

CIRCUIT BREAKER 500

Pyrotechnic circuit breaker for high-voltage applications in electric vehicles

- Provides irreversible secure separation over full current range
- Low internal resistance
- Lightweight design at small formfactor
- High insulation resistance after activation



Key functional parameters

Separation capacity (voltage current inductance)	500 V 16 kA 20 μ H (higher/alternative values on request)
Separation time	< 1.5 ms (typical < 0.9 ms)
Operating temperature	-40 °C to +85 °C
Ambient temperature	-40 °C to +85 °C
Product lifetime	15 years*
Qualification	in accordance with LV 123 and LV 124
Weight	270 g

*operating hours depending on temperature collective & activation energy

HV connection (busbar)

Busbar - igniter - insulation resistance	> 50 M Ω (before and after activation)
Busbar resistance	\leq 50 $\mu\Omega$ (before activation) > 50 M Ω (after activation)
Ground resistance	max. 1 Ω
Busbar material	copper + Ni/Sn plating (alternatives on request)
Busbar cross-section area	64 mm ²
Intended type of connection	screwing (M8)
Distance between screw holes	84 mm

LV connection (igniter)

Terminal type	Pin type (2 pins), gold-coated
11 mm Squib-Interface (unsealed)	AK-1/AK2/ABX-5 following ISO 19072-1 commonly used: AK-2 code I
Pyrotechnics	GTMS igniter (LV16 & USCAR-28), maximum pyrotechnic mass 118 mg
Igniter resistance	2.0 Ω \pm 0.3 Ω
Igniter parameter "No fire"	\leq 0.4 A \leq 5 A for \leq 4 μ s
Igniter parameter "All fire"	1.75 A to 40 A for 0.5 ms \geq 1.2 A for \leq 2 ms

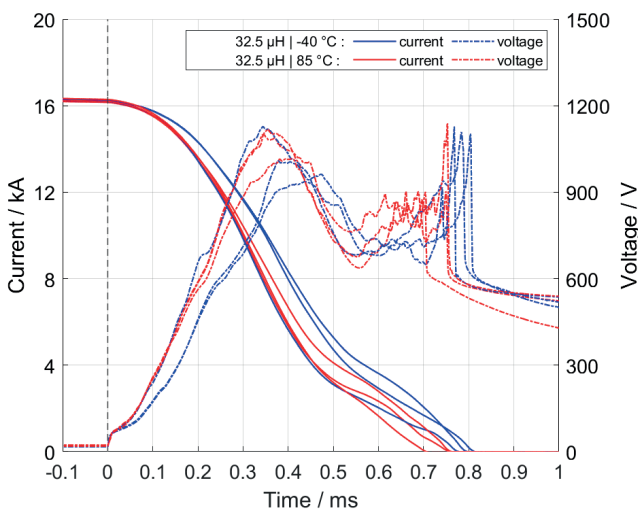
Current carrying capacity*

Ambient temperature	Current	Duration
+95 °C	400 A	continuous

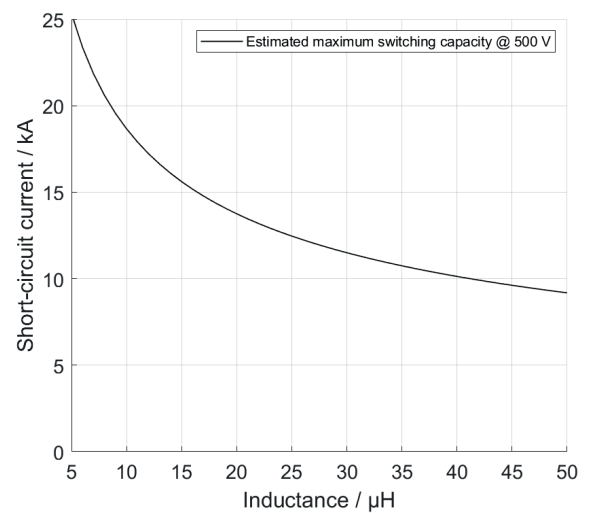
*depending on cooling, convection, cross-section, contact surface etc. (thermal model upon request)

Typical curves

Typical current and voltage curves

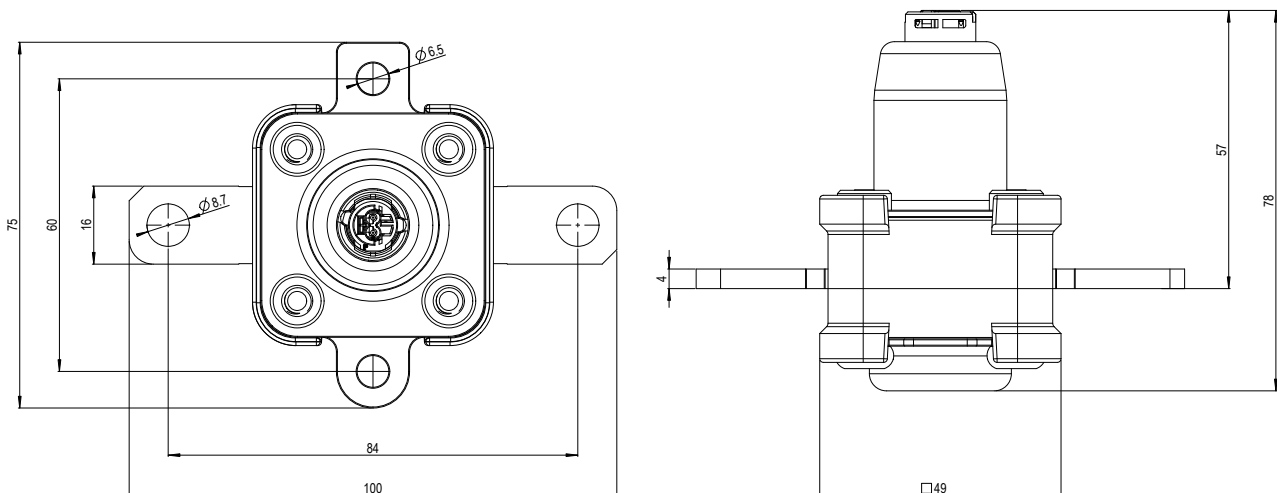


Estimated maximum switching capacity



Outline dimensions*

*in mm



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