

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



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

Electrical characteristics

Amps (A)	Minimum (seconds)	Maximum (seconds)
2.0 I _n	0.5	100
3.0 I _n	0.1	15
5.0 I _n	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 I _n (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% I_n and +25 °C ambient temperature

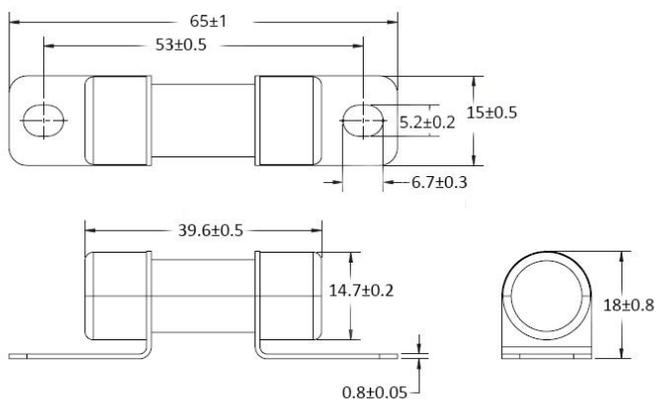
Dimensions- mm

Tolerances unless otherwise specified

One place x.x = ± 0.3 mm

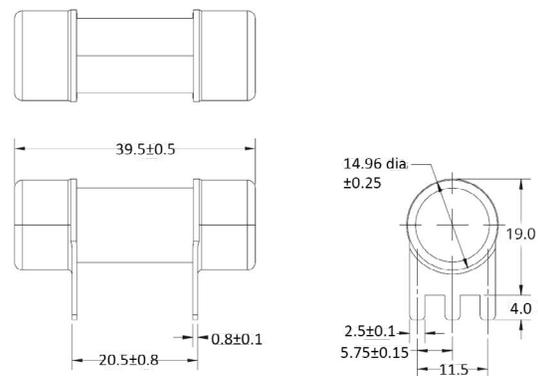
Two places x.xx = ± 0.13 mm

SCT: Bolt-down terminal single cap



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

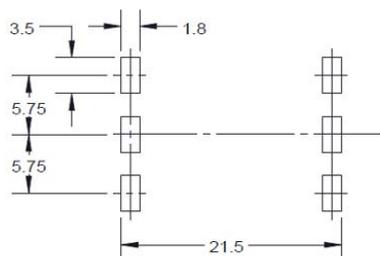
3P: 3 pin PCB terminal



Part marking

PCB layout 3P: 3 pin PCB terminal

BUSS	Trademark
EKC14	Family name
50A	Rated current
1000Vdc	Rated voltage



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

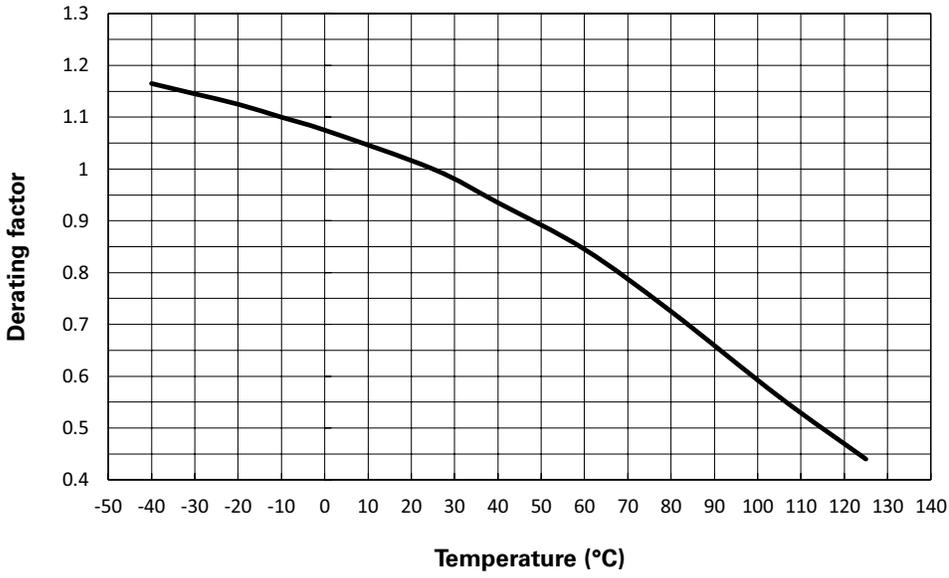
Transient current cycling: JASO D622 6.3.2 (reference), The transient current start from 2.0 In for 0.25 seconds, then drop to 0.5 In and keep this current to 15 seconds to finish one cycle, total 50000 cycles

Lubricant & fuel oil resistance: GB/T31465.1-5.4, Wipe the marking with lubricant or oil 30 seconds

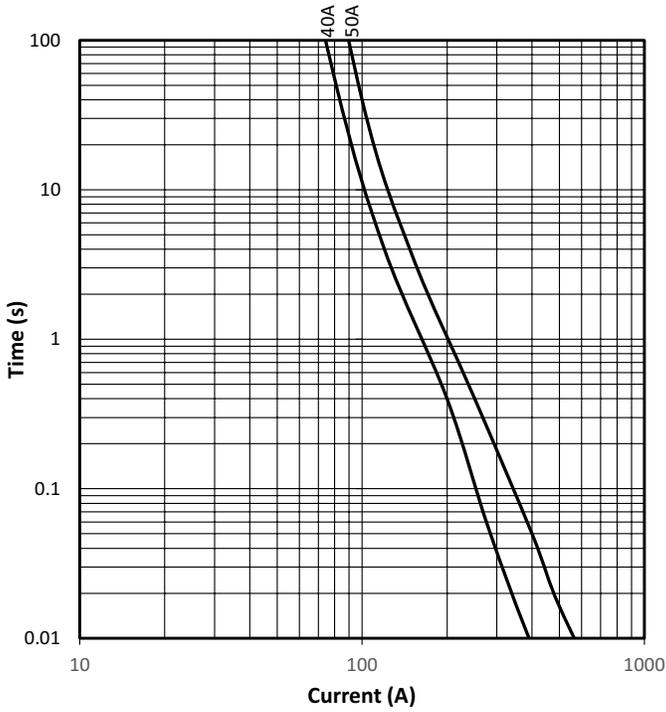
Packaging information

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

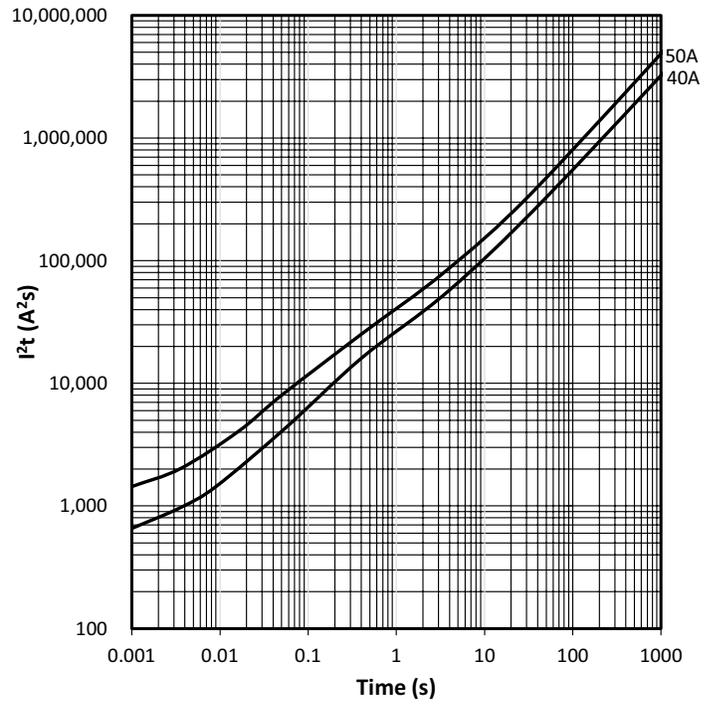
Temperature derating curve



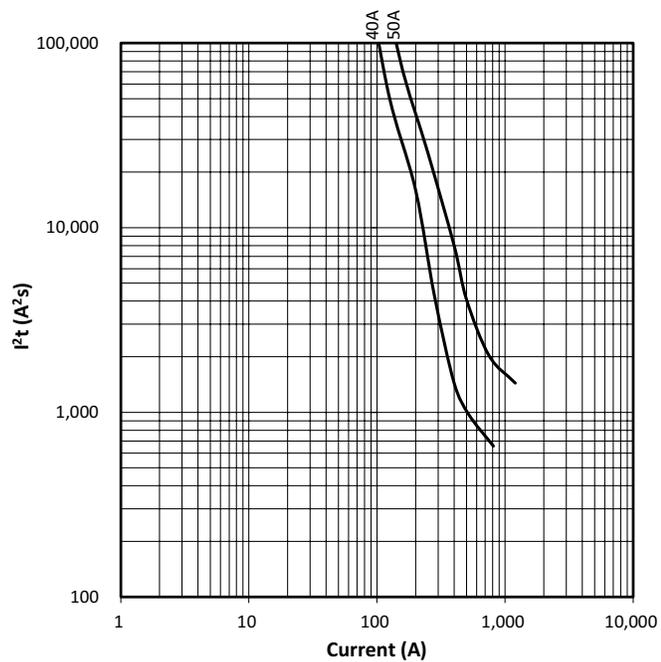
Current vs. time curve



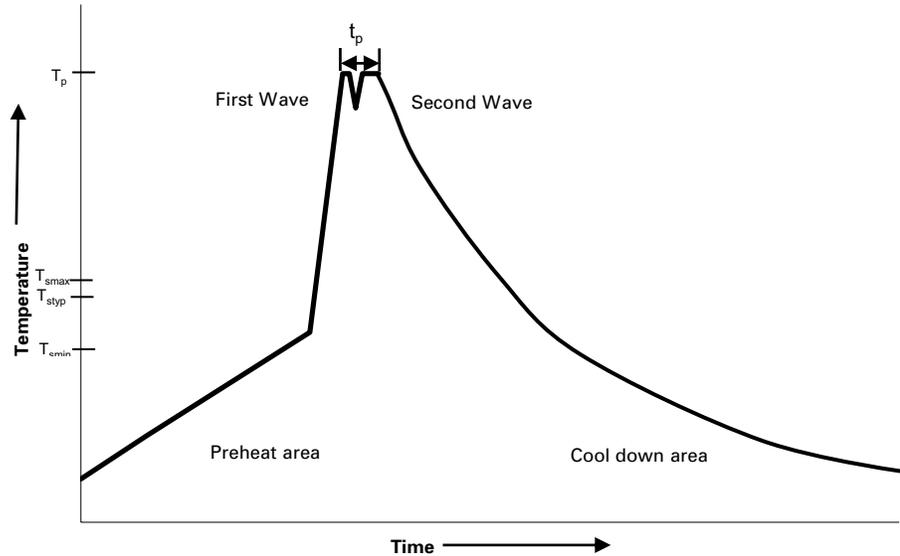
I²t vs. time curve



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.

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