RXEF110 Resettable PPTC Fuse

Radial leaded polymeric PTC overcurrent protector · 1.10 A hold, 2.20 A trip at 20 °C · 72 V DC / 72 V AC rms · 40 A maximum fault current · Non-polarised · Marked X110

1.10 A HOLD | 2.20 A TRIP | 72 V MAX | 40 A I_{MAX} | -40 TO +85 °C | LOW VOLTAGE ONLY

1 ORDERING INFORMATION

ITEM	DETAIL
Click IT SKU CLICK-IT-990317	
Part number	**RXEF110**, bulk bag version
Part marking	**X110** on the first line, with a lot code on the line below
Supplied as	Loose fuses, sold per piece, minimum order 5

2 ABSOLUTE MAXIMUM RATINGS

PARAMETER	VALUE	UNIT
Maximum voltage, V_{MAX} (DC)	**72**	V
Maximum voltage, V_{MAX} (AC)	**72**	V rms
Maximum fault current, I_{MAX} (DC or AC)	**40**	A
Operating temperature	**-40 to +85**	°C
Solder heat withstand[1]	**260 ±5 for 10**	°C / s

V_{MAX} is the highest continuous voltage the device withstands at rated current. I_{MAX} is the highest fault current it withstands at rated voltage. Exceeding either can permanently damage the fuse. [1] IEC 60068-2-20 Test Tb, method 1a. Not suitable for reflow soldering.

3 ELECTRICAL CHARACTERISTICS

PARAMETER	CONDITIONS	VALUE	UNIT
Hold current, I_H	20 °C still air	**1.10**	A
Trip current, I_T	20 °C still air	**2.20**	A
Max time to trip	5.50 A, 20 °C	**8.2**	s
Power dissipated, tripped (typ)	20 °C still air	**1.5**	W
Resistance as supplied, R_{MIN}	20 °C	**0.15**	Ω
Resistance as supplied, R_{MAX}	20 °C	**0.25**	Ω
Resistance after trip, R_{1MAX}	1 h after trip, 20 °C	**0.38**	Ω

I_H is the largest current the device passes without tripping. **I_T** is the smallest current that switches it to its high-resistance state. Between the two, the device may or may not trip. Electrical characteristics are component datasheet values at the stated conditions.

4 HOLD CURRENT VS AMBIENT TEMPERATURE

AMBIENT	-40 °C	-20 °C	0 °C	20 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
Hold current, I_H (A)	**1.71**	**1.50**	**1.31**	**1.10**	**1.06**	**0.89**	**0.79**	**0.69**	**0.59**	**0.44**

A PPTC fuse responds to heat as well as current. The hotter its surroundings, the less current it holds before tripping. Size it for the warmest place it will operate, such as inside an enclosure or beside a regulator, not for room temperature.

5 SELECTING THIS PART

1. **Find the normal current** of the circuit, including start-up and motor inrush that lasts more than a moment.
2. **Find the hottest ambient temperature** the fuse will sit in, then read I_H from the table in Section 4. The normal current must stay below it.
3. **Check the fault current** your supply can deliver into a short. It must exceed I_T (2.20 A at 20 °C) for the fuse to trip, and must not exceed I_{MAX} (40 A).
4. **Check the voltage.** The circuit voltage must not exceed 72 V DC or 72 V AC rms.

Worked example. A 12 V LED strip draws 0.8 A inside an enclosure that reaches 40 °C. I_H at 40 °C is 0.89 A, which is above 0.8 A, so the RXEF110 suits it. In a 60 °C space, I_H drops to 0.69 A and the same load could trip it; choose a higher-rated fuse or improve cooling.

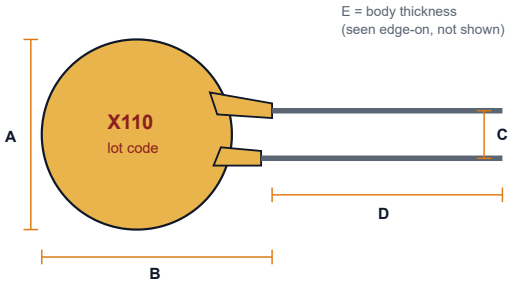
Voltage drop. At 1 A the resistance of a new device (0.15 to 0.25 Ω) drops 0.15 to 0.25 V. Allow for this on 5 V supplies feeding sensitive loads.

6 MECHANICAL DATA

DIMENSION	MIN	MAX	UNIT
A Body width	-	12.8	mm
B Body length along the leads	-	17.5	mm
C Lead spacing, centre to centre	4.3	5.8	mm
D Lead length beyond the coating	7.6	-	mm
E Body thickness	-	3.0	mm

ITEM	DETAIL
Lead diameter	0.81 mm (20 AWG, 0.52 mm²)
Lead material	Tin-plated copper
Coating	Cured flame-retardant epoxy, UL 94 V-0
Device mass (reference)	0.546 g

Nominal lead spacing is 5.05 mm, which fits 5.08 mm (0.2 in) PCB pitch. Dimensions are component datasheet values. Trim the leads to suit your board or wiring.



Outline, marked face. Simplified and **not to scale**. Letters refer to the table.

7 ENVIRONMENTAL AND SOLDERING DATA

TEST	CONDITIONS	RESISTANCE CHANGE
Passive ageing	-40 °C, 1000 h	**±5%**
Passive ageing	85 °C, 1000 h	**±5%**
Humidity ageing	85 °C, 85% RH, 1000 h	**±10%**
Thermal shock	85 °C to -40 °C, 10 cycles	**±10%**
Solvent resistance	MIL-STD-202, method 215F	**No change**

ITEM	DETAIL
Solderability	ANSI/J-STD-002, category 3
Soldering method	Hand or wave soldering. **Not for reflow ovens.**
Moisture sensitivity	Level 1, J-STD-020
Storage	40 °C max, 70% RH max, in a sealed bag until use
Compliance	RoHS, lead-free and halogen-free

8 APPLICATION AND IMPLEMENTATION

8.1 PLACEMENT

- **Wire it in series with the supply**, as close to the source as possible, so the wiring after it is protected too. It is not polarised.
- **Keep it away from heat sources.** Regulators, power resistors and motor drivers nearby lower its hold current. See Section 4.
- **Leave a little air around the body.** Potting it, wrapping it in heatshrink or clamping it to metal changes how fast it heats and cools.
- **Low voltage only.** Never use it on 230 V mains. It is not a replacement for a mains fuse or circuit breaker.

8.2 TRIP AND RESET BEHAVIOUR

When a fault draws more than I_T, the polymer heats and its resistance rises sharply. The current falls to a small leakage that keeps the device hot, about 1.5 W, so it stays tripped for as long as the fault and supply remain.

To reset, remove the power or clear the fault and let the fuse cool. It then returns to a low resistance. Expect the resistance to be up to 0.38 Ω an hour after a trip, above the as-supplied figure.

Trip time depends on the overload. At 5.5 A it trips within 8.2 s at 20 °C. Heavier faults trip it faster. A fault just above I_T can take much longer.

9 TROUBLESHOOTING

SYMPTOM	LIKELY CAUSE AND FIX
Trips during normal use	Load is above I_H at the real ambient temperature, or the fuse sits near something hot. Check the current and Section 4, then move the fuse or choose a higher rating.
Never trips on a short	The supply cannot deliver more than I_T, or limits its own current first. The fuse only acts on faults above 2.20 A at 20 °C.
Stays off after a fault	The fault or supply is still connected, keeping it hot. Remove power, clear the fault and allow it to cool.
Fuse body hot, output near zero	Normal tripped state. Find the fault before restoring power.

10 REVISION HISTORY

REV	DATE	CHANGE
1	2026-10-05	Initial release. Electrical, derating, mechanical and environmental data per the component datasheet; marking per Click IT stock inspection.