



PTC THERMISTORS: YC, YD, YF, YG, YA

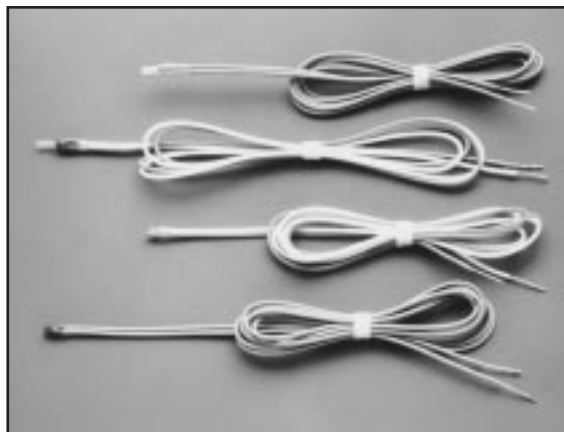
OVER-TEMPERATURE PROTECTION

DESCRIPTION:

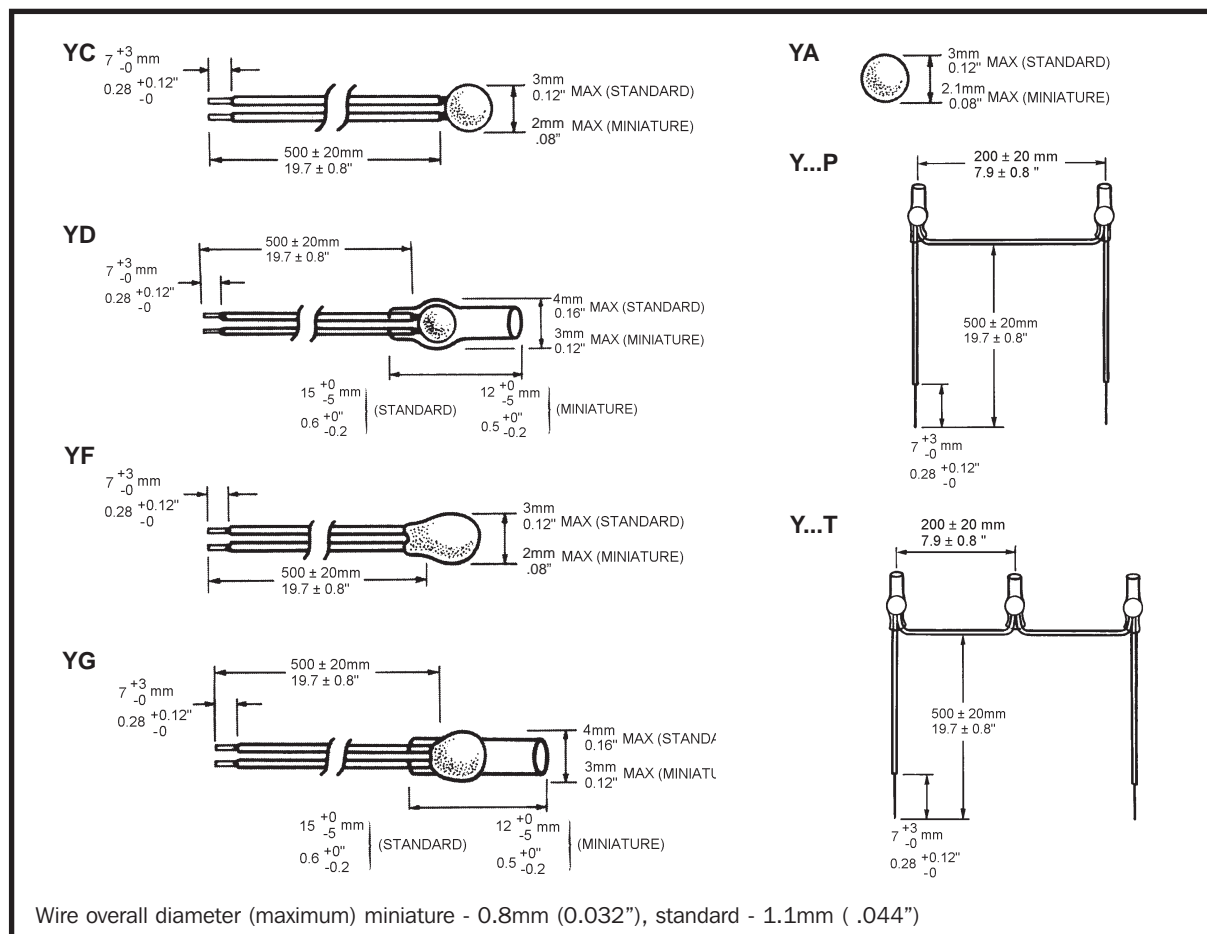
A range of PTC disc thermistors with insulated flexible wires and a choice of head insulation. Unwired discs (type YA) are also available.

FEATURES:

- Suitable for embedding in wound components (motors, transformers etc.) for over-temperature protection
- Small size, fast response
- Standard and miniature head sizes
- Range of switch temperatures T_{NF} 60 to 180°C
- Insulation up to 2.5kV a.c.
- Single, pair and triplet versions for single, 2- and 3-phase applications
- Compliance with DIN 44 081 & DIN 44 082 (switch temperatures T_{NF} 90 to 160°C)



DIMENSIONS:



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OVER-TEMPERATURE PROTECTION

DATA:

RESISTANCE - TEMPERATURE SPECIFICATION LIMITS:

Devices with $T_{NF} = 60$ to 80°C									
-20 to $T_{NF}-20^{\circ}\text{C}$		25°C		$T_{NF}-5^{\circ}\text{C}$		$T_{NF}+5^{\circ}\text{C}$		$T_{NF}+23^{\circ}\text{C}$	
Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.
≤ 250	2.5	≤ 100	0.2	≤ 570	2.5	≥ 570	2.5	≥ 10000	2.5

Devices with $T_{NF} = 90$ to 160°C									
-20 to $T_{NF}-20^{\circ}\text{C}$		25°C		$T_{NF}-5^{\circ}\text{C}$		$T_{NF}+5^{\circ}\text{C}$		$T_{NF}+15^{\circ}\text{C}$	
Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.
≤ 250	2.5	≤ 100	0.2	≤ 550	2.5	≥ 1330	2.5	≥ 4000	7.5

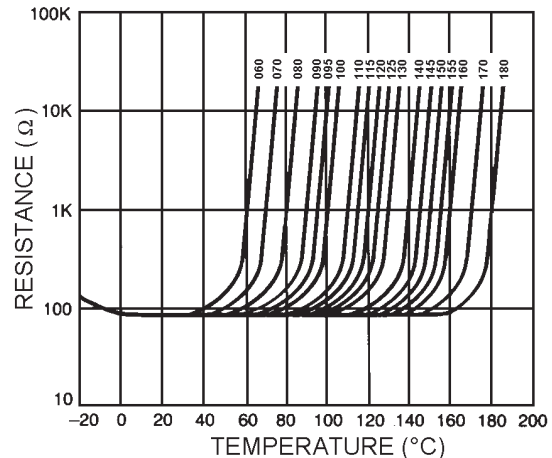
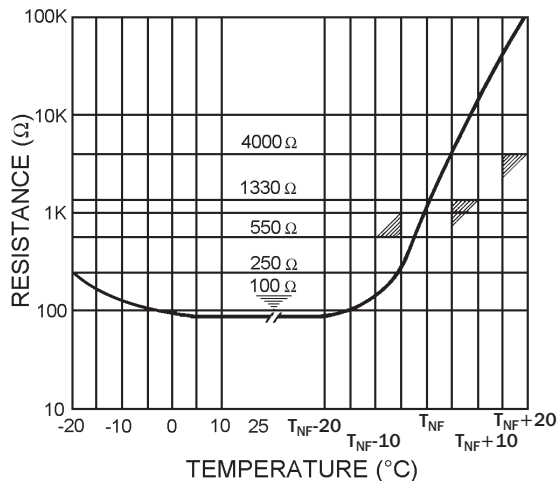
Devices with $T_{NF} = 170$ to 180°C									
-20 to $T_{NF}-20^{\circ}\text{C}$		25°C		$T_{NF}-6^{\circ}\text{C}$		$T_{NF}+6^{\circ}\text{C}$		$T_{NF}+15^{\circ}\text{C}$	
Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.
≤ 250	2.5	≤ 100	0.2	≤ 570	2.5	≥ 1330	2.5	≥ 4000	7.5

At temperatures lower than -20°C the resistance can be greater than 250Ω .

TYPICAL RESISTANCE - TEMPERATURE CHARACTERISTICS

With specification limits ($T_{NF}90$ to 160°C)

For each switch temperature



Resistances shown are for a single sensor element. For pairs and triplets, the resistance of the combination is the sum of the individual sensor resistances at the relevant temperatures.

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OVER-TEMPERATURE PROTECTION

DATA:

OPERATING TEMPERATURE:

(zero power).....-25 to + 180 or $T_{NF}+15^{\circ}C$
(whichever is greater)

(30V d.c.).....-25 to +40°C

(storage).....-25 to +65°C

*Thermal resistance (embedded)....0.05K/mW

*Dissipation factor (embedded)..... 20mW/K

*Dissipation factor (free air 25°C)... 5.5mW/K

¥ Maximum power (free air 25°C)..... 690mW

¥ Maximum applied voltage:

(fault condition)..... 40V d.c.

(for temperature sensing)..... 7.5V d.c.

Insulation resistance (except YA & YC types)

..... >100MΩ at 100V d.c.

Wire conductors..... Silver-plated copper

..... 7x0.1mm (miniature), 7x0.2mm (standard)

Wire insulation..... PTFE

Packing/MOQ..... 500/box (singles)

..... 100/box (pairs & triplets)

Ratings as recommended in DIN 44 081 & 44

082 for built-in thermal protection of electric

motors.

*These ratings are dependent on the method of insulation and mounting.

¥ Figures apply specifically to 120 and 130°C switch temperatures.

All values, except operating and storage temperatures, refer specifically to types YC...TB.

WIRE COLORS

$T_{NF}^{\circ}C$	Terminal wire colors
60	White - Grey
70	White - Brown
80	White - White
90	Green - Green
95	Black - Red
100	Red - Red
110	Brown - Brown
115	Brown - Red
120	Grey - Grey
125	Grey - Red
130	Blue - Blue
140	Blue - White
145	Black - White
150	Black - Black
155	Black - Blue
160	Blue - Red
170	Green - White
180	Red - White

Pairs and triplets have terminal wires color coded as above. Interconnecting wires are coded dependent on head size: miniature-yellow, standard-black.

CODING:

Head insulation, head size, switch temperature and configuration are specified by the product code:

e.g. YGBM080TB

Example	Description	Standard values (see diagrams)	
Y	Sensor material	Y	PTC
G	Head insulation	A	None (disc only)
		C	None
		D	sleeve (2.5kV)
		F	Epoxy resin (1.25kV)
		G	Epoxy resin & sleeve (2.5kV)
B	R ₂₅	B	<100Ω
M	Head size	M	Miniature
		(Blank)	Standard
080	Switch temperature $T_{NF}^{\circ}C$		060
			070
			080
			090
			095
			100
			110
			115
			120
			125
			130
			140
			145
			150
			155
	160		
	170		
	180		
T	Function	T	Temperature sensor
B	Configuration	B	Single
		P	Pair
		T	Triplet

OPTIONS:

- Other wire lengths
- Other switch temperature in the range 60 to 180°C

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