

EKM10

10 x 38 mm EV fuse



Product features

- 10 x 38 mm fuse
- Current rating: 10 A to 30 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 and PCB terminal options available

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

EKM10-30-SCT

Family code _____
 Ampere rating (30 = 30 A) _____
 Option code _____

Option code

- 1P = 1 pin PCB terminal
- 2P = 2 pin PCB terminal
- SCT = Bolt down single cap tag
- AT = Bolt down axial tag

Electrical characteristics

Amps (A)	Minimum (seconds)	Maximum (seconds)
1.0 I _n	14400	-
2.0 I _n	1.0	300
3.0 I _n	0.2	30
5.0 I _n	0.1	10

Product specifications

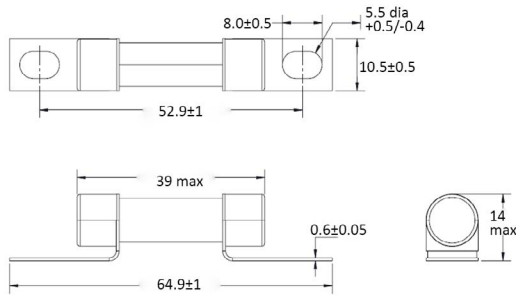
Part number	Rated voltage	Rated current (A)	Breaking capacity	Typical cold resistance ¹ (mΩ)	Typical voltage drop (mV)
EKM10-10	1000 Vdc	10	1000 Vdc/50 kA	12.5	180
EKM10-15	1000 Vdc	15	1000 Vdc/50 kA	7.2	160
EKM10-20	1000 Vdc	20	1000 Vdc/50 kA	5.2	150
EKM10-25	1000 Vdc	25	1000 Vdc/50 kA	4.0	160
EKM10-30	1000 Vdc	30	1000 Vdc/50 kA	3.1	160

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

Dimensions- mm

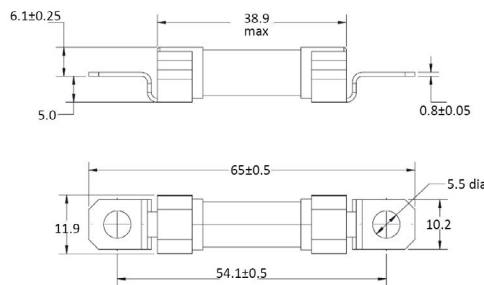
Tolerances unless otherwise specified
One place x.x = ± 0.3 mm
Two places x.xx = ± 0.13 mm

SCT: Bolt-down single cap tag



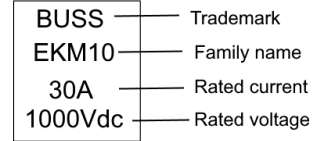
Note: recommend tightening torque is 4.5 ±1.0 Nm for M5 Screw

AT: Bolt down axial tag

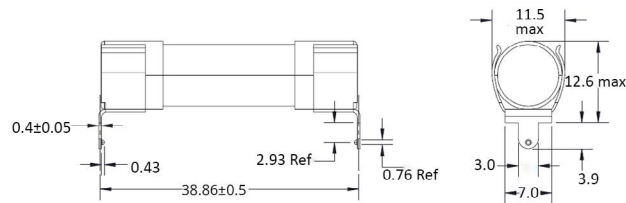


Note: recommend tightening torque is 4.5 ±1.0 Nm for M5 Screw

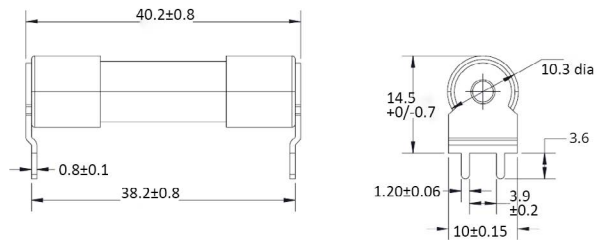
Part marking



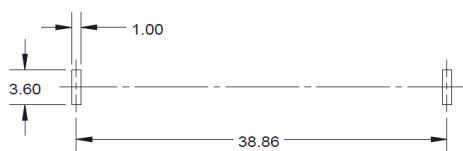
1P: 1 pin PCB terminal



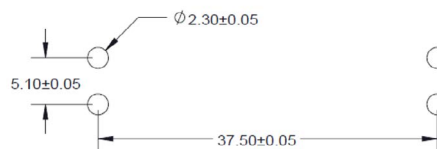
2P: 2 pin PCB terminal



PCB layout 1P: 1 pin PCB terminal



PCB layout 2P: 2 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

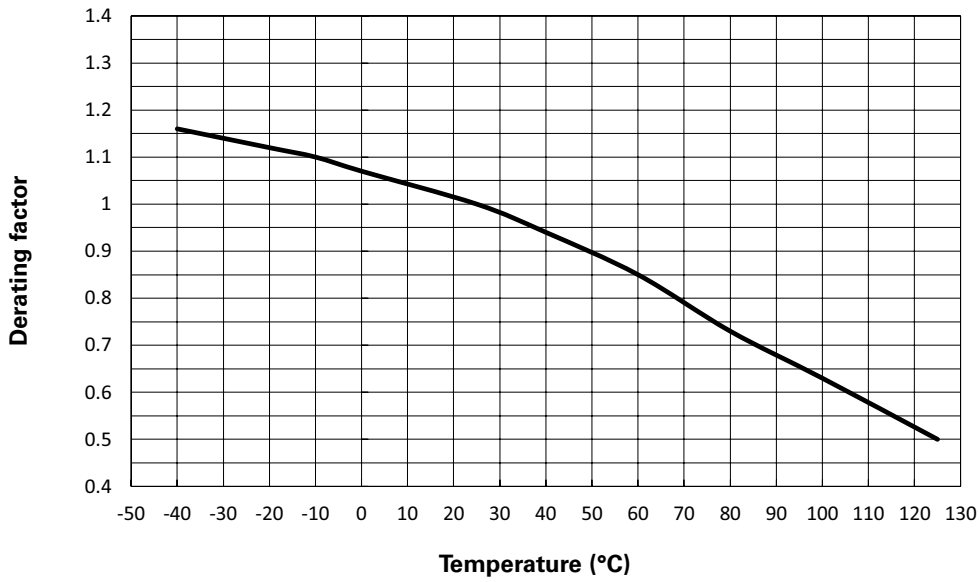
Transient current cycling: JASO D622 6.3.2 (reference), The transient current start from 2.0 In for 0.25 seconds, then drop to 0.5 In and keep this current to 15 seconds to finish one cycle, total 50000 cycles

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

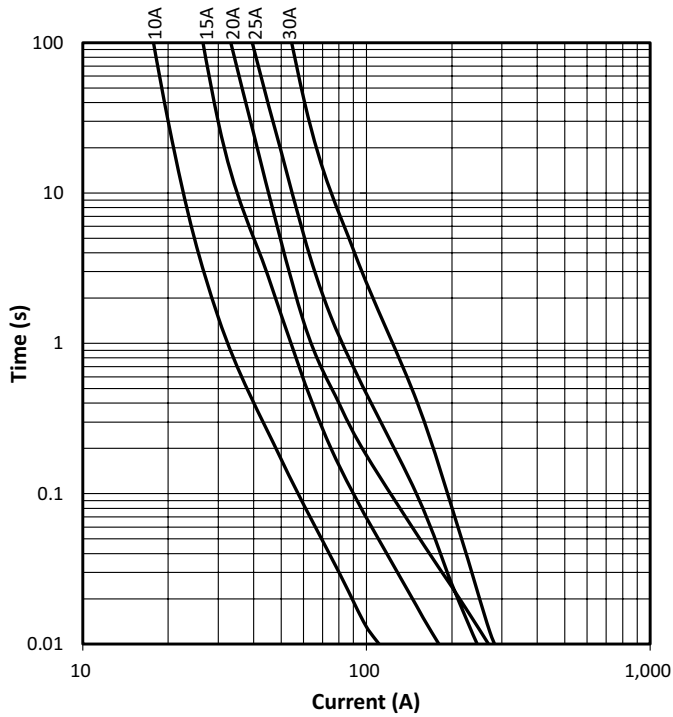
Packaging information

Terminals	Inner package	Ship package
SCT	40 pieces/tray	400 pieces/box
AT	20 pieces/box	540 pieces/box
1P	20 pieces/bag	540 pieces/box
2P	20 pieces/box	640 pieces/box

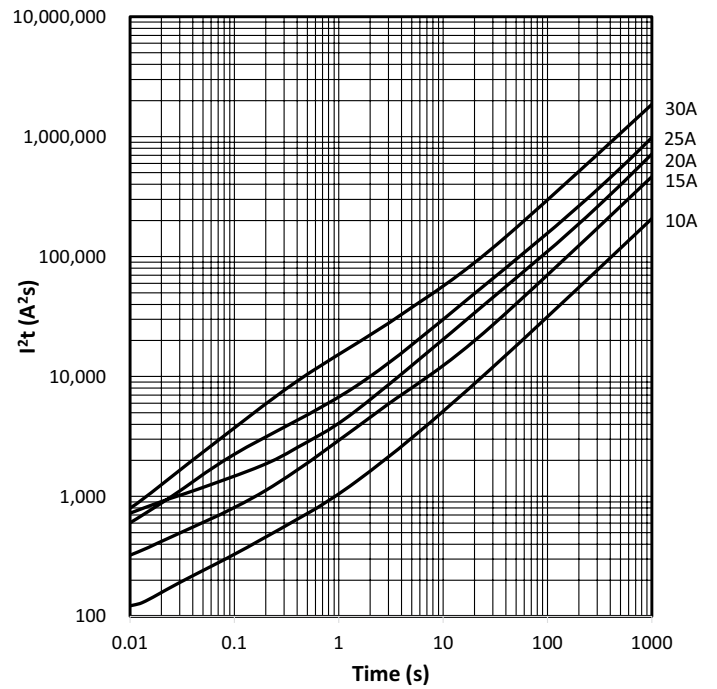
Temperature derating curve



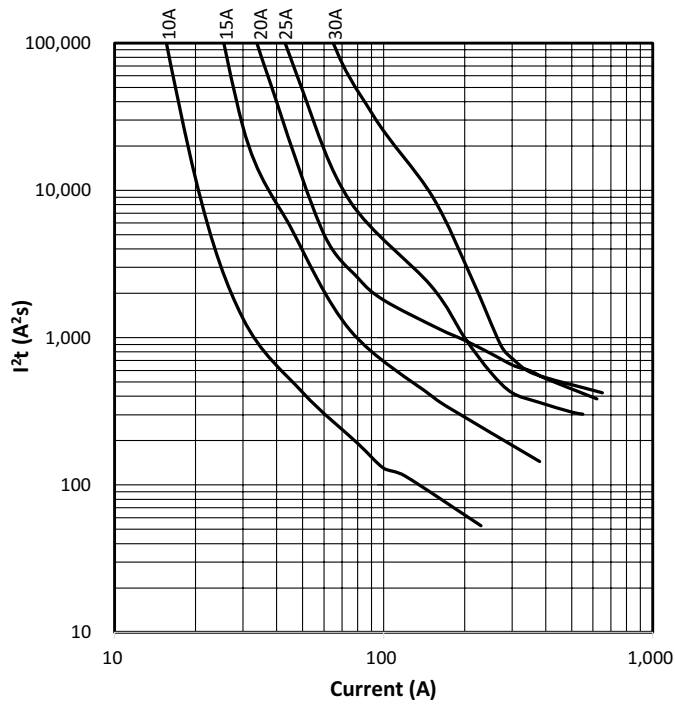
Current vs. time curve



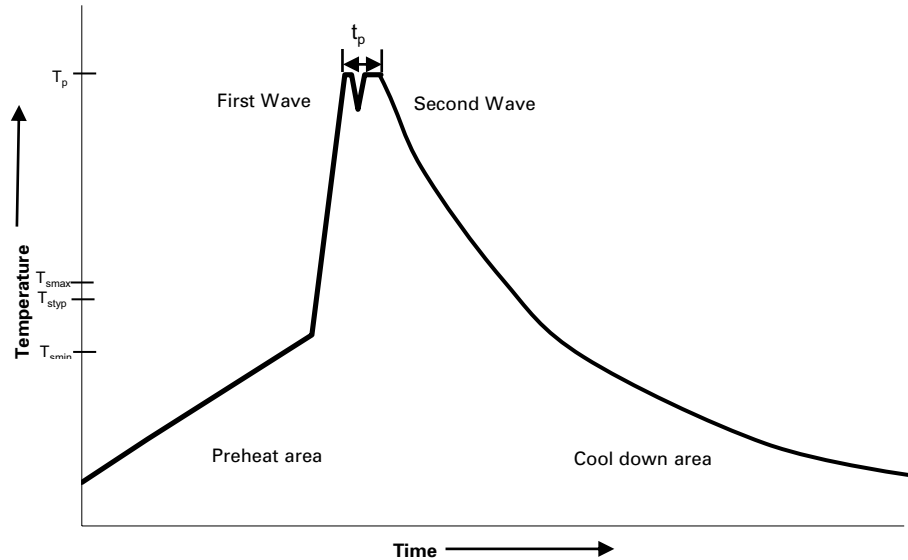
I²T vs. time curve



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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