Rated 80V





## **Specifications**

Voltage Rating:	80 V DC
Interrupting Rating:	2000 A @ 80 V DC
Recommended Environmental	−40 °C to +125 °C
Temperature:	
Terminals Material:	Tin-plated copper alloy
Housing Material:	PPA-GF33HS (UL 94 Flammability rating of HB)
Net Weight per Fuse:	22 g ± 10 %
Mounting Torque M10	18 Nm ± 2 Nm
Insulating Tube:	Ceramic

## **Features & Benefits**

- One-bolt connection
- Can mount on a battery post, starter, or busbar
- High-contrast ampere rating stamp aids identification
- SHUNT version available
- Compact design

#### **Description**

The Single ZCASE is a Minimal Footprint Bolt Down Fuse optimized for a one bolt connection M10 with a wide rating range from 70A to 600A in the same packaging size. The Time Current characteristic is similar to the well known MEGA Design and can be used as full wire protection until 250A. Higher ratings fuses are mostly used in trucks, buses, agriculture and construction equipment's or Material handling for typically Starter protector fuse.

## **Applications**

- Commercial vehicles
- Buses
- Construction equipment
- Material handling equipment
- Agricultural machinery
- Not suitable for passenger car applications

### **Ordering Information**

Part Number	Current Rating (A)	Package Size
3998XXX.ZXM10	70-600 & SHUNT	480

Rated 80V

#### **Ratings**

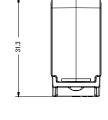
Part number	Current Rating (A)	Test Cable Size (mm²)	Typ. Voltage Drop (mV)	Typ. Cold Resistance (mΩ)	Typ. I²t (A²s)
3998070	70	10	84	0.88	28,300
3998080	80	10	95	0.78	32,000
3998100	100	16	80	0.57	23,200
3998125	125	16	90	0.46	52,000
3998150	150	25	78	0.34	81,600
3998160	160	25	82	0.34	82,800
3998175	175	25	97	0.29	150,000
3998200	200	35	94	0.26	165,300
3998225	225	35	80	0.18	126,900
3998250	250	50	82	0.17	160,900
3998300 ²	300	50	52 <sup>3</sup>	0.14	259,200
3998350 ²	350	50	29 <sup>3</sup>	0.10	583,900
3998400 2	400	70	27 <sup>3</sup>	0.08	913,300
3998425 1 2	425	70	30 <sup>3</sup>	0.08	690,200
3998500 2	500	70	59 <sup>3</sup>	0.08	1,384,300
3998600 1 2	600	70	33 <sup>3</sup>	0.05	2,771,800
3998900 ¹	SHUNT	70		0.06	

The I<sup>2</sup>t value is calculated from the breaking capacity tests by using the current time profile before the arcing occurs.

#### **Dimensions**

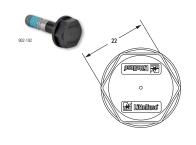
Dimensions in mm for reference only. See outline drawing for dimensions and tolerances.

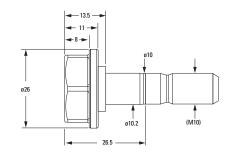
# — 12.5 —<del>-|-</del>— 12.5 —



#### **Assembly Components Sold Separately**

Part No.	Description
902-192	Insulated M10 Bolt Required for Installation and Operation





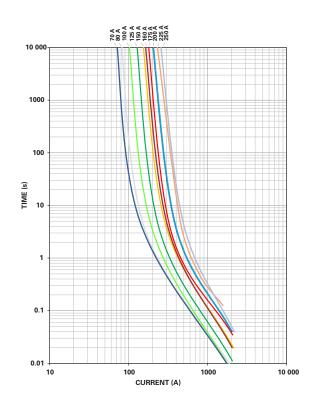
Please contact your Littelfuse representative for application support and information on mating hardware.

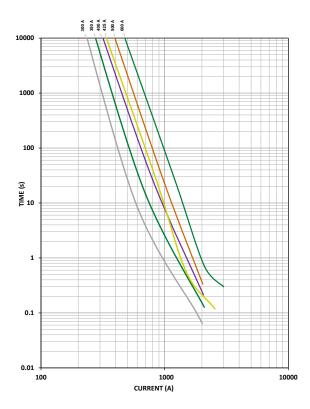


<sup>\*</sup> Note 1: Not mentioned in ISO standards
\* Note 2: Short Circuit Protector only
\* Note 3: Voltage Drop measurements for short circuit protectors taken at 75% of rated current.

Rated 80V

#### **Time-Current Characteristic**





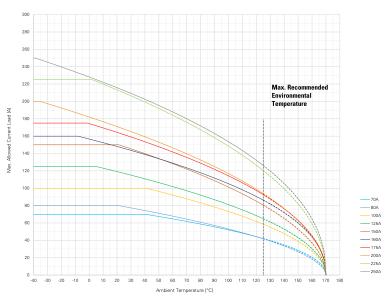
% of Rating	Openin	g Time Min / N	Time Min / Max (s)			
riuting	40-250 A	300-500 A	600 A			
75	-/-	14 400 /∞	14 400 /∞			
100	14 400 /∞	-/-	-/-			
135	120 / 1800	-/-	-/-			
200	1 / 15	1 / 40	1 / 40			
350	0.3 / 5	0.3 / 5	0.3 / 5			
500	-/-	-/-	0.1 / 1			
600	0.1 / 1	0.1 / 1	-/-			

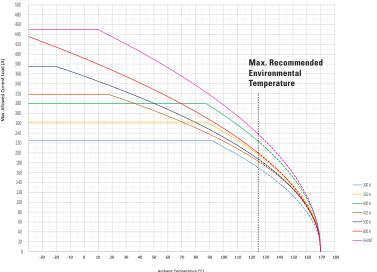


Rated 80V

#### **Derating of Fuse Melting Element**

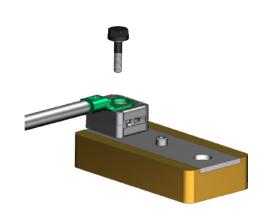
Temperature security margin is 20 %. Please contact Littelfuse for details regarding derating test setup.





Derating curves may change depending on the final condition of the application (terminals' characteristics, wire size, etc.). Please ask Littelfuse for more information.

-40 °C         0 °C         20 °C         65 °C         85 °C         110 °C         125 °C           70 A         70         70         70         63         57         48         41           80 A         80         80         66         59         49         42           100 A         100         100         100         90         81         68         59           125 A         125         125         119         100         89         75         65           150 A         150         150         125         112         94         81           160 A         160         157         148         126         115         98         86           175 A         175         159         150         128         116         99         87           200 A         200         182         171         143         129         108         94		Max. allowed current load (A) according to typical derating						
80 A     80     80     80     66     59     49     42       100 A     100     100     100     90     81     68     59       125 A     125     125     119     100     89     75     65       150 A     150     150     125     112     94     81       160 A     160     157     148     126     115     98     86       175 A     175     159     150     128     116     99     87       200 A     200     182     171     143     129     108     94		-40 °C	0 °C	20 °C	65 °C	85 °C	110 °C	125 °C
100 A     100     100     100     90     81     68     59       125 A     125     125     119     100     89     75     65       150 A     150     150     125     112     94     81       160 A     160     157     148     126     115     98     86       175 A     175     159     150     128     116     99     87       200 A     200     182     171     143     129     108     94	70 A	70	70	70	63	57	48	41
125 A     125     125     119     100     89     75     65       150 A     150     150     150     125     112     94     81       160 A     160     157     148     126     115     98     86       175 A     175     159     150     128     116     99     87       200 A     200     182     171     143     129     108     94	80 A	80	80	80	66	59	49	42
150 A         150         150         150         125         112         94         81           160 A         160         157         148         126         115         98         86           175 A         175         159         150         128         116         99         87           200 A         200         182         171         143         129         108         94	100 A	100	100	100	90	81	68	59
160 A     160     157     148     126     115     98     86       175 A     175     159     150     128     116     99     87       200 A     200     182     171     143     129     108     94	125 A	125	125	119	100	89	75	65
175 A         175         159         150         128         116         99         87           200 A         200         182         171         143         129         108         94	150 A	150	150	150	125	112	94	81
<b>200 A</b> 200 182 171 143 129 108 94	160 A	160	157	148	126	115	98	86
	175 A	175	159	150	128	116	99	87
23E A 23E 23E 214 191 19E 140 122	200 A	200	182	171	143	129	108	94
223 A 223 223 214 181 103 140 123	225 A	225	225	214	181	165	140	123
<b>250 A</b> 250 229 215 181 164 138 120	250 A	250	229	215	181	164	138	120
<b>300 A</b> 225 225 225 225 197 170	300 A	225	225	225	225	225	197	170
<b>350 A</b> 263 263 263 263 226 197	350 A	263	263	263	263	263	226	197
<b>400 A</b> 300 300 300 300 257 224	400 A	300	300	300	300	300	257	224
<b>425 A</b> 319 319 316 269 244 209 183	425 A	319	319	316	269	244	209	183
<b>500 A</b> 375 355 334 282 255 215 188	500 A	375	355	334	282	255	215	188
<b>600 A</b> 436 391 367 307 276 231 200	600 A	436	391	367	307	276	231	200
<b>SHUNT</b> 450 450 435 364 328 275 238	SHUNT	450	450	435	364	328	275	238



All tests were performed mounting the Zcase on the left or right side of the metal bar, as shown in the picture. A 50mm² wire was used as current feed for all the ratings, while the output wire size was according to the table on page 2.

Please contact Littelfuse for details regarding specific applications in vehicle.

