

## LY250 Series Data Sheet

### Features

- RoHS Compliant & Halogen Free
- Faster Tripping
- Operating temperature: -40°C ~ +85°C
- Hold Current: 0.02A~2A
- Maximum Voltage: 250V

### Applications

- Phone set and fax machine
- LAN/WAN and VOIP cards
- Central office equipment
- IT equipment

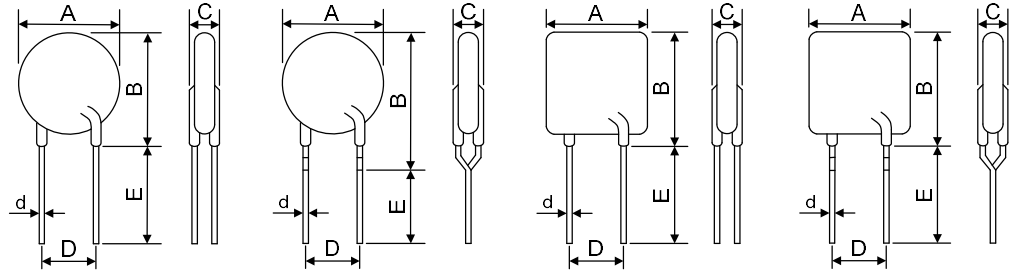
### Part Number Code

#### LY250 - 020

LY250: Voltage Code, LY250 series,  $V_{Max}=250V$

020:  $I_{Hold}=0.02A$

### Dimensions (Unit: mm)



Model	A(Max.)	B(Max.)	C(Max.)	D( $\pm 0.75$ )	E(Min.)	d(Typ.)	Shape
LY250-020	7.4	12.7	4.5	5.1	7.6	0.6	Fig. 1
LY250-030	7.4	12.7	4.5	5.1	7.6	0.6	Fig. 1
LY250-040	7.4	12.7	4.5	5.1	7.6/4.6	0.6	Fig. 1/Fig. 2
LY250-050	7.4	12.7	4.5	5.1	7.6/4.6	0.6	Fig. 1/Fig. 2
LY250-060	7.4	12.7	4.5	5.1	7.6/4.6	0.6	Fig. 1/Fig. 2
LY250-080	7.4	12.7	4.5	5.1	4.6	0.6	Fig. 2
LY250-090	7.4	12.7	4.5	5.1	4.6	0.6	Fig. 2
LY250-100	7.8	12.6	4.5	5.1	7.6	0.6	Fig. 1
LY250-110	7.0	12.6	4.5	5.1	4.6	0.6	Fig. 4
LY250-120	7.0	12.6	4.5	5.1	4.6	0.6	Fig. 4

Model	A(Max.)	B(Max.)	C(Max.)	D(±0.75)	E(Min.)	d(Typ.)	Shape
LY250-145	7.0	12.6	4.5	5.1	4.6	0.6	Fig. 4
LY250-180	9.0	11.0	4.5	5.1	4.6	0.6	Fig. 4
LY250-200	12.0	17.0	4.5	5.1	7.6	0.6	Fig. 3
LY250-400	12.0	17.0	4.5	5.1	7.6	0.6	Fig. 3
LY250-600	16.0	18.0	4.5	5.1	7.6	0.6	Fig. 3
LY250-800	20.0	22.5	4.5	5.1	7.6	0.8	Fig. 3
LY250-1000	20.0	22.5	4.5	5.1	7.6	0.8	Fig. 3
LY250-1200	22.0	28.0	4.5	5.1	7.6	0.8	Fig. 3
LY250-1500	25.0	30.0	4.5	5.1	7.6	0.8	Fig. 3
LY250-2000	26.0	32.0	4.5	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		Resistent	
	(A)	(A)	(V <sub>AC</sub> )	(A)	(W)	Current(A)	Time(Sec)	$R_{Min}(\Omega)$	$R_{Max}(\Omega)$
LY250-020	0.02	0.045	250	3	1.0	0.5	0.5	50.0	160.0
LY250-030	0.03	0.065	250	3	1.0	0.5	0.5	40.0	120.0
LY250-040	0.04	0.08	250	3	1.0	0.5	1.5	30.0	60.0
LY250-050	0.05	0.10	250	3	1.0	0.5	2.0	25.0	50.0
LY250-060	0.06	0.12	250	3	1.0	0.5	2.0	20.0	60.0
LY250-080	0.08	0.16	250	3	1.0	1.0	0.5	12.0	22.0
LY250-090	0.09	0.18	250	3	1.0	1.0	0.8	10.0	20.0
LY250-100	0.10	0.20	250	3	1.0	1.0	1.0	10.0	20.0
LY250-110	0.11	0.22	250	3	1.0	1.0	2.0	6.0	12.0
LY250-120	0.12	0.24	250	3	1.0	1.0	2.0	6.0	11.0
LY250-145	0.145	0.29	250	3	1.0	1.0	5.0	3.5	6.5
LY250-180	0.18	0.65	250	3	1.8	3.0	1.5	2.0	4.0
LY250-200	0.20	0.40	250	5	2.4	3.0	5.0	3.0	6.0
LY250-400	0.40	0.80	250	5	2.8	3.0	8.0	1.0	3.0
LY250-600	0.60	1.20	250	5	3.2	3.0	12.0	0.6	2.0
LY250-800	0.80	1.60	250	5	3.6	4.0	18.0	0.4	1.0
LY250-1000	1.00	2.00	250	7	3.6	5.0	20.0	0.3	0.8
LY250-1200	1.20	2.40	250	7	3.6	6.0	20.0	0.2	0.8
LY250-1500	1.50	3.00	250	7	4.8	7.5	20.0	0.2	0.6
LY250-2000	2.00	4.00	250	10	4.8	10.0	20.0	0.2	0.4

- ✦  $I_{Hold}$ =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<sub>H</sub> (A)

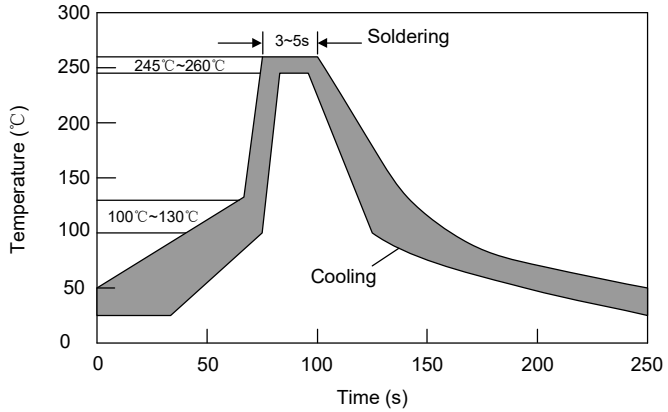
Model	Maximum ambient operating temperature									
	-40°C	-20°C	0°C	25°C	30°C	40°C	50°C	60°C	70°C	85°C
LY250-020	0.030	0.026	0.023	0.020	0.018	0.017	0.015	0.014	0.012	0.009
LY250-030	0.044	0.040	0.035	0.030	0.027	0.026	0.023	0.020	0.018	0.014
LY250-040	0.059	0.053	0.047	0.040	0.036	0.034	0.031	0.027	0.024	0.018
LY250-050	0.074	0.066	0.059	0.050	0.046	0.043	0.039	0.034	0.031	0.023
LY250-060	0.089	0.079	0.070	0.060	0.055	0.051	0.046	0.041	0.037	0.027
LY250-080	0.118	0.106	0.094	0.080	0.073	0.068	0.062	0.054	0.049	0.036
LY250-090	0.133	0.119	0.105	0.090	0.082	0.077	0.069	0.061	0.055	0.041
LY250-100	0.148	0.132	0.117	0.100	0.091	0.085	0.077	0.068	0.061	0.045
LY250-110	0.163	0.145	0.129	0.110	0.100	0.094	0.085	0.075	0.067	0.050
LY250-120	0.178	0.158	0.140	0.120	0.109	0.102	0.092	0.082	0.073	0.054
LY250-145	0.215	0.191	0.170	0.145	0.132	0.123	0.112	0.099	0.088	0.065
LY250-180	0.266	0.238	0.211	0.180	0.164	0.153	0.139	0.122	0.110	0.081
LY250-200	0.296	0.264	0.234	0.200	0.182	0.170	0.154	0.136	0.122	0.090
LY250-400	0.592	0.528	0.468	0.400	0.364	0.340	0.308	0.272	0.244	0.180
LY250-600	0.888	0.792	0.702	0.600	0.546	0.510	0.462	0.408	0.366	0.270
LY250-800	1.184	1.056	0.936	0.800	0.728	0.680	0.616	0.544	0.488	0.360
LY250-1000	1.480	1.320	1.170	1.000	0.910	0.850	0.770	0.680	0.610	0.450
LY250-1200	1.776	1.584	1.404	1.200	1.092	1.020	0.924	0.816	0.732	0.540
LY250-1500	2.220	1.980	1.755	1.500	1.365	1.275	1.155	1.020	0.915	0.675
LY250-2000	2.960	2.640	2.340	2.000	1.820	1.700	1.540	1.360	1.220	0.900

### Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	+85°C, 1000 hours	≤R <sub>Max</sub>
Humidity aging	+85°C/85%R.H., 1000 hours	≤R <sub>Max</sub>
Thermal shock	-55°C to +125°C, 10 times	≥R <sub>Min</sub>
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



## Packaging Quantity

Model	Quantity
LY250-020~LY250-180	1000pcs/bag
LY250-200~LY250-600	500pcs/bag
LY250-800~LY250-2000	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.