

KLKE

10 x 38 mm fuse for protection of semiconductor devices



Product features

- 10 x 38 mm fuse
- Current rating: 5 A to 30 A
- 600 Vac/Vdc rating
- Designed to UL 248-13
- Minimum breaking capacity 300% I_n at rated DC voltage
- Cylindrical (cartridge), bolt-down terminal and PCB terminal options available

Applications

- Uninterruptible power supplies (UPS)
- 3-phase EVSE and charging infrastructure
- Motor protection
- Rectifiers and inverters
- Energy storage systems

Agency information

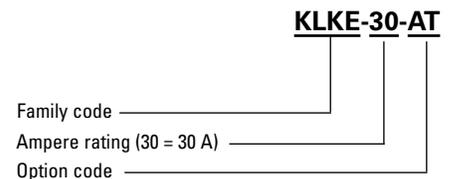
cURus Recognition file number: E91958



Environmental compliance



Ordering part number



Option code

Blank = Standard cylindrical (cartridge)
 1P = 1 pin PCB terminal
 FT = Bolt down flush tag
 AT = Bolt down axial tag

Electrical characteristics

Amps (A)	Minimum (seconds)	Maximum (seconds)
1.0 I _n	14,400	-
1.35 I _n	-	3600
2.0 I _n	-	120

Product specifications

Part number	Rated voltage	Rated current (A)	Breaking capacity	Typical cold resistance ¹ (mΩ)	Typical voltage drop (mV)	Power loss @ 1.0 I _n (W)
KLKE-5	600 Vac 600 Vdc	5	600 Vac/50 kA 600 Vdc/50 kA	54.46	500	2.5
KLKE-6	600 Vac 600 Vdc	6	600 Vac/50 kA 600 Vdc/50 kA	39	400	2.4
KLKE-8	600 Vac 600 Vdc	8	600 Vac/50 kA 600 Vdc/50 kA	22.43	300	2.4
KLKE-10	600 Vac 600 Vdc	10	600 Vac/50 kA 600 Vdc/50 kA	15	210	2.1
KLKE-12	600 Vac 600 Vdc	12	600 Vac/50 kA 600 Vdc/50 kA	12.5	250	3.0
KLKE-15	600 Vac 600 Vdc	15	600 Vac/50 kA 600 Vdc/50 kA	9.15	230	3.45
KLKE-20	600 Vac 600 Vdc	20	600 Vac/50 kA 600 Vdc/50 kA	5.31	160	3.2
KLKE-25	600 Vac 600 Vdc	25	600 Vac/50 kA 600 Vdc/50 kA	4.6	160	4.0
KLKE-30	600 Vac 600 Vdc	30	600 Vac/50 kA 600 Vdc/50 kA	3.4	160	4.8

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

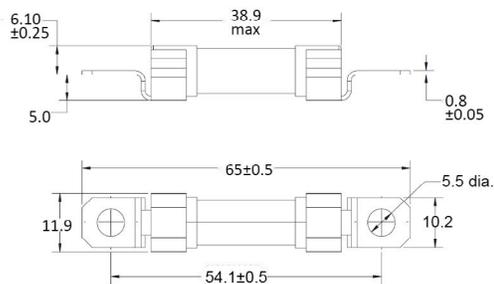
Dimensions- mm

Tolerances unless otherwise specified

One place x.x = ± 0.3 mm

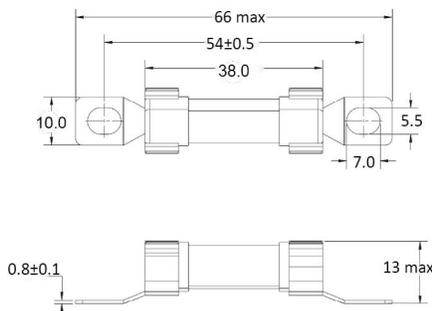
Two places x.xx = ± 0.13 mm

AT: Bolt-down axial tag



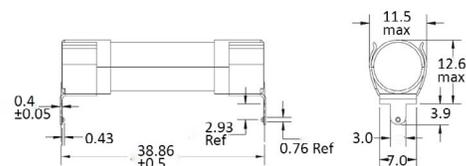
Note: recommended tightening torque is 4.5+/-1.0 Nm for M5 Screw

FT: Bolt-down flush



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

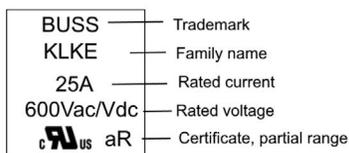
1P: 1 pin PCB terminal



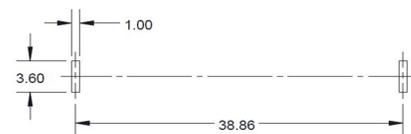
Standard cylindrical



Part marking



PCB layout 1P: 1 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

Humidity test: MIL-STD-202G Method 103B, Condition A, 90%-95% RHD, +40 °C for 240 hours

Thermal shock: ISO8820-8 GB/T31465.6, 48 cycles; -40 °C to 100 °C, each cycle 60 minutes

Mechanical shock: MIL-STD-202G Method 213, half-sine waveform, 50 m/s² for 11 ms, 3 times shock per side orientation, total 18 times

Vibration: MIL-STD-202G Method 201A, Ambient temperature +23 °C +/-5 °C, 10-55 Hz, 3 directions, 2 hours each direction

Resistance to solvents: GB/T31465.1-5.4 , Wipe the fuse tube body with gasoline & lubricant for 30s respectively

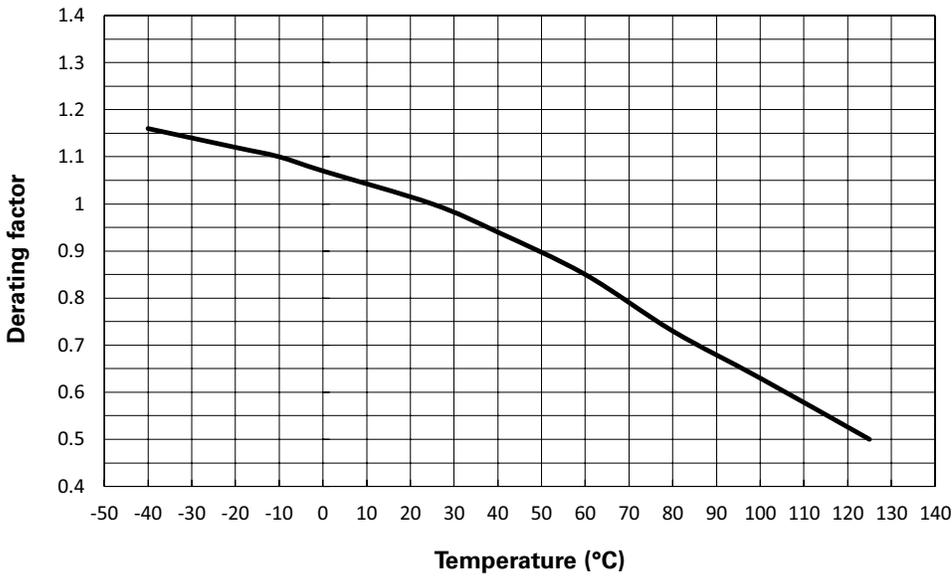
Terminal solderability test: MIL-STD-202G, Method 208H, 1 hour for 1P terminal steam aging, then dip into solder bath (+245 °C +/-5 °C), dwell time 5 s +/-0.5 s, visual check the soldering area.

Resistance to soldering heat: IEC 60068-2-20 method 1A, Sold bath temperature +260 °C +/-5 °C, dwell Time 10+/- 1s, visual check and measure cold resistance after the test with ambient temperature: +23 °C +/-5 °C

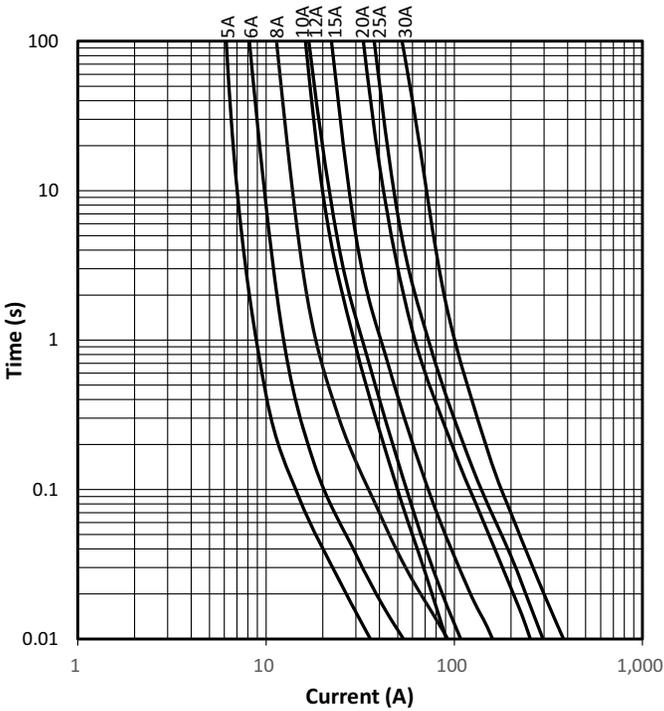
Packaging information

Terminals	Inner package	Ship package
AT	20 pieces/box	540 pieces/box
FT	16 pieces/box	432 pieces/box
1P	20 pieces/bag	540 pieces/box
Blank	10 pieces/box	800 pieces/box

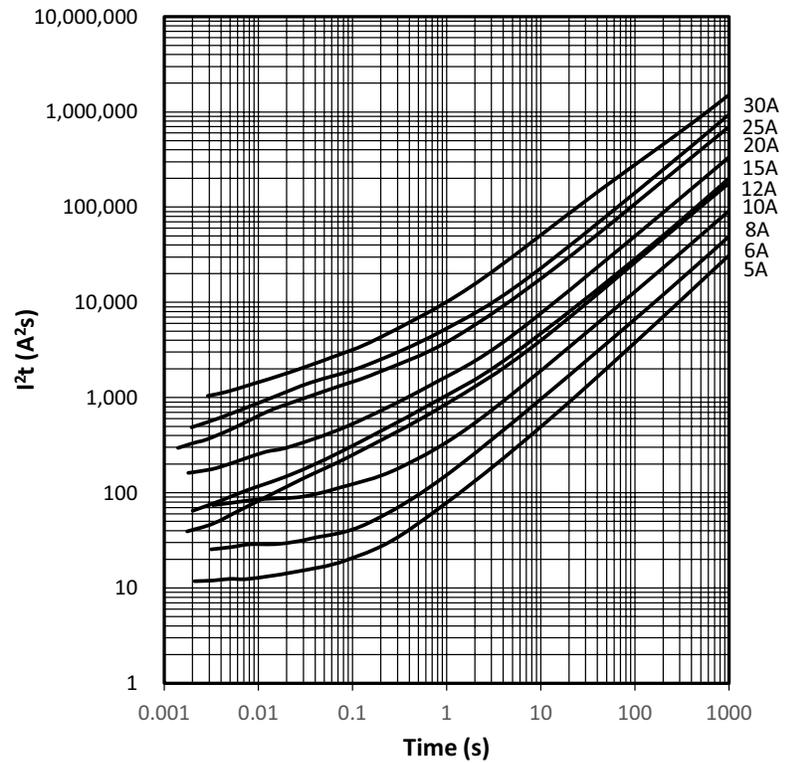
Temperature derating curve



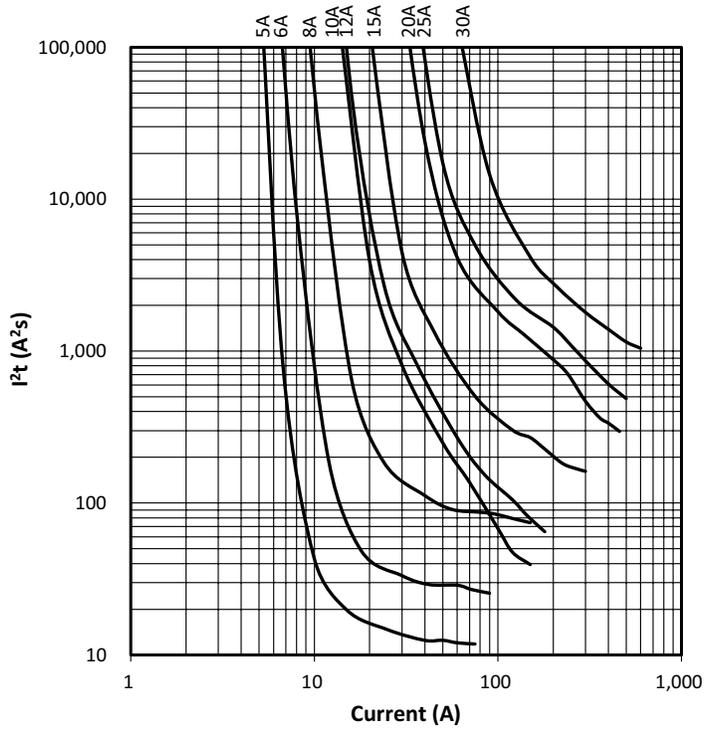
Current vs. time curve



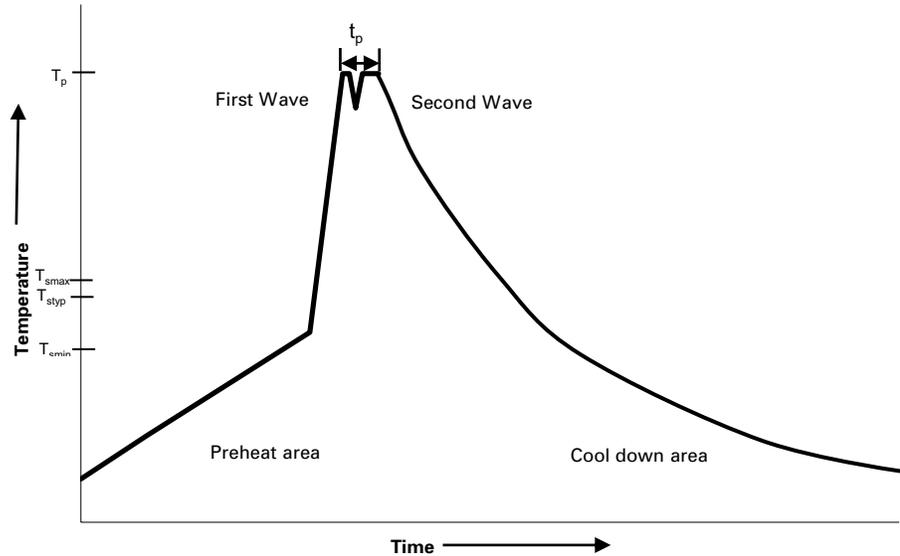
I²T vs. time curve



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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