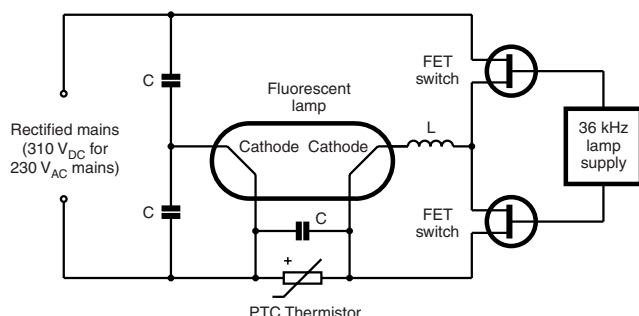


## PTC Thermistors, Radial Leaded For Lighting Ballasts



Typical electronic ballast circuit.

### FEATURES

- Reliable lamp starting, due to well defined inrush-current generated time delay
- Accurate resistance for ease of circuit design
- Small size and durable
- Available bulk-packed or taped-on-reel
- Long life: More than 20 000 starts for a 20 W CFL lamp
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### DESCRIPTION

Positive Temperature Coefficient (PTC) thermistors for overload protection have proved to be the ideal electronic ballast component for increased lamp life-time.

When the rectified mains is first applied, the PTC thermistor is cold, so its resistance is low. The lamp voltage will be below the necessary ignition value, so the current will flow through the cathodes, heating them to their emission temperature. At the same time, the PTC thermistor will heat up to its switch temperature, whereupon its resistance will rise rapidly, allowing the lamp voltage to reach its ignition value and light the lamp.

Once the lamp is lit, the cathodes are fed by a high-frequency (36 kHz) lamp supply, to avoid flicker, via two power FET switches. The PTC thermistor plays no further part until the lamp is switched off, whereupon it is ready to resume its smooth-starting function.

We supply a range of lighting PTC thermistors for this application offering a wide choice of voltage and switch times.

### APPLICATIONS

Fluorescent lighting and lighting ballasts for:

- CFL 5 to 25 W range
- TL HF-ballasts

### MOUNTING

The leads are suitable for soldering in any position. The lacquer may cover the leads up to 1.0 mm from the seating plane.

### PACKAGING

All tape and reel specifications are in accordance with "IEC 60286-3".

### ELECTRICAL DATA AND ORDERING INFORMATION

$R_{25}$ ( $\Omega$ )		SWITCH TEMPERATURE (°C)	MAXIMUM VOLTAGE (PEAK VALUE) (V)	TYPICAL <sup>(1)</sup> TRIP TIME at 25 °C		CATALOG NUMBER	
MIN.	MAX.			$t_{trip}$ (s)	at $I_t$ (mA)	12NC	SAP CODING
500	750	≈ 110	700	0.4	200	2381 660 93049 <sup>(2)</sup>	PTCLL05P131TBE <sup>(2)</sup>
185	300	≈ 120	700	0.5	300	2381 660 93055 <sup>(2)</sup>	PTCLL05P211TTE <sup>(2)</sup>
75	125	≈ 80	700	0.7	300	2381 660 93066 <sup>(2)</sup>	PTCLL05P251TTE <sup>(2)</sup>
225	375	≈ 105	900	0.75	300	2381 661 93102 <sup>(3)</sup>	PTCLL07P261VTE <sup>(3)</sup>
75	125	≈ 105	1000	0.85	500	2381 661 93114 <sup>(3)</sup>	PTCLL07P421WTE <sup>(3)</sup>

#### Notes

<sup>(1)</sup> Ignition time of the lamp approximately equals the tripping time

<sup>(2)</sup> Specific for CFL lamp electronic starter

<sup>(3)</sup> Specific for HF-TL ballast

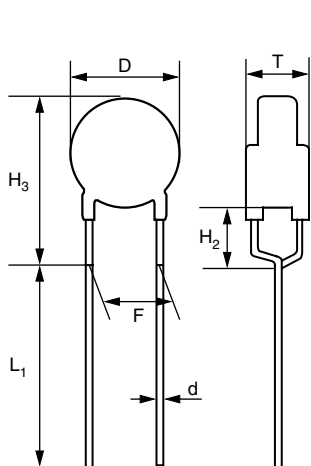
**DIMENSIONS** in millimeters


Fig. 1a

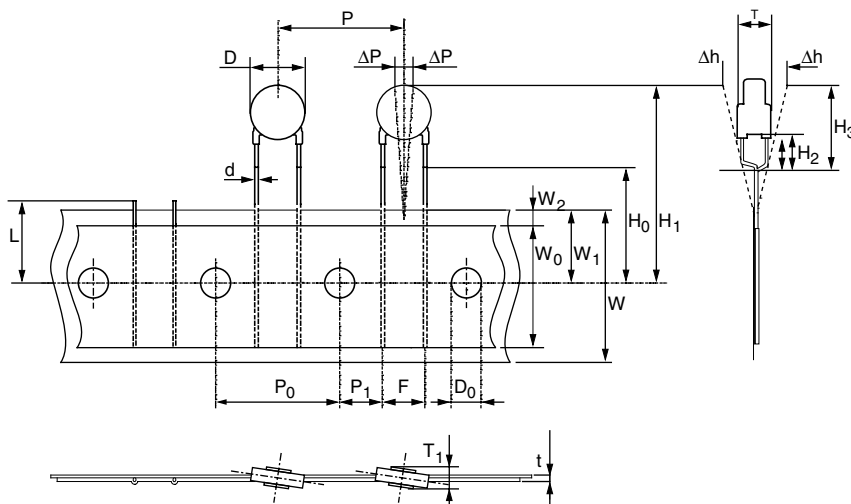


Fig. 1b

**COMPONENT DIMENSIONS**

D <sub>MAX.</sub> (mm)	T <sub>MAX.</sub> (mm)	H <sub>3</sub> (mm)	WEIGHT (g)	FIGURES	PACKAGING	SPQ	CATALOG NUMBER	
							12NC	SAP CODING
5.4	4.5	10	≈ 0.33	Fig. 1a	Bulk	500	2381 660 93049	PTCLL05P131TBE
5.4	4.5	9	≈ 0.45	Fig. 1b	On tape	1500	2381 660 93055	PTCLL05P211TTE
5.4	4.5	10	≈ 0.45	Fig. 1b	On tape	1500	2381 660 93066	PTCLL05P251TTE
7.0	5.0	12	≈ 0.66	Fig. 1b	On tape	1500	2381 661 93102	PTCLL07P261VTE
7.0	5.0	12	≈ 0.66	Fig. 1b	On tape	1500	2381 661 93114	PTCLL07P421WTE

**TAPE AND OTHER DEVICE DIMENSIONS** in millimeters

SYMBOL	PARAMETER	DIMENSIONS	TOLERANCE	REMARKS
d	Lead diameter	0.6	± 10 %	
P	Pitch between thermistors	12.7	± 1	
F	Lead to lead distance	5	+ 0.6/- 0.1	Guaranteed between component and tape
H <sub>2</sub>	Component body to seating plane	4	± 1	
H <sub>0</sub>	Lead-wire clinch height	16	± 0.5	



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**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

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