EKC14

14 x 38 mm EV fuse

Product features

- 14 x 38 mm fuse
- Current rating: 40 A to 50 A
- 1000 Vdc rating
- High breaking capacity for high energy applications
- Designed to JASO D622, ISO8820-8, GB/T31465
- Produced in a factory with ISO9001 & IATF16949 certification
- Minimum breaking capacity 300% In at rated DC voltage
- Bolt-down terminal and PCB terminal options

Applications

- Automotive and commercial vehicle on-board chargers
- Uninterruptible power supplies (UPS)
- 3-phase EVSE and charging infrastructure
- Motor protection
- Rectifiers and inverters
- Energy storage systems
- On-board electric vehicle powertrain and distribution

Environmental compliance

HALOGEN HF FREE · RoHS · Pb

Ordering part number

EKC14-50-SCT

- Family code
- Ampere rating (50 = 50 A)
- Option code

Option code

3P = 3 pin PCB terminal
SCT = Bolt down single cap

Powering Business Worldwide

Electrical characteristics

Amps (A)	Minimum (seconds)	Maximum (seconds)
2.0 In	0.5	100
3.0 In	0.1	15
5.0 In	0.05	1.0

Product specifications

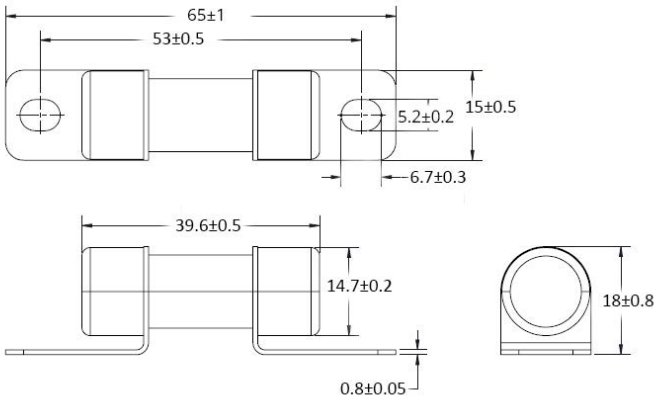
Part number	Rated voltage	Rated current (A)	Breaking capacity	Typical cold resistance[1] (mΩ)	Typical voltage drop (mV)	Power loss @ 0.5 In (W)
EKC14-40	1000 Vdc	40	1000 Vdc/50 kA	2.43	160	1.3
EKC14-50	1000 Vdc	50	1000 Vdc/50 kA	1.90	155	1.45

1. Cold resistance is measured at <10% In and +25 °C ambient temperature

Dimensions- mm

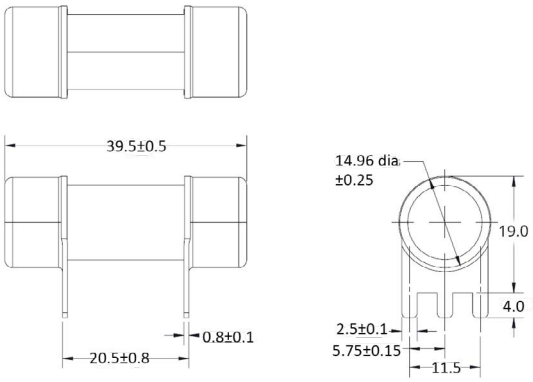
Tolerances unless otherwise specified
One place x.x = ± 0.3 mm
Two places x.xx = ± 0.13 mm

SCT: Bolt-down terminal single cap

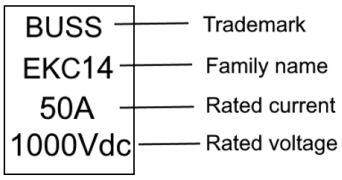


Note: recommended tightening torque is 4.5+/-1.0 Nm for M5 Screw

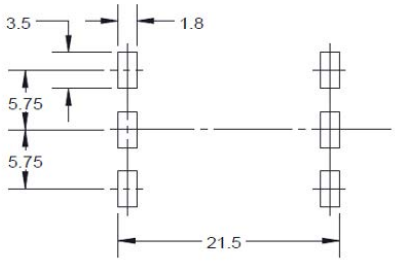
3P: 3 pin PCB terminal



Part marking



PCB layout 3P: 3 pin PCB terminal



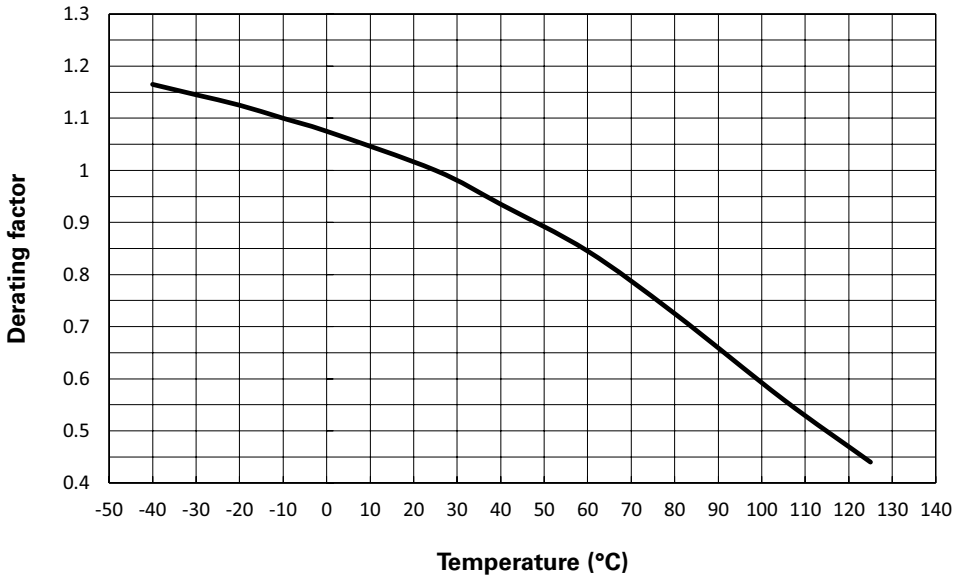
General specifications

Operating temperature: -40 °C to +125 °C with proper derating factor applied
Strength of terminals: JASO D622 6.3.9, mounting torque 4.5 +/-1 Nm, 3 times
Temperature humidity cycling: JASO D622 6.3.4.1, a) maintain the samples at standard conditions for 4 hours b) increase T to 55 +/-2 °C at 95% to 99% RH within 0.5 hours c) maintain T at 55 +/-2 °C at 95% to 99% RH for 10 hours d) decrease T to -40 +/-2 °C within 2.5 hours; the humidity is uncontrolled e) maintain T at -40 +/-2 °C for 2 hours; the humidity is uncontrolled f) increase T to 120 +/-2 °C within 1.5 hours from -40 +/-2 °C; the humidity is uncontrolled g) maintain T at 120 +/-2 °C for 2 hours; the humidity is uncontrolled h) allow to return to RT within 1.5 hours; the humidity is uncontrolled 10 cycles.
Thermal shock: ISO8820-8 GB/T31465.6, 48 cycles; -40 °C to 100 °C, each cycle 60 minutes
Vibration: JASO D622 6.3.3, 10-55 Hz, 3 directions, 2 hours each direction
Transient current cycling: JASO D622 6.3.2 (reference), The transient current start from 2.0 In for 0.25 seconds, then drop to 0.5 In and keep this current to 15 seconds to finish one cycle, total 50000 cycles
Lubricant & fuel oil resistance: GB/T31465.1-5.4, Wipe the marking with lubricant or oil 30 seconds

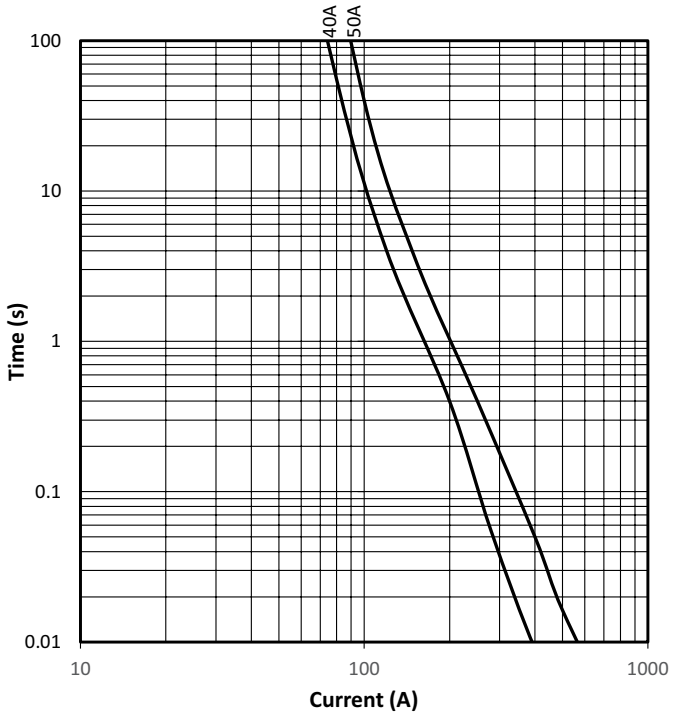
Packaging information

Terminals	Inner package	Ship package
SCT	12 pieces/box	324 pieces/box
3P	10 pieces/box	240 pieces/box

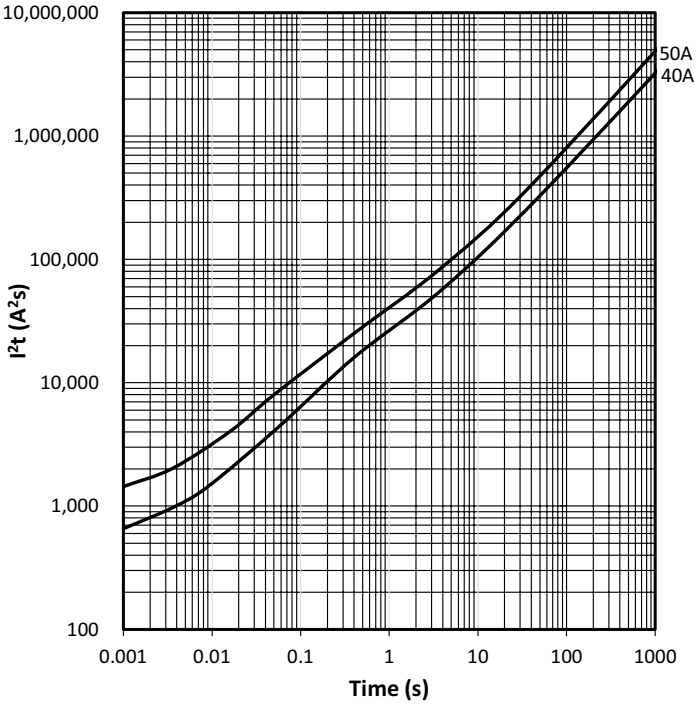
Temperature derating curve



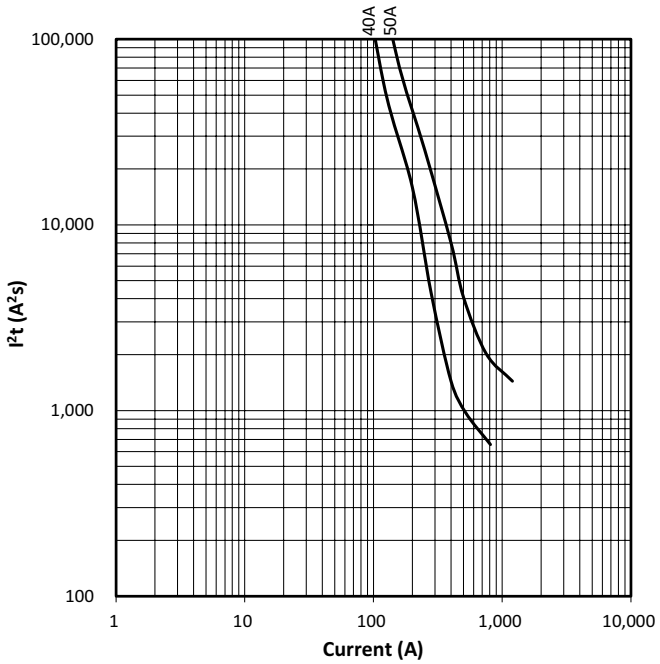
Current vs. time curve



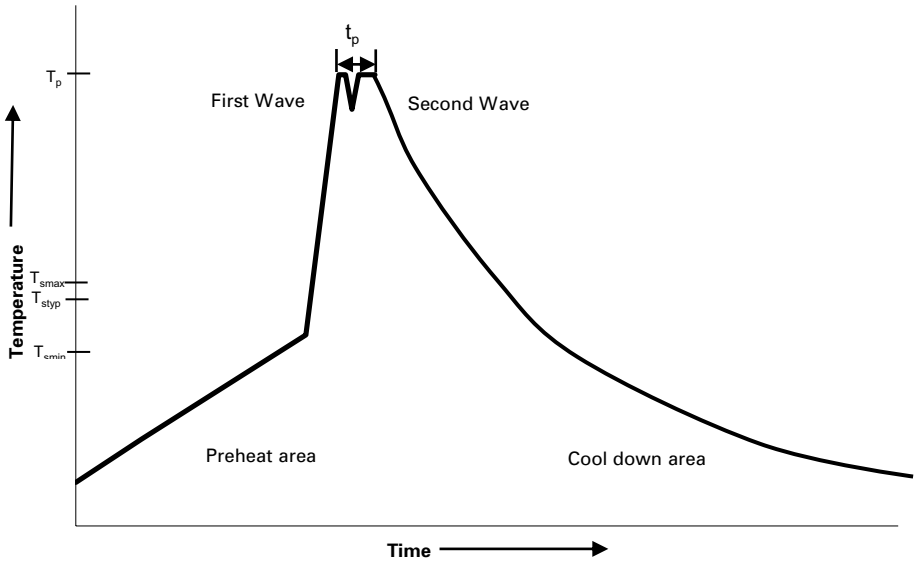
I²T vs. time curve



I²t vs. current curve



Wave solder profile--PCB version only



Reference EN 61760-1:2006

Profile feature		Standard SnPb solder	Lead (Pb) free solder
Preheat	• Temperature min. (T_{smin})	100 °C	100 °C
	• Temperature typ. (T_{styp})	120 °C	120 °C
	• Temperature max. (T_{smax})	130 °C	130 °C
	• Time (T_{smin} to T_{smax}) (t_s)	70 seconds	70 seconds
Δ preheat to max Temperature		150 °C max.	150 °C max.
Peak temperature (T_p)*		235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature (t_p)		10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate		~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25 °C to 25 °C		4 minutes	4 minutes

Manual solder

+350 °C (4-5 seconds by soldering iron), generally manual/hand soldering is not recommended.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

Printed in USA
Publication No. ELX1309 BU-ELX22172
May 2023

Powering Business Worldwide

Follow us on social media to get the latest product and support information.