

Article from revision
 Description

Device category 1 - relay

Prediction done by: pykp03

MTTF values and failure rates - relay contact -, details according to SN 29500-7

ambient temperature in °C	type of load	type of voltage	voltage in V	current in A	operating cycles per h	failure criteria	failure rate in FIT (λ contact)	MTTF in h	MTTF in a
40	resistive	DC	>0,5	<0,1	360	normal	360	2777777,78	317,1
40	resistive	AC	>13	>0,1	360	normal	36	27777777,78	3170,98
40	resistive	DC	>13	>0,1	360	normal	180	5555555,56	634,2
40	inductive	AC	>13	>0,1	360	normal	360	2777777,78	317,1
40	inductive	DC	>13	>0,1	360	normal	900	1111111,11	126,84
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Notes for device category 1 (relay)

- failure rates (λ) respectively MTTF values (rounded)
- One changeover contact counts as two contacts
- One double contact counts as one contact
- Optional spark-extinguished contacts behave like contacts on ohm resistive load at the same current load
- Standardized load characteristic diagrams are shown in diagramm

The failure rate respectively the MTTF value of the relay can be calculated with the following formula
Only used contacts have to be considered!

Calculation of total failure rate, λ relay (FIT)

$$\lambda_{relay} = \sum \lambda_{contact}$$

Calculation of total MTTF value, MTTF relay (h)

$$MTTF_{relay} = \frac{10^9 h}{\lambda_{relay}}$$

Diagram

