

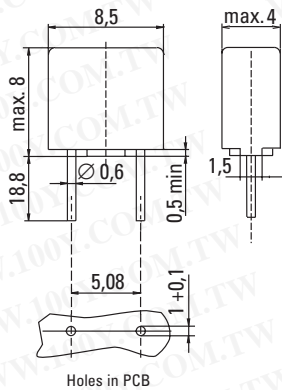
# MP / No. 398

## Modul Protector®, 65V

## Specifications



### Dimensions (mm)



**For Short Circuit Protection of Sensitive Electronic Components and Assemblies**

**Time-Current Characteristic**

Medium Time Lag (M)

**Approvals**

cULus Recognized: File No. E 67006

**Operating Criteria**

Maximum continuous current:

$$I_C \geq I_{operating\ max} \times F_T\ time\ lag$$

Maximum melting integral:

$$I^2_{tMP} < I^2_{tsemiconductor}\ (warm)$$

Minimum fault current:

$$I_{Fault} \geq 3 \times I_C$$

Maximum fault current:

$$I_{Fault} \leq 50A\ at\ 65VAC/DC$$

### Features

- For worldwide applications
- Reduced PCB space requirements
- Highly defined cut-off times
- Irreversible physical separation
- Low internal resistance
- Flame resistant encapsulated casing

### WebLinks

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

**Packaging Code and Info**

000: Tape/Ammopack (1400 pcs.)

**Materials**

Base/Cap: Brown Thermoplastic

Polyamide PA 6.6, UL 94V0

Round Pins: Copper alloy, tin plated

**Operating Temperature**

-40°C to +85°C (consider de-rating)

**Climatic Category**

-40°C/+85°C/21 days (EN 60068-1.3)

**Stock Conditions**

+10°C to +60°C

relative humidity ≤ 75% yearly average, without dew, maximum value for 30 days-95%

**Vibration Resistance**

24 cycles at 15 min. each (EN 60068-6)

10 - 60Hz at 0.75mm amplitude

60 - 2000Hz at 10g acceleration

**Lead Pull Strength**

10N (EN 60068-2-21)

**Solderability**

260°C, ≤ 3 sec. (Wave)

350°C, ≤ 1 sec. (Hand)

**Soldering Heat Resistance**

260°C, 10 sec. (IEC 60068-2-20)

**Marking**

 , Type

**Unit Weight**

0.60g (approx.)



Permissible continuous operating current is ≤ 100% at ambient temperature of 23°C (73.4°F).

Continuous Current $I_C$	Type	Amp Code	Voltage Rating	Fault Current max.	Cold Resistance $0.1 \times I_C$ typ. (mΩ)	Power Dissipation $1.0 \times I_C$ max. (mW)	Melting Integral $10 \times I_C$ typ. (A <sup>2</sup> s)	Approvals cULus
125mA	MP 13	0125	65V		900	50	0.0093	•
250mA	MP 25	0250	65V		355	50	0.045	•
315mA	MP 32	0315	65V		260	60	0.081	•
400mA	MP 40	0400	65V		186	75	0.18	•
500mA	MP 50	0500	65V		155	90	0.2	•
630mA	MP 63	0630	65V		115	120	0.37	•
800mA	MP 80	0800	65V	50A / 65VAC/DC	85	140	0.64	•
1.00A	MP100	1100	65V	50-60Hz	65	170	1.1	•
1.25A	MP125	1125	65V	cos φ = 1.0	48	210	2.3	•
1.60A	MP160	1160	65V		34	320	4.5	•
2.00A	MP200	1200	65V		26	425	7.8	•
2.50A	MP250	1250	65V		21	550	13	•
3.15A	MP315	1315	65V		16	650	23	•
4.00A	MP400	1400	65V		12	1000	40	•

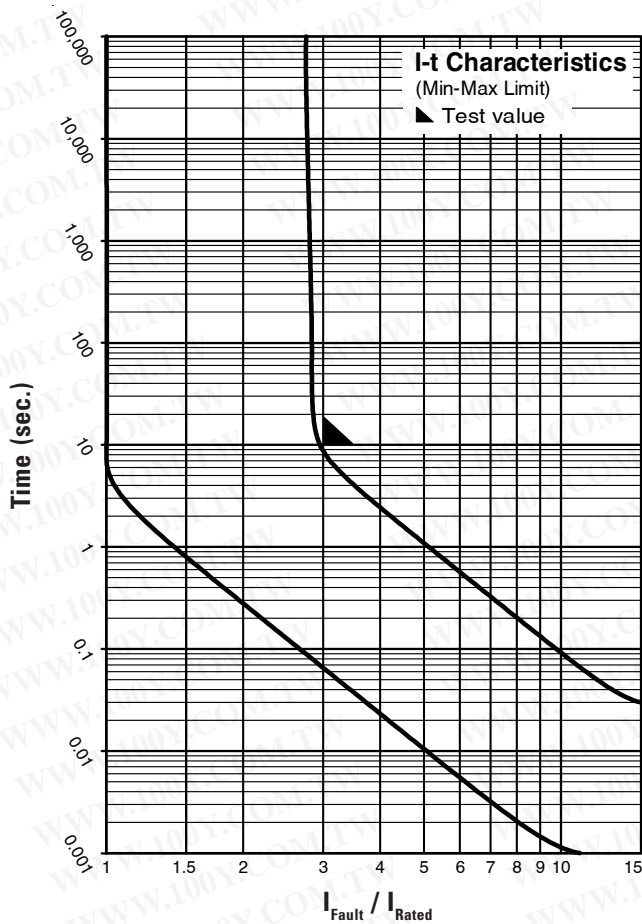
**Order Information**

Qty.	Order-Number	Series	Amp Code	Pack. Code
		398		

Specifications are subject to change without notice.

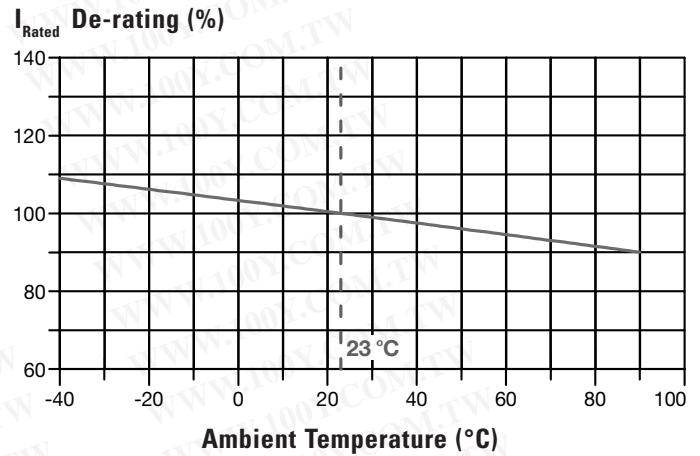
# MP / No. 398

## Time-Current Characteristics



Contact WICKMANN for individual I-t curves

## Thermal De-rating



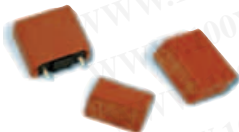
### Thermal De-rating Calculations

- 1) Estimate the maximum continuous ambient temperature measured 1cm from the protector.
- 2) Determine the De-rating factor (%) from the curve above.
- 3) To calculate the minimum fuse current rating ( $I_{rated}$ ) required, divide the measured continuous operating current of the circuit by the De-rating factor (%):

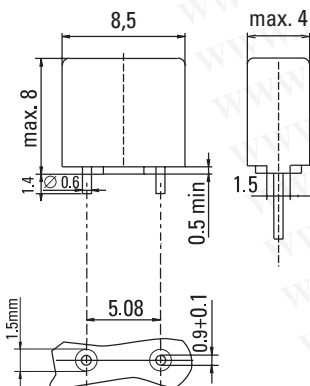
$$I_{\text{min. prot. current rating}} \geq \frac{I_{\text{Operating (Ambient)}}}{\% \text{ De-rating}}$$

- 4) These calculations pertain only to fuse de-rating under varying ambient temperatures. Additional calculations for determining minimum fuse rating may also be required. Please also consider the applicable fuse standard (IEC vs. UL) and the presence of inrush or pulsing currents.

## PIN-IN-PASTE Version



### Dimensions (mm)



Holes in the PCB (Example)

## PIP Surface Mount, 65V

### Time-Current Characteristic

Medium Time Lag (M)

### Approvals

cULus Recognized: File No. E 67006

### Features

- Surface mountable
- For through hole reflow soldering
- Planar Surface for pick and place equipment
- Stand-off to protect fuse from solder paste

### Weblinks

勝特力材料 886-3-5753170  
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## PIP Specifications (cont.)

### Packaging Code and Info

S00: Blister Tape / Ø380mm Reel (2x800 pcs.)

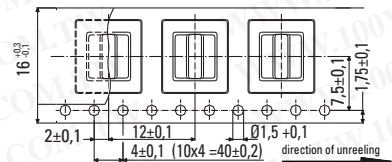
### Solderability

260°C, ≤ 3 sec. (Wave/Reflow)

### Soldering Heat Resistance

260°C, 10 sec. (IEC 60068-2-20)

### Blister Tape



### All other Specifications/Characteristics

Equal to radial leaded No. 398