Effective December 2019 Supersedes January 2016

# BUSSMANN SERIES

# **SS-5** 250 V Subminiature, radial leaded, time-delay fuses





#### **Product features**

- Radial leaded, time delay with low breaking capacity
- Designed to IEC60127-3 Sheet 4
- Plastic cap and base, flammability UL 94V0
- Protects against harmful overcurrents in primary and secondary applications
- Small rectangular-leaded design utilizes less board space
- High frequency vibration: MIL-STD-202F, Method 201A

# Applications

Primary and secondary circuit protection:

- Power supplies
- Notebooks and laptops
- · Appliances and white goods
- Lighting ballasts
- Power adapters
- Set top boxes
- LED/LCD televisions and displays
- Air conditioners
- Battery chargers

#### Agency information

- UL Recognition: File E19180, Guide JDYX2/ JDYX8 (200 mA - 6.3 A)
- VDE: 40015513 (200 mA 6.3 A)
- CCC: 2019010207246964 (200 mA 6.3 A)
- PSE: JET 1641-31007-1008 (1 A – 5 A) JET 1641-31007-1009 (6.3 A)
- KC: SU05011-8001 (400 mA – 800 mA) SU05011-8002 (1 A – 2.5 A) SU05011-8003 (3.15 A – 6.3 A)
- Semko: 1516697 (630 mA, 1 A – 4 A) 1124941 (500 mA, 800 mA, 5 A, 6.3 A)

#### Ordering

• Use ordering number (see page 6 for details)

#### **Packaging suffixes**

- -AP (1 000 parts Ammo pack, Pitch = 12.7)
- -BK (200 parts in a polybag, Lead L = 4.3  $\pm$  0.3)
- -BK2 (200 parts in a polybag, Lead L =  $21 \pm 3.0$ )



#### **Electrical characteristics**

<u>I,</u>	1.51 <sub>n</sub>	2.11	2.751	2.75l <sub>n</sub>	4l <sub>n</sub>	4l <sub>n</sub>	10l <sub>n</sub>	10l <sub>n</sub>
	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum
	minute	minute	ms	s	ms	s	ms	ms
200 mA – 6.3 A	60	2	400	10	150	3	20	150

#### **Product specifications**

Part number	Current rating (A)	Voltage rating (Vac )	Interrupting rating at rated voltage¹ (50 Hz) (Aac)	t Typical DC cold resistance²(mΩ)	Typical melting³ l²t (A²s)	Typical voltage drop⁴ (mV)	cURus	KC	VDE	CCC	SEMKO	PSE+ JET <sup>1</sup>
SS-5-200mA	0.2	250	35	960	0.35	212	Х		Х	Х		
SS-5-400mA	0.4	250	35	330	1.67	147	Х	Х	Х	Х		
SS-5-500mA	0.5	250	35	258	1.79	152	Х	Х	Х	Х	Х	
SS-5-630mA	0.63	250	35	140	1.51	101	Х	Х	Х	Х	Х	
SS-5-800mA	0.8	250	35	118	4.21	111	Х	Х	Х	Х	Х	
SS-5-1A	1.0	250	35	80.8	7.40	94.5	Х	Х	Х	Х	Х	Х
SS-5-1.25A	1.25	250	35	62.4	12.8	93.5	Х	Х	Х	Х	Х	Х
SS-5-1.6A	1.6	250	35	41	23	71.5	Х	Х	Х	Х	Х	Х
SS-5-2A	2.0	250	35	31.2	29.8	75	Х	Х	Х	Х	Х	Х
SS-5-2.5A	2.5	250	35	24.3	40.3	74.5	Х	Х	Х	Х	Х	Х
SS-5-3.15A	3.15	250	35	16.8	67	62.5	Х	Х	Х	Х	Х	Х
SS-5-4A	4.0	250	40	12.8	87	65.4	Х	Х	Х	Х	Х	Х
SS-5-5A	5.0	250	50	7.35	120	43	Х	Х	Х	Х	Х	Х
SS-5-6.3A	6.3	250	63	7.4	176	59	Х	Х	Х	Х	Х	Х

1. 200 mA to 3.15 A measured at 35 A, 95% - 100% of PF on AC. 4 A - 6.3 A measured at 10 times of

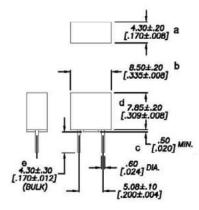
rating current 95% - 100% of PF on AC.

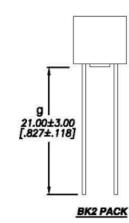
2. Typical cold resistance measured at < 10% of rated current

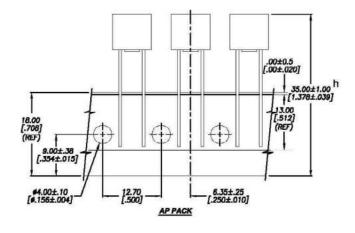
3.  $l^2t$  value is measured at  $10l_n$  DC

4. Typical voltage drop measured at +20 °C ambient temperature and rated current

### Dimensions and packaging – mm [in]

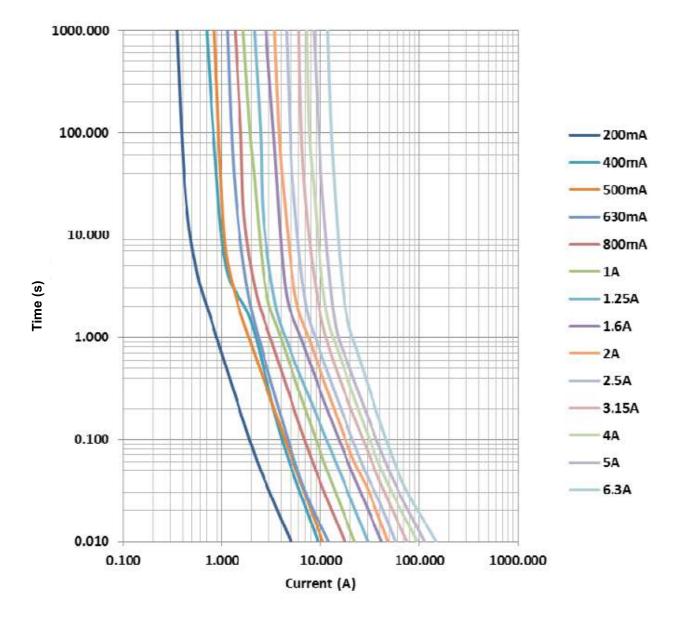






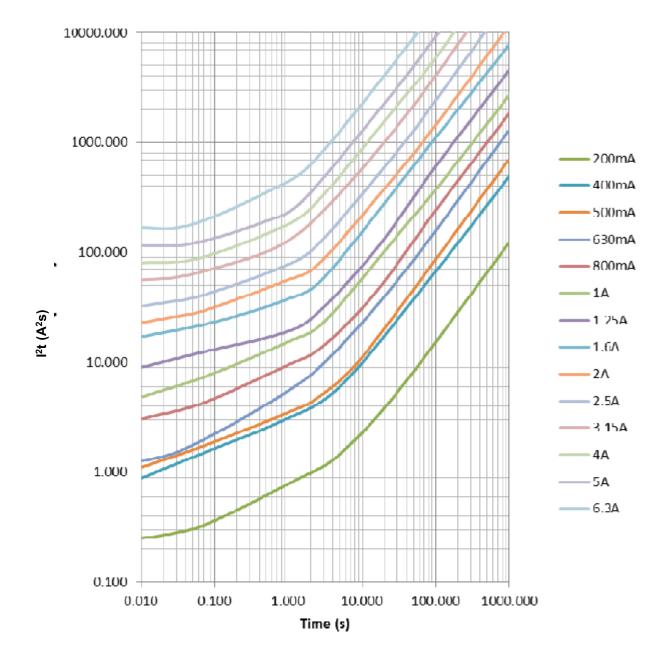
BK PACK

### Time vs. current curve



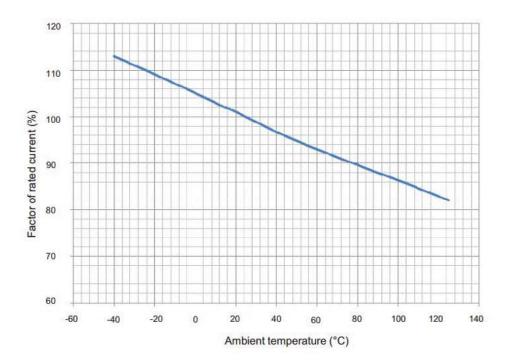
Technical Data **2621** Effective December 2019

# l<sup>2</sup>t vs. time curve



#### Temperature derating curve

Normal Operating Temperature: +25 °C ±2 °C



## **General specifications**

Operating temperature: -40 °C to +125 °C with proper correction factor applied

Storage temperature: -10 °C to 40 °C

Solderability: EIA-186-9E Method 9

High frequency vibration test: Withstands 10-55 Hz per MIL-STD-202F, Method 201A

Endurance test: IEC60127-3/4

# **Ordering codes**

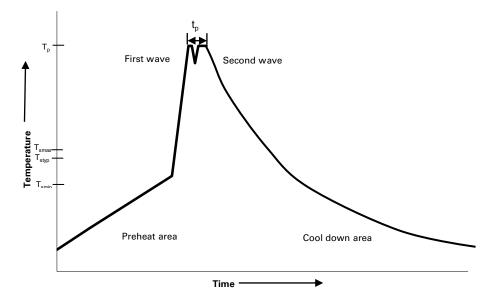
The ordering code is the part number replacing the "" with a "-" plus adding the packaging suffix.

#### **Packaging suffixes**

- -AP (1 000 parts Ammo pack, Pitch = 12.7)
- -BK (200 parts in a polybag, Lead L =  $4.3 \pm 0.3$ )
- -BK2 (200 parts in a polybag, Lead L =  $21 \pm 3.0$ )

	Ordering codes			
Part number	-AP option	-BK option	-BK2 option	
SS-5-200mA	SS-5-200mA-AP	SS-5-200mA-BK	SS-5-200mA-BK2	
SS-5-400mA	SS-5-400mA-AP	SS-5-400mA-BK	SS-5-400mA-BK2	
SS-5-500mA	SS-5-500mA-AP	SS-5-500mA-BK	SS-5-500mA-BK2	
SS-5-630mA	SS-5-630mA-AP	SS-5-630mA-BK	SS-5-630mA-BK2	
SS-5-800mA	SS-5-800mA-AP	SS-5-800mA-BK	SS-5-800mA-BK2	
SS-5-1A	SS-5-1A-AP	SS-5-1A-BK	SS-5-1A-BK2	
SS-5-1.25A	SS-5-1-25A-AP	SS-5-1-25A-BK	SS-5-1-25A-BK2	
SS-5-1.6A	SS-5-1-6A-AP	SS-5-1-6A-BK	SS-5-1-6A-BK2	
SS-5-2A	SS-5-2A-AP	SS-5-2A-BK	SS-5-2A-BK2	
SS-5-2.5A	SS-5-2-5A-AP	SS-5-2-5A-BK	SS-5-2-5A-BK2	
SS-5-3.15A	SS-5-3-15A-AP	SS-5-3-15A-BK	SS-5-3-15A-BK2	
SS-5-4A	SS-5-4A-AP	SS-5-4A-BK	SS-5-4A-BK2	
SS-5-5A	SS-5-5A-AP	SS-5-5A-BK	SS-5-5A-BK2	
SS-5-6.3A	SS-5-6-3A-AP	SS-5-6-3A-BK	SS-5-6-3A-BK2	

#### Wave solder profile



#### Reference EN 61760-1:2006

Profile feature		Standard SnPb solder	Lead (Pb) free solder	
Preheat	• Temperature min. (T <sub>smin</sub> )	100 °C	100 °C	
	• Temperature typ. (T <sub>Styp</sub> )	120 °C	120 °C	
	• Temperature max. (T <sub>smax</sub> )	130 °C	130 °C	
	• Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	70 seconds	70 seconds	
$\overline{\Delta}$ preheat to max Temperature		150 °C max.	150 °C max.	
Peak temperature (Tp)*		235 °C – 260 °C	250 °C – 260 °C	
Time at peak temperature (t <sub>p</sub> )		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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