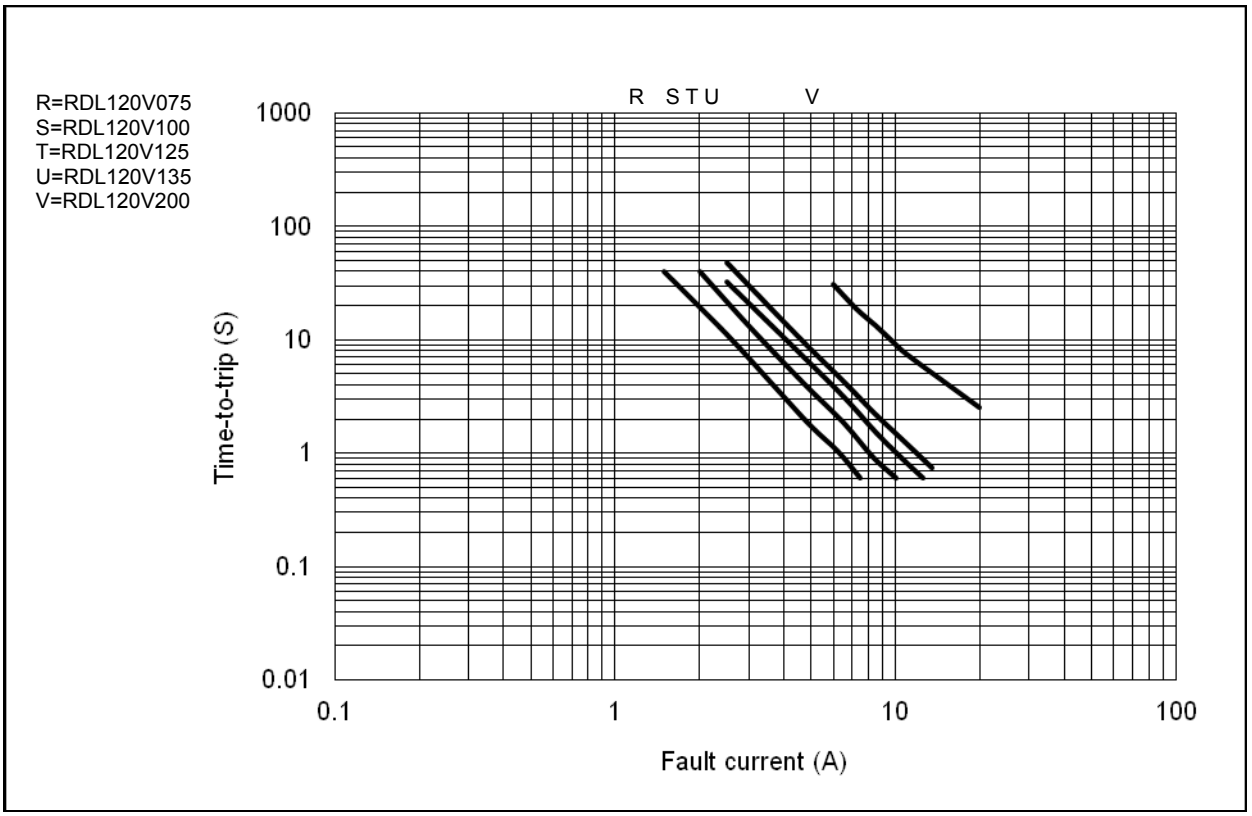
Part Number	Figure	A	B	C	D	E	F
		max	max	typ	min	max	typ
RDL120V010	1	7.9	13.0	5.1	7.6	3.8	2.2
RDL120V017	1	7.9	13.0	5.1	7.6	3.8	2.2
RDL120V020	2	7.9	13.0	5.1	7.6	3.8	2.2
RDL120V025	2	7.9	13.0	5.1	7.6	3.8	2.2
RDL120V030	2	7.9	13.0	5.1	7.6	3.8	2.2
RDL120V040	2	8.2	14.2	5.1	7.6	3.8	2.2
RDL120V050	2	9.2	14.9	5.1	7.6	3.8	2.2
RDL120V065	2	9.7	14.9	5.1	7.6	3.8	2.2
RDL120V070	2	10.6	15.5	5.1	7.6	3.8	2.2
RDL120V075	4	10.9	17.0	5.1	7.6	4.1	2.2
RDL120V090	2	11.9	15.9	5.1	7.6	3.8	2.2
RDL120V100	4	11.5	20.1	5.1	7.6	4.1	2.2
RDL120V110	3	13.3	18.3	5.1	7.6	4.1	2.2
RDL120V125	4	14.0	21.7	5.1	7.6	4.1	2.2
RDL120V130	3	15.5	20.6	5.1	7.6	4.1	2.2
RDL120V135	4	16.3	21.7	5.1	7.6	4.1	2.2
RDL120V160	3	17.5	22.5	5.1	7.6	4.1	2.2
RDL120V185	3	19.9	24.9	5.1	7.6	4.1	2.2
RDL120V200	4	23.5	27.9	10.2	7.6	4.1	2.2
RDL120V250	3	22.5	27.5	10.2	7.6	4.1	2.2
RDL120V300	3	25.5	30.0	10.2	7.6	4.1	2.2
RDL120V375	3	29.5	34.0	10.2	7.6	4.1	2.2

5. Thermal Derating Curve



6. Typical Time-To-Trip at 23℃



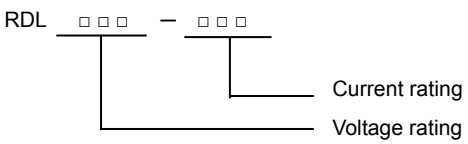


7. Material Specification

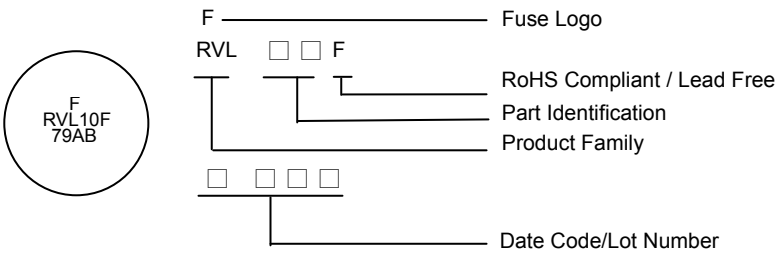
Lead material： RDL120V010~RDL120V017 Tin plated copper, 24 AWG.
RDL120V020~RDL120V090 Tin plated copper, 22 AWG.
RDL120V075~RDL120V375 Tin plated copper, 20 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement

8. Part Numbering and Marking System

Part Numbering System



Part Marking System



Radial Leaded PTC Resettable Fuse: RDL240V Series

1.Summary

(a) RoHS Compliant (Lead Free) Product
(b) Applications: Line Voltage Power Supply, Transformer and Appliances
(c) Product Features: Low hold current, Solid state, Radial leaded product ideal for up to 265$V_{AC/DC}$
(d) Operation Current: 0.05A~2.00A
(e) Maximum Operating Voltage: 240$V_{AC/DC}$
(f) Maximum Interrupt Voltage: 265$V_{AC/DC}$
(g) Temperature Range : RDL240V005~RDL240V055 -40℃ to 85℃
RDL240V075~RDL240V200 -20℃ to 85℃

2. Agency Recognition

UL: *File No. E211981
C-UL: *File No. E211981
TÜV: File No. R50087018
*Note: RDL240V075~RDL240V200 UL and C-UL Pending

3. Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Max.Int Voltage	Typical Power	Resistance	
								R_{MIN}	R_{1MAX}
	IH, A	IT, A	at 5xI_H	I_{MAX}, A	V_{MAX}, V_{AC}	V_{MAX}, V_{AC}	Pd, W	Ω	Ω
RDL240V005	0.05	0.12	15.0	1.0	240	265	0.70	18.50	65.00
RDL240V008	0.08	0.19	15.0	1.2	240	265	0.80	7.40	26.00
RDL240V012	0.12	0.30	15.0	1.2	240	265	1.00	3.00	12.00
RDL240V016	0.16	0.37	15.0	2.0	240	265	1.40	2.50	7.80
RDL240V025	0.25	0.56	18.5	3.5	240	265	1.50	1.30	3.80
RDL240V033	0.33	0.74	18.5	4.5	240	265	1.70	0.83	2.60
RDL240V040	0.40	0.90	24.0	5.5	240	265	2.00	0.60	1.90
RDL240V055	0.55	1.25	26.0	7.0	240	265	3.40	0.45	1.45
RDL240V075	0.75	1.50	18.0	7.5	240	265	2.60	0.32	0.84
RDL240V100	1.00	2.00	21.0	10.0	240	265	2.90	0.22	0.58
RDL240V125	1.25	2.50	23.0	12.5	240	265	3.30	0.17	0.44
RDL240V200	2.00	4.00	28.0	20.0	240	265	4.50	0.09	0.22

I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃, 1 hour after tripping.
Physical specifications:
Lead material: RDL240V005~RDL240V016 Electrolytic tin plated copper, 24AWG.
RDL240V025~RDL240V040 Electrolytic tin plated copper, 22AWG.
RDL240V055~RDL240V200 Electrolytic tin plated copper, 20AWG.
Soldering characteristics: MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

4. Production Dimensions (mm)

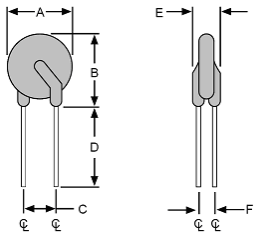


Figure 1
Lead Size: 24AWG
Φ 0.51 mm Diameter

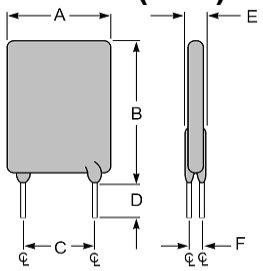


Figure 2
Lead Size: 22AWG
Φ 0.65 mm Diameter

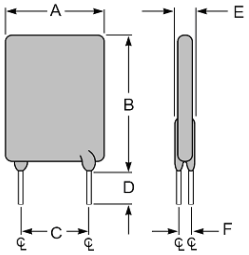


Figure 3
Lead Size: 20AWG
Φ 0.81 mm Diameter

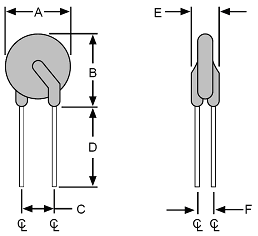
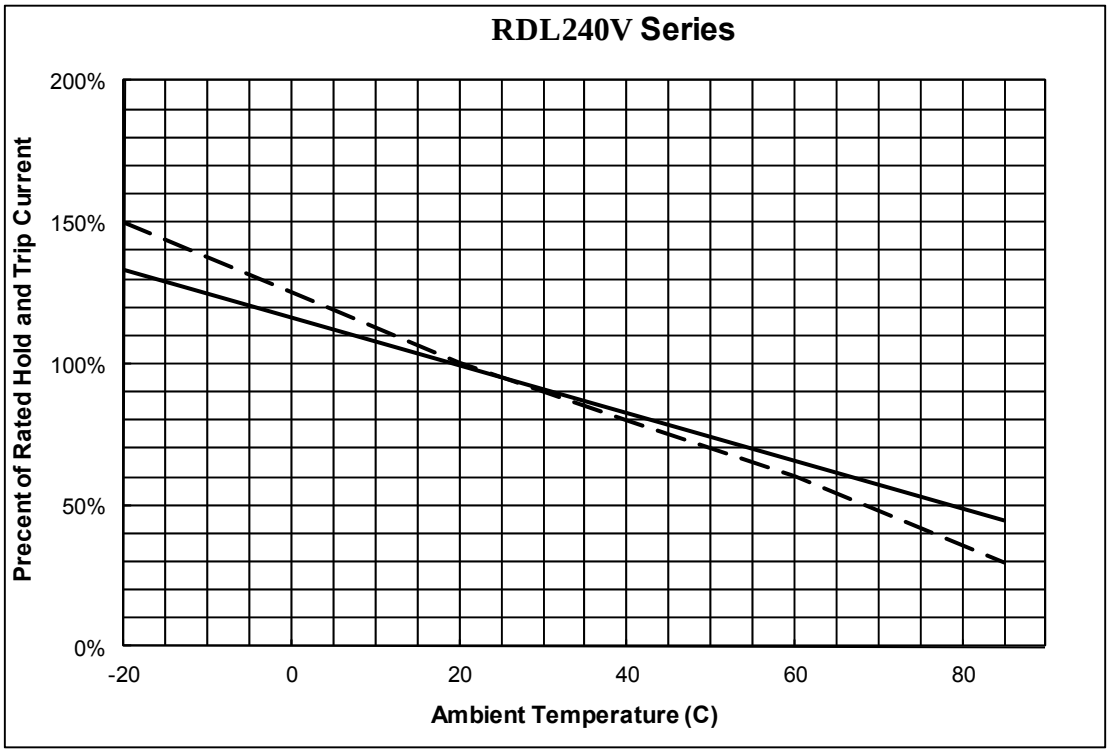


Figure 4
Lead Size: 20AWG
Φ 0.81 mm Diameter

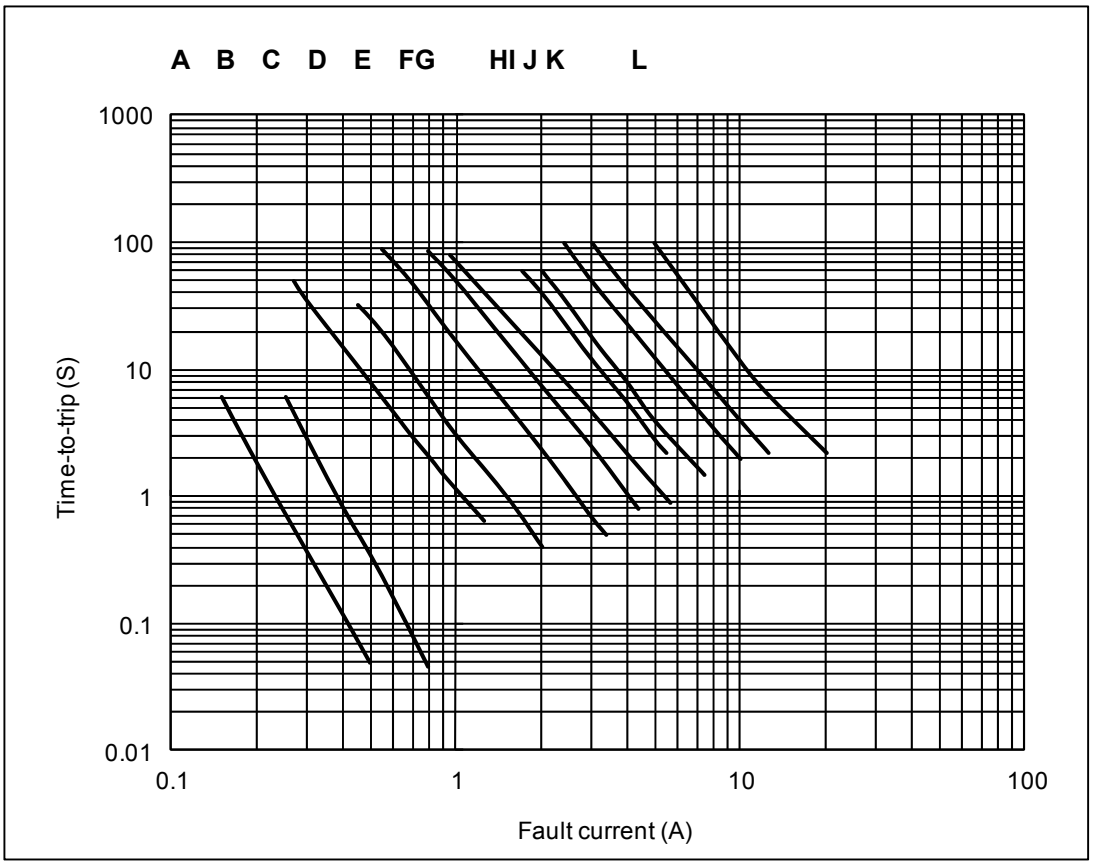
Part Number	Figure	A	B	C	D	E	F
		max	max	typ	min	max	typ
RDL240V005	1	8.3	10.7	5.1	7.6	3.8	1.6
RDL240V008	1	8.3	10.7	5.1	7.6	3.8	1.6
RDL240V012	1	8.3	10.7	5.1	7.6	3.8	1.6
RDL240V016	1	9.9	12.5	5.1	7.6	3.8	1.6
RDL240V025	2	9.6	17.4	5.1	7.6	3.8	1.8
RDL240V033	2	11.4	16.5	5.1	7.6	3.8	1.8
RDL240V040	2	11.5	19.5	5.1	7.6	3.8	1.8
RDL240V055	3	14.0	21.7	5.1	7.6	4.1	1.9
RDL240V075	3	11.5	23.4	5.1	7.6	4.8	1.9
RDL240V100	4	18.7	24.4	10.2	7.6	5.1	1.9
RDL240V125	4	21.2	27.4	10.2	7.6	5.3	1.9
RDL240V200	3	24.9	33.8	10.2	7.6	6.1	1.9

5. Thermal Derating Curve



6. Typical Time-To-Trip at 23℃

A= RDL240V005
B= RDL240V008
C= RDL240V012
D= RDL240V016
E= RDL240V025
F= RDL240V033
G= RDL240V040
H= RDL240V055
I= RDL240V075
J= RDL240V100
K= RDL240V125
L= RDL240V200

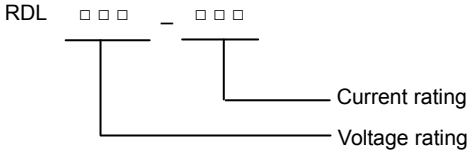


7. Material Specification

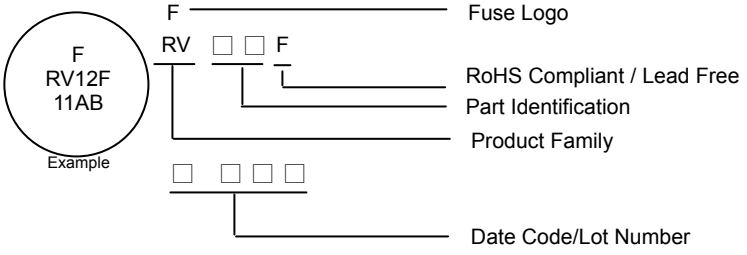
Lead material： RDL240V005~RDL240V016 Tin plated copper, 24AWG.
RDL240V025~RDL240V040 Tin plated copper, 22AWG.
RDL240V055~RDL240V200 Tin plated copper, 20AWG.
Soldering characteristics: MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

Part Numbering System



Part Marking System



Radial Leaded PTC Resettable Fuse : RDL-U Series

1.Summary

(ff) RoHS Compliant (Lead Free) Product
(gg) Applications : Wide variety of electronic equipment
(hh) Product Features : Low hold current Solid state, Radial leaded product ideal for up to 60V/250V/600V
(ii) Operation Current : 80mA~180mA
(jj) Maximum Operation Voltage : 60V
(kk) Maximum Interrupt Voltage : 250V/600V
(ll) Temperature Range : -40℃ to 85℃

2. Agency Recognition

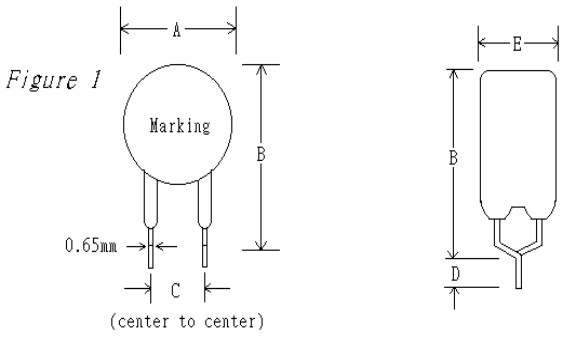
UL : File No. E211981
C-UL: File No. E211981
TÜV: File No. R 50021651

3. Electrical Characteristics (23℃)

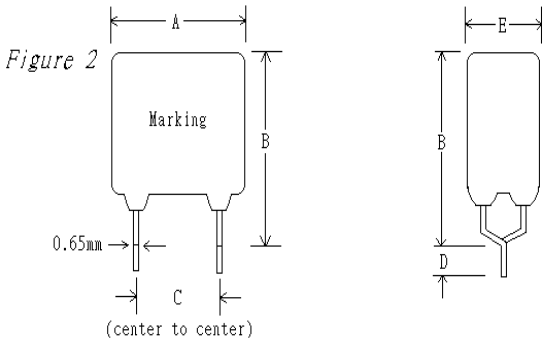
Part Number	Hold Current	Trip Current	Max. Time To Trip		Maximum Current	Max Oper. Voltage	Max Int. Voltage	Typical Power	Resistance Tolerance	
			Current	Time					R_{MIN}	R_{1MAX}
	I_H, A	I_T, A	A	Sec	I_{MAX}, A	V_{MAX}, Vdc	$V_{I\text{-}MAX}$,V	Pd, W	Ω	Ω
RDL250V080U	0.08	0.16	0.35	4.0	3.0	60	250	1.0	14.0	33.0
RDL250V080	0.08	0.16	0.35	4.0	3.0	60	250	1.0	14.0	33.0
RDL250V110U	0.11	0.22	1.00	2.0	3.0	60	250	1.0	5.0	16.0
RDL250V110	0.11	0.22	1.00	2.0	3.0	60	250	1.0	5.0	16.0
RDL250V120U	0.12	0.24	1.00	2.0	3.0	60	250	1.0	6.0	16.0
RDL250V120	0.12	0.24	1.00	2.0	3.0	60	250	1.0	4.0	16.0
RDL250V145U	0.15	0.29	1.00	2.5	3.0	60	250	1.0	3.5	12.0
RDL250V145	0.15	0.29	1.00	2.5	3.0	60	250	1.0	3.0	12.0
RDL250V180U	0.18	0.65	1.50	10.0	10.0	60	250	1.5	0.8	4.0
RDL250V180	0.18	0.65	1.50	11.0	10.0	60	250	1.5	0.8	4.0
RDL600V150	0.15	0.30	1.00	5.0	3.0	60	600	1.6	6.0	22.0
RDL600V160	0.16	0.32	1.00	7.0	3.0	60	600	1.6	4.0	18.0

I_H=Hold current-maximum current at which the device will not trip at 23℃ still air.
I_T=Trip current-maximum current at which the device will always trip at 23℃ still air.
V_{MAX}=Maximum operating voltage at which the device can withstand without damage at its rated current.
$V_{I\text{-}MAX}$ = Maximum interrupt voltage device can withstand for short period of time. (Not for long term.)
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
Pd=Typical power dissipated from device when in the tripped state in 23℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃ 1 hour after tripping .
Physical specifications:
Lead material: RDL250V080 ~ RDL250V180 Tin plated copper,22 AWG.
RDL600V150 ~ RDL600V160 Tin plated copper,22 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy ,meet UL-94V-0 requirement.

4. Production Dimensions (mm)



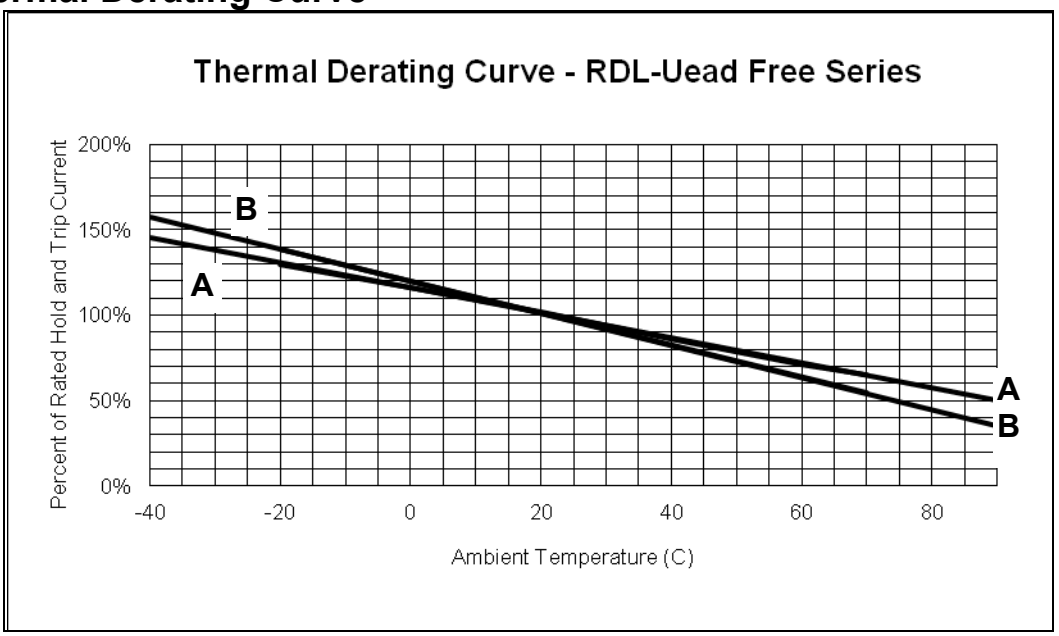
Lead Size :22AWG,
Φ 0.65 mm Diameter



Lead Size : 22AWG,
Φ 0.65 mm Diameter

Part Number	Fig	A	B	C	D	E
		max	max	typ	min	max
RDL250V080U	1	5.1	9.1	5.0	4.7	3.8
RDL250V080	1	5.8	9.6	5.0	4.7	4.6
RDL250V110U	1	5.9	9.4	5.0	4.7	3.8
RDL250V110	1	6.8	9.9	5.0	4.7	4.6
RDL250V120U	2	6.0	10.0	5.0	4.7	3.8
RDL250V120	2	6.5	11.0	5.0	4.7	4.6
RDL250V145U	2	6.0	10.0	5.0	4.7	3.8
RDL250V145	2	6.5	11.0	5.0	4.7	4.6
RDL250V180U	2	10.4	12.6	5.0	4.7	3.8
RDL250V180	2	10.9	12.6	5.0	4.7	4.6
RDL600V150	2	14.0	12.6	5.0	4.7	6.0
RDL600V160	2	16.0	12.6	5.0	4.7	6.0

5. Thermal Derating Curve

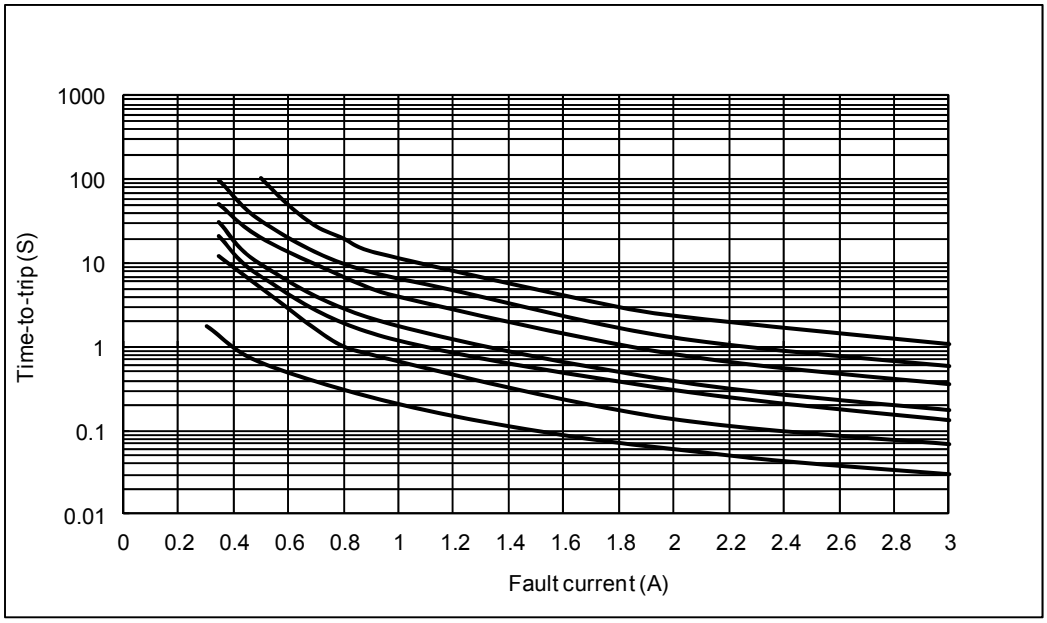


A= RDL250V180U
RDL250V180

B= All other devices

6. Typical Time-To-Trip at 23℃

A=RDL250V080U & RDL250V080
B=RDL250V110U & RDL250V110
C=RDL250V120U & RDL250V120
D=RDL250V145U & RDL250V145
E=RDL250V180U & RDL250V180
F=RDL600V150
G=RDL600V160



7. Material Specification

Lead material：Tin plated copper, 22 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement

8. Part Numbering and Marking System

Part Numbering System

RDL □□□— □□□ U

- Unencapsulated part
- Maximum interrupt Voltage rating
- Current rating

*

Part Marking System