PTC thermistors

Motorstart applications

Series/Type:	**A0590-A0100-A020**
Ordering code:	**B59590A0100A020**
Date:	2022-10-04
Version:	1

Applications

- Starting of single-phase compressor motors

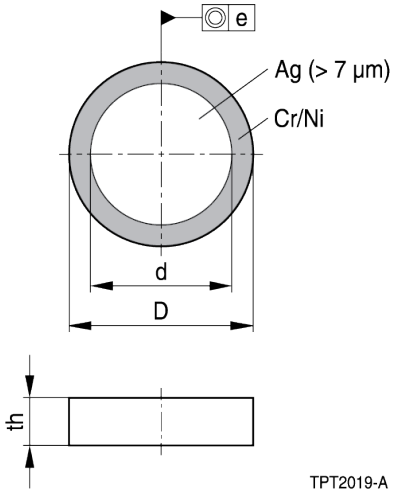
Features

- Non leaded thermistor disk
- Migration-free silver metallization
- For clamp contacting, not suitable for soldering
- High thermal stability
- RoHS-compatible

Delivery mode

- Trays

Dimensional drawing



D	16.0+/-0.2	mm
d	14.4+/-0.3	mm
th	3.2+/-0.2	mm
e	< 0.4	mm

Metallization according to drawing

Ordering code

B59590A0100A020

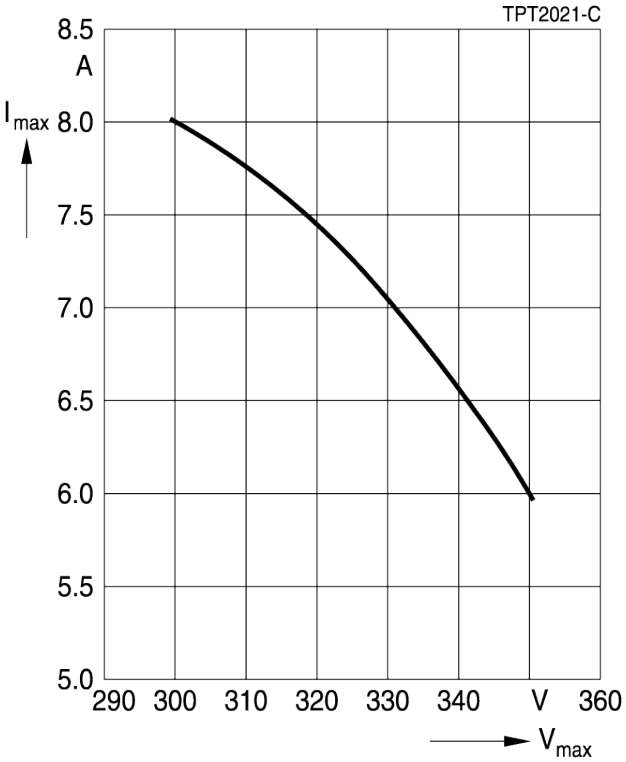
General technical data

Max. operating voltage	V_{max}	350	V_{RMS}
Rated voltage	V_R	230	V_{RMS}
Breakdown voltage @ T_{amb}=80 °C 1)	V_{BD}	> 560	V_{RMS}
Max. current at V_{max} 2)	I_{max}	6.0	A_{RMS}
Max. current at V = 300 V_{RMS} 2)	I_{max}	8.0	A_{RMS}
Residual current, V = 230 V_{RMS}, soak time 10 min 1)	I_R	< 7.0	mA_{RMS}
Rated resistance (measured current <1 mA; 25+/-0.1 °C)	R(25 °C)	24.0+/-20%	Ω
Rated resistance (measured with sine voltage V_p)	R(25 °C,141 V_p)	21.0+/-25%	Ω
Operating time, R_L = 30 Ω, V = 230 V_{RMS} 1)	t_s	0.30 – 0.60	s
Recovery time V = 230 V_{RMS}; soak time 10 min 1)	t_r	< 130	s
Reference temperature	T_{ref}	94 - 106	°C
Operating temperature range	T_{op}	-10 – 100	°C

1) Measurement conditions according to Product Specification RD.PL.006.01 (January 2002)

2) As per diagram on page 2

Allowed current as a function of voltage



Reliability

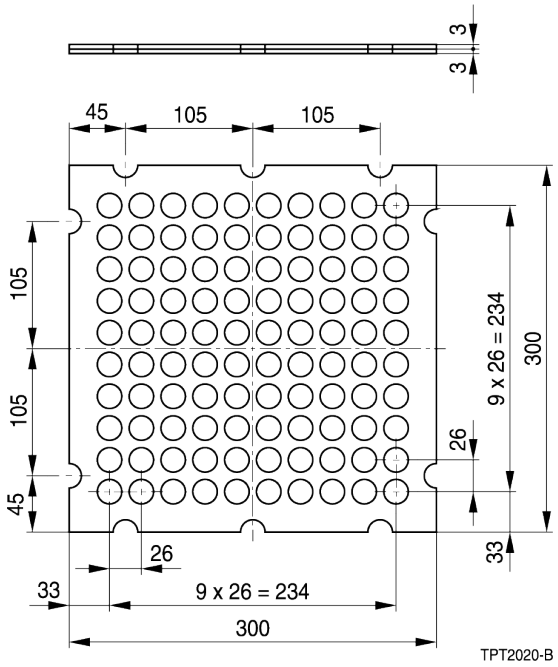
- Component must withstand reliability tests according to CECC 60738-1-3-003 (tests performed in ACC motor start housing)
- Component must withstand reliability tests according to Product Specification RD.PL.006.01 (January 2002), item 6.

Handling and Mounting Instructions

According to “Cautions and Warnings”

Packaging

PTCs are on carton trays (100 pieces each tray) as per following draft:



10 trays are stapled and put into outer carton which is sealed with a plastic foil.

Cautions and warnings

General

- EPCOS thermistors are designed for specific applications and should not be used purposes not identified in our specifications, application notes and data sheets unless otherwise agreed with us during the design-in-phase.
- Ensure suitability of thermistor through reliability testing during the design-in phase. The thermistors should be evaluated taking into consideration worst-case conditions.

Storage

- Store thermistors only in original packaging. Do not open the package before storage.
- Storage conditions in original packaging: storage temperature -25 °C to +45 °C, relative humidity ≤75% annual mean, maximum 95%, dew precipitation is inadmissible.
- Avoid contamination of thermistors surface during storage, handling and processing.
- Avoid storage of thermistor in harmful environment with effect on function on long-term operation (examples given under operation precautions).
- Use thermistor within 6 months after delivery.

Handling

- PTCs must not be dropped. Chip-offs must not be caused during handling of PTCs.
- Components must not be touched with bare hands. Gloves are recommended.
- Avoid contamination of thermistor surface during handling.

Soldering

- Use rosin-type flux or non-activated flux.
- Insufficient preheating may cause ceramic cracks.
- Rapid cooling by dipping in solvent is not recommended.
- Compete removal of flux is recommended.

Mounting

- Electrode must not be scratched before/during/after in the mounting process.
- Contacts and housing used for assembly with thermistor have to be clean before mounting. Especially grease or oil must be removed.
- When PTC thermistors are encapsulated with sealing material, the precautions given in chapter “Mounting instructions”, “Sealing and potting” must be observed.
- When the thermistor is mounted, there must not be any foreign body between the electrode of the thermistor and the clamping contact.
- The minimum force of the clamping contacts pressing against the PTC must be 10 N.
- During operation, the thermistor’s surface temperature can be very high. Ensure that adjacent components are placed at a sufficient distance from the thermistor to allow for proper cooling at the thermistors.

- Ensure that adjacent materials are designed for operation at temperature comparable to the surface temperature of thermistor. Be sure that surrounding parts and materials can withstand this temperature.
- Avoid contamination of thermistor surface during processing.

Operation

- Use thermistors only within the specified temperature operating range.
- Use thermistors only within the specified voltage and current ranges.
- Environmental conditions must not harm the thermistors. Use thermistors only in normal atmospheric conditions. Avoid use in deoxidizing gases (chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas etc), corrosive agents, humid or salty conditions. Contact with any liquids and solvents should be prevented.
- Be sure to provide and appropriate fail-safe function to prevent secondary product damage caused by abnormal function (e.g. use VDR for limitation of overvoltage condition).

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