

# **S505**

# 5 mm x 20 mm, Ferrule time-delay, ceramic tube fuses



#### **Product features**

- · Time-delay high breaking capacity
- · Designed to IEC 60127-2
- 0.5 A to 12 A current ratings
- Ceramic tube, nickel plated brass end cap construction
- · Halogen free, RoHS compliant, lead free
- Reference <u>S505SC data sheet (10132)</u> for available axial lead options

# **Applications**

Primary circuit protection:

- · LED and general lighting
- · LED/LCD televisions
- · Appliances and white goods
- · Printers and peripherals
- · Test equipment
- · Power supplies

#### **Agency information**

- cURus Recognition file number: E19180, Guide JDYX2/JDYX8
- CSA file: 53787
- SEMKO file: 816547, 1119019
- VDE file: 40014091, 40024352, 40023140
- BSI file: KM55676
- IMQ file: CA03 00100, CA03 00529
- PSE: JET 1641-31003-1009, 1641-31003-1010, 1641-31003-1011, 1641-31003-1012, 1641-31003-2001, 1641-31003-2002
- CCC file: 2002010207011295
- KC-Mark file: SU5011-4012A, SU5011-5004A

# **Ordering**

• Use ordering code (see page 4 for details)

# **Packaging prefixes**

- BK- (100 parts in a cardboard carton)
- BK1- (1,000 parts in a bag)



# **Electrical characteristics**

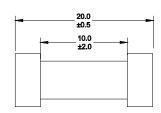
<u>I,</u>	1.5l <sub>n</sub> min minute	2.1I <sub>n</sub> max minute	2.75I <sub>n</sub> min ms	max s	4I <sub>n</sub> min ms	max s	10l <sub>n</sub> min ms	max ms
< 1 A	60	30	250	80	50	5	5	150
1 A - 3.15 A	60	30	750	80	95	5	10	150
4 A - 6.3 A	60	30	750	80	150	5	10	150
8 A - 12 A	30	30	750	80	150	5	10	150

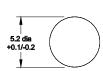
# **Product specifications**

Current rating (A)	Voltage rating AC	Interrupting rating at rated AC voltage <sup>1</sup> (50 Hz) (A <sub>AC</sub> )	Typical DC cold resistance² (Ω)	Typical pre-arcing <sup>3</sup> I <sup>2</sup> t (A <sup>2</sup> s)	Typical voltage drop⁴ (mV)	IMQ	VDE	SEMKO	cURus	ccc	PSE- JET	CSA	KC	BSI
0.5	250	1500	0.5070	0.188*	295	Χ	Χ	Χ	Χ	Χ		Χ		Χ
0.8	250	1500	0.2370	0.632*	189	Χ	Χ	Χ	Χ	Χ		Χ		X
1.0	250	1500	0.1570	1.28	176	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
1.25	250	1500	0.1075	2.22	150	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
1.6	250	1500	0.0700	6.78	125	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
2.0	250	1500	0.0545	9.6	118.5	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
2.5	250	1500	0.0395	16.6	115	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
3.15	250	1500	0.0305	36.6	102.5	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
4.0	250	1500	0.0185	38.45*	86.5	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
5.0	250	1500	0.0131	71.30*	77.5	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
6.3	250	1500	0.0102	111*	75	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
8.0	250	1500	0.0077	228*	73	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
10	250	1500	0.0061	397	72	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
12	250	1000	0.0053	713.7*	77		Χ		Χ					
	1.0 1.25 1.6 2.0 2.5 3.15 4.0 5.0 6.3 8.0	rating (A) Voltage rating AC   0.5 250   0.8 250   1.0 250   1.25 250   1.6 250   2.0 250   2.5 250   3.15 250   4.0 250   5.0 250   6.3 250   8.0 250   10 250	Current rating (A) Voltage rating AC voltage* (50 Hz) rating at rated AC voltage* (50 Hz)   0.5 250 1500   0.8 250 1500   1.0 250 1500   1.25 250 1500   1.6 250 1500   2.0 250 1500   2.5 250 1500   3.15 250 1500   4.0 250 1500   5.0 250 1500   6.3 250 1500   8.0 250 1500   10 250 1500	Current rating (A) Voltage rating AC rating at rated AC voltage¹ (50 Hz) voltage² (50 Hz) Typical pc cold resistance² (Ω)   0.5 250 1500 0.5070   0.8 250 1500 0.2370   1.0 250 1500 0.1570   1.25 250 1500 0.1075   1.6 250 1500 0.0700   2.0 250 1500 0.0545   2.5 250 1500 0.0395   3.15 250 1500 0.0305   4.0 250 1500 0.0185   5.0 250 1500 0.0131   6.3 250 1500 0.0102   8.0 250 1500 0.0077   10 250 1500 0.0061	Current rating (A) Voltage rating AC (A <sub>Ac</sub> ) rating at rated AC voltage¹ (50 Hz) (A <sub>Ac</sub> ) Typical DC cold resistance² (Ω) Typical pre-arcing ³ (4 A²s)   0.5 250 1500 0.5070 0.188*   0.8 250 1500 0.2370 0.632*   1.0 250 1500 0.1570 1.28   1.25 250 1500 0.1075 2.22   1.6 250 1500 0.0700 6.78   2.0 250 1500 0.0545 9.6   2.5 250 1500 0.0395 16.6   3.15 250 1500 0.0395 36.6   4.0 250 1500 0.0185 38.45*   5.0 250 1500 0.0131 71.30*   6.3 250 1500 0.0102 111*   8.0 250 1500 0.0077 228*   10 250 1500 0.0061 397	Current rating (A) Voltage rating AC (A <sub>Ac</sub> ) rating at rated AC voltage¹ (50 Hz) (A <sub>Ac</sub> ) Typical pre-arcting at rated AC voltage¹ (50 Hz) (A <sub>Ac</sub> ) Typical pre-arcting at rated AC voltage¹ (50 Hz) (A <sub>Ac</sub> ) Typical pre-arcting at voltage drop¹ (mV)   0.5 250 1500 0.5070 0.188* 295   0.8 250 1500 0.2370 0.632* 189   1.0 250 1500 0.1570 1.28 176   1.25 250 1500 0.1075 2.22 150   1.6 250 1500 0.0700 6.78 125   2.0 250 1500 0.0395 16.6 118.5   2.5 250 1500 0.0395 36.6 102.5   4.0 250 1500 0.0185 38.45* 86.5   5.0 250 1500 0.0131 71.30* 77.5   6.3 250 1500 0.0077 228* 73   10 250 1500 0.0061 397 72	Current rating (A) Voltage (A) rating AC voltage* (50 Hz) voltage* (50 Hz) Typical pre-arcing a resistance* (n) Typical pre-arcing a resistance* (n) Typical pre-arcing a resistance* (n) Typical pre-arcing a voltage drop* (mV) IMO   0.5 250 1500 0.5070 0.188* 295 X   0.8 250 1500 0.2370 0.632* 189 X   1.0 250 1500 0.1570 1.28 176 X   1.25 250 1500 0.1075 2.22 150 X   1.6 250 1500 0.0700 6.78 125 X   2.0 250 1500 0.0545 9.6 118.5 X   2.5 250 1500 0.0395 16.6 115 X   3.15 250 1500 0.0305 36.6 102.5 X   4.0 250 1500 0.0185 38.45* 86.5 X   5.0 250 1500 0.0102 111*	$ \begin{array}{ c c c c c c c c c } \hline \textbf{rating AC} & \textbf{Voltage} & \textbf{rating AC} & \textbf{rating AC} & \textbf{Voltage}^1 & \textbf{(50 Hz)} & \textbf{Vpical pre-arcing}^2 & \textbf{Voltage}^1 & \textbf{(MO)} & \textbf{VDE} \\ \hline \textbf{0.5} & 250 & 1500 & 0.5070 & 0.188* & 295 & X & X \\ \hline \textbf{0.8} & 250 & 1500 & 0.2370 & 0.632* & 189 & X & X \\ \hline \textbf{1.0} & 250 & 1500 & 0.1570 & 1.28 & 176 & X & X \\ \hline \textbf{1.25} & 250 & 1500 & 0.1075 & 2.22 & 150 & X & X \\ \hline \textbf{1.6} & 250 & 1500 & 0.0700 & 6.78 & 125 & X & X \\ \hline \textbf{2.0} & 250 & 1500 & 0.0545 & 9.6 & 118.5 & X & X \\ \hline \textbf{2.5} & 250 & 1500 & 0.0395 & 16.6 & 115 & X & X \\ \hline \textbf{3.15} & 250 & 1500 & 0.0395 & 36.6 & 102.5 & X & X \\ \hline \textbf{4.0} & 250 & 1500 & 0.0185 & 38.45* & 86.5 & X & X \\ \hline \textbf{5.0} & 250 & 1500 & 0.0102 & 111* & 75 & X & X \\ \hline \textbf{8.0} & 250 & 1500 & 0.0061 & 397 & 72 & X & X \\ \hline \textbf{10} & 250 & 1500 & 0.0061 & 397 & 72 & X & X \\ \hline \textbf{10} & 250 & 1500 & 0.0061 & 397 & 72 & X & X \\ \hline \end{array}$	Current rating (A) Voltage rating AC (A <sub>Ac</sub> ) rating def (50 Hz) (Pasistance² (n)) Typical pre-arcing² (voltage drop² (n)) Typical pre-arcing² (voltage drop² (n)) Typical pre-arcing² (voltage drop² (n)) IMO VDE SEMKO   0.5 250 1500 0.5070 0.188* 295 X X X   0.8 250 1500 0.2370 0.632** 189 X X X   1.0 250 1500 0.1570 1.28 176 X X X   1.25 250 1500 0.1075 2.22 150 X X X   1.6 250 1500 0.0700 6.78 125 X X X   2.0 250 1500 0.0395 16.6 115 X X X   2.5 250 1500 0.0305 36.6 102.5 X X X   3.15 250 1500 0.0185 38.45* 86.5 X X X <td>Current rating (A) Voltage rating AC (A<sub>Ac</sub>) rating at rated AC voltage¹ (50 Hz) (A<sub>Ac</sub>) Typical pre-arcing ² (n) resistance² (n) r</td> <td>Current rating (A) Voltage (50 Hz) (A<sub>Ac</sub>) Typical Dc cold resistance² (a) Typical pre-arcing a voltage drop* (a) Typical voltage drop* (b) IMO VDE SEMKO cURus CCC   0.5 250 1500 0.5070 0.188* 295 X <t< td=""><td>Current rating (A) Voltage rating AC (A<sub>Ac</sub>) Typical DC college (so Hz) Pt-4 arcsing Pt-4 (As) Typical pre-arcsing voltage row pt-4 (As) Typical pt-4 (As)</td><td>Cutrent rating (A) Voltage (A) (A<sub>AC</sub>) rating Ac (A<sub>AC</sub>) Typical pre-sistance² (a) Typical pre-sistance² (b) (a)</td><td>Current rating (A) Voltage (150 Hz) Typical pre-sistance² (a) Typical pre-sistance² (b) Typical pre-sistan</td></t<></td>	Current rating (A) Voltage rating AC (A <sub>Ac</sub> ) rating at rated AC voltage¹ (50 Hz) (A <sub>Ac</sub> ) Typical pre-arcing ² (n) resistance² (n) r	Current rating (A) Voltage (50 Hz) (A <sub>Ac</sub> ) Typical Dc cold resistance² (a) Typical pre-arcing a voltage drop* (a) Typical voltage drop* (b) IMO VDE SEMKO cURus CCC   0.5 250 1500 0.5070 0.188* 295 X <t< td=""><td>Current rating (A) Voltage rating AC (A<sub>Ac</sub>) Typical DC college (so Hz) Pt-4 arcsing Pt-4 (As) Typical pre-arcsing voltage row pt-4 (As) Typical pt-4 (As)</td><td>Cutrent rating (A) Voltage (A) (A<sub>AC</sub>) rating Ac (A<sub>AC</sub>) Typical pre-sistance² (a) Typical pre-sistance² (b) (a)</td><td>Current rating (A) Voltage (150 Hz) Typical pre-sistance² (a) Typical pre-sistance² (b) Typical pre-sistan</td></t<>	Current rating (A) Voltage rating AC (A <sub>Ac</sub> ) Typical DC college (so Hz) Pt-4 arcsing Pt-4 (As) Typical pre-arcsing voltage row pt-4 (As) Typical pt-4 (As)	Cutrent rating (A) Voltage (A) (A <sub>AC</sub> ) rating Ac (A <sub>AC</sub> ) Typical pre-sistance² (a) Typical pre-sistance² (b) (a)	Current rating (A) Voltage (150 Hz) Typical pre-sistance² (a) Typical pre-sistance² (b) Typical pre-sistan

<sup>1</sup> Interrupting ratings 500 mA to 10 A measured at 70% to 80% PF on AC. 12 A measured at 100% PF on AC.

# Dimensions (mm)





<sup>2</sup> Typical DC cold resistance measured at <10% of rated current at an ambient temperature of  $\pm 20 \circ C$  (reference only)

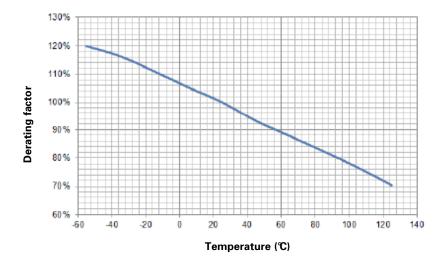
<sup>3</sup> Typical pre-arcing (I2t) measured at listed interrupting rating and voltage.

<sup>\*=</sup> measured at 10 times rated current under DC.

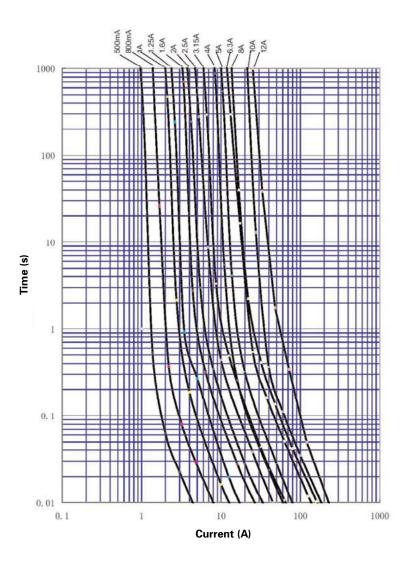
<sup>4</sup> Typical voltage drop measured at +20  $^{\circ}$  C at rated current.

<sup>5</sup> Part number definition: S505-xxx-R S505= Product code and size xxx= Ampere rating -R= Rohs compliant

# Temperature derating curve



# Time vs. current curve



# **Environmental data**

Operating temperature: - 55 °C to +125 °C (with derating)

# **Ordering codes**

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

# **Packaging prefixes**

- BK- (100 parts in a cardboard carton)
- BK1- (1,000 parts in a bag)

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	Ordering codes							
Part number	-BK option	-BK1 option						
S505-500-R	BK-S505-500-R	BK1-S505-500-R						
S505-800-R	BK-S505-800-R	BK1-S505-800-R						
S505-1-R	BK-S505-1-R	BK1-S505-1-R						
S505-1.25-R	BK-S505-1-25-R	BK1-S505-1-25-R						
S505-1.6-R	BK-S505-1-6-R	BK1-S505-1-6-R						
S505-2-R	BK-S505-2-R	BK1-S505-2-R						
S505-2.5-R	BK-S505-2-5-R	BK1-S505-2-5-R						
S505-3.15-R	BK-S505-3-15-R	BK1-S505-3-15-R						
S505-4-R	BK-S505-4-R	BK1-S505-4-R						
S505-5-R	BK-S505-5-R	BK1-S505-5-R						
S505-6.3-R	BK-S505-6-3-R	BK1-S505-6-3-R						
S505-8-R	BK-S505-8-R	BK1-S505-8-R						
S505-10-R	BK-S505-10-R	BK1-S505-10-R						
S505-12-R	BK-S505-12-R	BK1-S505-12-R						

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

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