

LY30 Series Data Sheet

Features

- RoHS Compliant & Halogen Free
- Faster Tripping
- Operating temperature: -40°C ~ +85°C
- Hold Current: 0.5A~9A
- Maximum Voltage: 30V

Applications

- Set-top-box and HDMI
- Computer peripherals
- USB peripherals
- Automotive applications

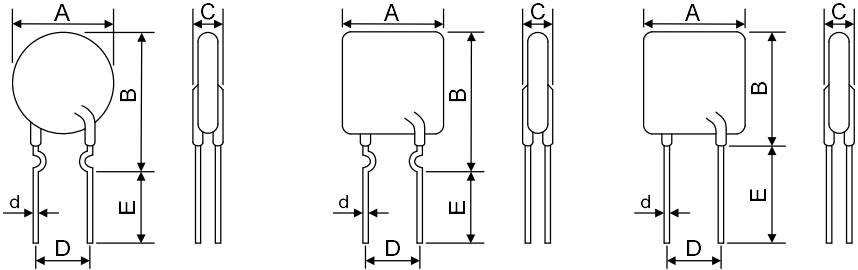
Part Number Code

LY30 - 050

LY30: Voltage Code, LY30 series, $V_{Max}=30V$

050: $I_{Hold}=0.5A$

Dimensions (Unit: mm)



Model	A(Max.)	B(Max.)	C(Max.)	D(± 0.75)	E(Min.)	d(Typ.)	Shape
LY30-050	7.4	12.7	3.0	5.1	4.6	0.5	Fig. 1
LY30-075	7.4	13.0	3.0	5.1	4.6	0.5	Fig. 1
LY30-090	7.4	18.5	3.0	5.1	4.6	0.5	Fig. 2
LY30-110	7.4	18.5	3.0	5.1	4.6	0.5	Fig. 2
LY30-120	7.4	18.5	3.0	5.1	4.6	0.5	Fig. 2
LY30-135	9.2	17.6	3.0	5.1	4.6	0.5	Fig. 2
LY30-160	9.2	20.2	3.0	5.1	4.6	0.5	Fig. 2
LY30-185	9.2	20.2	3.0	5.1	4.6	0.5	Fig. 2
LY30-200	15.2	20.2	3.0	5.1	4.6	0.5	Fig. 2

Model	A(Max.)	B(Max.)	C(Max.)	D(± 0.75)	E(Min.)	d(Typ.)	Shape
LY30-250	13.2	22.4	3.0	5.1	4.6	0.5	Fig. 2
LY30-300	13.2	20.4	3.0	5.1	7.6	0.8	Fig. 3
LY30-400	14.0	23.7	3.0	5.1	7.6	0.8	Fig. 3
LY30-500	14.0	23.7	3.0	10.2	7.6	0.8	Fig. 3
LY30-600	17.2	27.0	3.0	10.2	7.6	0.8	Fig. 3
LY30-700	17.2	27.0	3.0	10.2	7.6	0.8	Fig. 3
LY30-800	23.5	29.2	3.0	10.2	7.6	0.8	Fig. 3
LY30-900	23.5	29.2	3.0	10.2	7.6	0.8	Fig. 3

Electrical Characteristics

Model	I_{Hold}	I_{Trip}	V_{Max}	I_{Max}	$P_{d Typ.}$	Maximum time to trip		Resistenct	
	(A)	(A)	(V _{DC})	(A)	(W)	Current(A)	Time(Sec)	$R_{Min}(\Omega)$	$R_{Max}(\Omega)$
LY30-050	0.50	1.0	30	40	0.5	2.50	5.0	0.25	0.60
LY30-075	0.75	1.5	30	40	0.6	3.75	5.0	0.20	0.37
LY30-090	0.90	1.8	30	40	0.7	4.50	8.0	0.10	0.22
LY30-110	1.10	2.2	30	40	0.7	5.50	8.0	0.07	0.20
LY30-120	1.20	2.4	30	40	0.8	6.00	8.0	0.08	0.18
LY30-135	1.35	2.7	30	40	0.8	6.75	8.0	0.07	0.16
LY30-160	1.60	3.2	30	40	0.9	8.00	8.0	0.06	0.14
LY30-185	1.85	3.7	30	40	1.0	9.25	8.0	0.05	0.12
LY30-200	2.00	4.0	30	40	1.2	10.00	11.0	0.04	0.10
LY30-250	2.50	5.0	30	40	1.2	12.50	11.0	0.03	0.08
LY30-300	3.00	6.0	30	40	2.0	15.00	11.0	0.03	0.07
LY30-400	4.00	8.0	30	40	2.5	20.00	12.7	0.01	0.06
LY30-500	5.00	10.0	30	40	3.0	25.00	14.5	0.01	0.05
LY30-600	6.00	12.0	30	40	3.5	30.00	16.0	0.005	0.04
LY30-700	7.00	14.0	30	40	3.8	35.00	17.5	0.005	0.03
LY30-800	8.00	16.0	30	40	4.0	40.00	18.8	0.005	0.025
LY30-900	9.00	18.0	30	40	4.2	40.00	20.0	0.005	0.02

- ◆ I_{Hold} =Hold Current. Maximum current device will not trip in 25°C still air.
- ◆ I_{Trip} =Trip Current. Minimum current at which the device will always trip in 25°C still air.
- ◆ V_{Max} =Maximum operating voltage device can withstand without damage at rated current (I_{Max}).
- ◆ I_{Max} =Maximum fault current device can withstand without damage at rated voltage (V_{Max}).
- ◆ $P_{d Typ.}$ =Typical power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
- ◆ R_{Min} =Minimum resistance of device in initial (un-soldered) state at 25°C.
- ◆ R_{Max} =Maximum resistance of device in initial (un-soldered) state at 25°C.

Thermal Derating Chart-I_H (A)

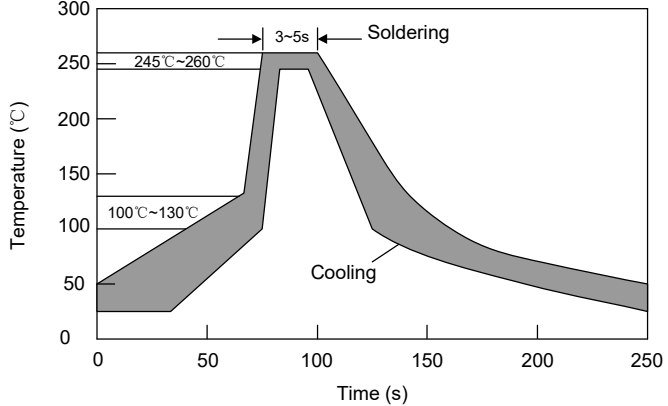
Model	Maximum ambient operating temperature									
	-40℃	-20℃	0℃	25℃	30℃	40℃	50℃	60℃	70℃	85℃
LY30-050	0.69	0.65	0.58	0.50	0.46	0.42	0.39	0.34	0.31	0.26
LY30-075	1.03	0.98	0.86	0.75	0.68	0.62	0.58	0.51	0.46	0.39
LY30-090	1.23	1.17	1.04	0.90	0.82	0.75	0.69	0.61	0.55	0.47
LY30-110	1.51	1.43	1.27	1.10	1.00	0.91	0.85	0.75	0.67	0.57
LY30-120	1.64	1.56	1.38	1.20	1.09	1.00	0.92	0.82	0.73	0.62
LY30-135	1.85	1.76	1.55	1.35	1.23	1.12	1.04	0.92	0.82	0.70
LY30-160	2.19	2.08	1.84	1.60	1.46	1.33	1.23	1.09	0.98	0.83
LY30-185	2.53	2.41	2.13	1.85	1.68	1.54	1.42	1.26	1.13	0.96
LY30-200	2.74	2.60	2.30	2.00	1.82	1.66	1.54	1.36	1.22	1.04
LY30-250	3.43	3.25	2.88	2.50	2.28	2.08	1.93	1.70	1.53	1.30
LY30-300	4.11	3.90	3.45	3.00	2.73	2.49	2.31	2.04	1.83	1.56
LY30-400	5.48	5.20	4.60	4.00	3.64	3.32	3.08	2.72	2.44	2.08
LY30-500	6.85	6.50	5.75	5.00	4.55	4.15	3.85	3.40	3.05	2.60
LY30-600	8.22	7.80	6.90	6.00	5.46	4.98	4.62	4.08	3.66	3.12
LY30-700	9.59	9.10	8.05	7.00	6.37	5.81	5.39	4.76	4.27	3.64
LY30-800	10.96	10.40	9.20	8.00	7.28	6.64	6.16	5.44	4.88	4.16
LY30-900	12.33	11.70	10.35	9.00	8.19	7.47	6.93	6.12	5.49	4.68

Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	+85℃, 1000 hours	≤R _{Max}
Humidity aging	+85℃/85%R.H., 1000 hours	≤R _{Max}
Thermal shock	-55℃ to +125℃, 10 times	≥R _{Min}
Solvent Resistance	MIL-STD-202, Method 215F	No change
Vibration	MIL-STD-202, Method 201	No change

Soldering

Wave Soldering	
Soldering Temperature	245°C~260°C
Soldering Time	≤5 seconds
Soldering Position	PPTC lead and the distance from the bottom ≥ 6mm
Manual Soldering	
Soldering Temperature	250°C~280°C
Soldering Time	≤3 seconds
Soldering Position	PPTC lead and the distance from the bottom ≥ 6mm



The graph illustrates the temperature profile for soldering. The y-axis represents Temperature in degrees Celsius (0 to 300), and the x-axis represents Time in seconds (0 to 250). The process starts at 100°C, heats up to a soldering temperature of 245°C~260°C, maintains this temperature for 3~5 seconds, and then cools back down to 100°C~130°C.

Packaging Quantity

Model	Quantity
LY30-050~LY30-250	1000pcs/bag
LY30-300~LY30-500	500pcs/bag
LY30-600~LY30-900	200pcs/bag

Storage

The maximum ambient temperature shall not exceed 40°C. Storage temperatures higher than 40°C could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 70%. High humidity with high temperature can accelerate the oxidation of the solder plating on the leads and reduce the solderability of the components. Sealed plastic bags with desiccant shall be used to reduce the oxidation of the leads and shall only be opened prior to use. The products shall not be stored in areas where harmful gases containing acid or alkali or other harmful substances are present.

Warning

- ✦ Use PPTC beyond the maximum ratings or improper use may result in device damage, electrical arcing and flame.
- ✦ PPTC are intended for protection against occasional over current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- ✦ Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- ✦ Use PPTC with a large inductance in circuit will generate a circuit voltage above the rated voltage of the PPTC.
- ✦ Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
- ✦ Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices. PPTC can be cleaned by standard methods.