No. TPQ-20M37TA

Dec . 11 , 2020

TO : Digi-Key Electronics

TECHNICAL REPORT

Product name : DIA THERMISTOR NEGATIVE

Part number : MH18 Series

Interim Specification

This document describes targeted specifications based on a new product under development. Therefore it DOES NOT warrant the new product's specifications.

A separate "SPECIFICATION" will be issued for approval of the final product.

MITSUBISHI MATERIALS CORPORATION CERAMICS PLANT

QUALITY ASSURANCE DEPARTMENT / MANAGER

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Thermistor Sensor Specification		Drawing	ＰＷ－ＡＰ－０４１５Ｅ	Page	1／5
Type	ＭＨ１８ series	Date	December 9, 2010		

REFERENCE DRAWING

1. Usage range

These specifications define thermistor〔 MH18 series 〕.
RoHS directive pass.

2. Type

(Ex.) ＭＨ１８ － ３Ｈ １０３ Ｆ Ｂ
① ② ③ ④ ⑤

No.	Item	Symbol	Specification
①	Product series	ＭＨ１８	MH18 series
②	Material characteristics	３Ｈ	B-value between t1℃ and t2℃. $Bt1/t2=\ln \frac{Rt1}{Rt2} \Big/ \left(\frac{1}{t1+273.15} - \frac{1}{t2+273.15} \right)$ Rt1：Zero-power resistance at t1℃ Rt2：Zero-power resistance at t2℃
③	Zero-power resistance	１０３	Zero-power resistance at 25℃(10×10³Ω) (Reference to table 1)
④	Resistance tolerance	Ｆ	Ｆ：±1% Ｇ：±2% Ｈ：±3%
⑤	Packaging form	Ｂ	Ｂ＝Bulk, Ｐ＝Plastic tape

②・③・④＝Reference to『Table 1』

REFERENCE DRAWING

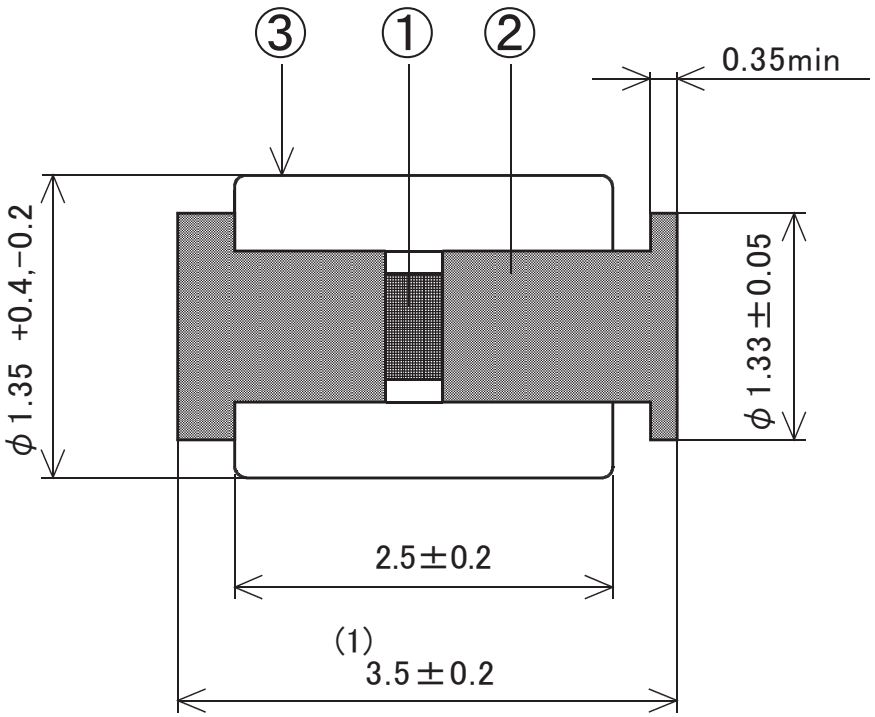
3. Characteristics

Item	Particular	Sign	Specification
3-1 Thermal time constant (ambient temp. change)	The time required for the temperature of a thermistor to change by 63.2% of the difference between 25℃ and 50℃ in still air.	τ	Approx. 140 sec.
3-2 Dissipation constant	The electric power to increase 1 degree in temperature of thermistor at 25℃ in still air.	δ	Approx. 2.0 mW/℃
3-3 Rated power	The maximum dissipation which can be applied to the thermistor for an extended period of time, at an ambient temperature of 25℃.	Pmax.	250 mW
3-4 Operating temperature range	Continuously usable temperature range of thermistor.	Tw	-40～+150℃

※3-1,3-2,3-3 were mounted on a glass epoxy board (t1.2mm)

REFERENCE DRAWING

4． Appearance・Dimensions



(1) MH18-3G202 → 3.45±0.2

Unit：mm

No.	Type	Specification	RoHS compliant
3	Glass tube	SiO_2-PbO-K_2O	Yes
2	Terminal	Dumet (Mounting part：Tin plated)	Yes
1	Thermistor	Flake chip	Yes

REFERENCE DRAWING

Table 1

Resistance・ B-value

Type ＭＨ１８－		R25 (Ω)	B25/50 (K)	B25/85 (K)
３Ｇ２０２		２ｋ	３４７０	３５０７
３Ｇ３０２		３ｋ		
３Ｇ５０２		５ｋ		
３Ｈ１０３		１０ｋ	３４６５	３５０２
６Ｅ２０３		２０ｋ	３９６５	４０１６
６Ｐ３０３		３０ｋ	３９４８	３９８４
６Ｈ５０３		５０ｋ	３７７０	３８２０
３Ｕ１０４		１００ｋ	３９６５	４０３８
３Ｕ１５４		１５０ｋ		
Tolerance	Ｆ	±１%	±１%	(Reference)
	Ｇ	±２%		
	Ｈ	±３%		

REFERENCE DRAWING

5.Caution in thermistor sensor usage

Due to the possibilities of destruction of the sensor, damage or miss use of equipment, please strictly follow below matter.

①The sensor is designed for individual usage. When it is going to be used beyond the specified condition, please speak to your daily contact person for our products.

②Whenever designing the equipment, make sure to check sensor operation and if there is no lack of quality.

③Do not use the sensor exceeding rated electric power.

④Due to possibility of causing the decrease of the value of resistance with self heat and malfunction of the equipment or the precision decrease of the inspection temperature, carefully refer to the dissipation constant usage of electric power and voltage.

⑤Do not use the sensor beyond operating temperature range.

⑥Avoid from exceeding radical temperature change, which is beyond operating temperature range.

⑦If the sensor is used as the main control of the device, be sure to take safety measures such as providing a "safety circuit" and "parallel use with another similar function sensor" to prevent accidents.

⑧Under the environment which receives the influence of electric noise, make sure to take countermeasure by installing a protection circuit and seal the sensor (including the lead wire)

⑨Do not add excessive vibrating shocking pressure.

⑩Avoid from excessive pulling and bending of the lead wire.

⑪Do not impress excessive voltage in the insulated part and between the electrode. his might cause to occur the insulated malfunction.

⑫Do not use in corrosiveness gas atmosphere (Cl_2, NH_3, SOx, NOx) beyond the designated condition. Do not use at the place where the sensor touches the electrolytic, brine, acid, alkaline and organic solvent beyond the designated condition.

⑬When you do processing (such as resin molding) by using thermistor sensor, please be reminded that sensor might be destroyed by the material or mismatch of it.

If there is any others unclear point, please inquire to our company sales in-charge.