



## Hall Effect Current Sensor S28S500D24ZM

### Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio  $K = 1:5000$
- Panel mounting with Molex mini-fit Jr
- Large aperture
- Insulated plastic case according to UL94V0

### Advantages:

- Excellent accuracy and linearity
- Very low temperature drift
- No insertion loss
- High Immunity to external interferences
- Optimised response time
- Wide supply voltage range

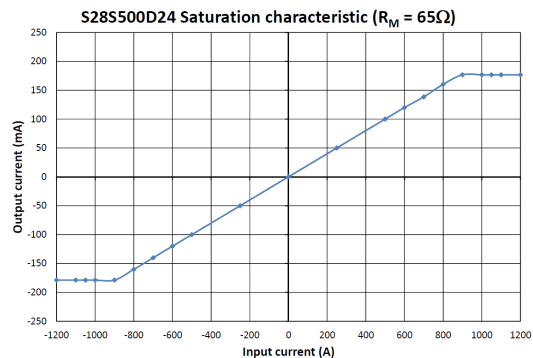
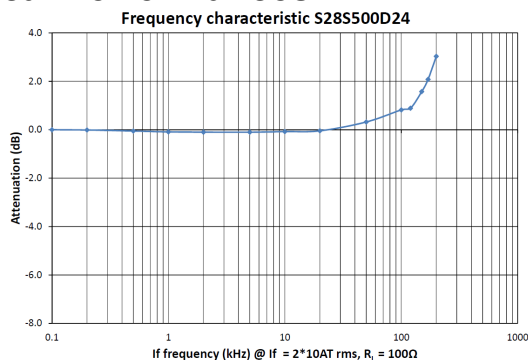
## Specifications

$T_A=25^\circ\text{C}$ ,  $V_{CC}=\pm 15\text{V}$

| Parameters  | Symbol       | S28S500D24ZM  |   |
|---|--------------|---|---|
| Rated Current   | $I_f$        | 500A  |   |
| Maximum Current <sup>1</sup>                                    | $I_{fmax}$   | $\pm 800\text{AT}$ (see below)  |   |
| $I_f = \pm A_{DC}$<br>Measuring resistance @ $85^\circ\text{C}$ | $R_M$        | $\pm 15\text{V}$  | 500AT : $0\Omega \sim 60\Omega$<br>800AT : $0\Omega \sim 11\Omega$  |
|   |              | $\pm 18\text{V}$  | 500AT : $0\Omega \sim 92\Omega$<br>800AT : $0\Omega \sim 30\Omega$  |
|   |              | $\pm 24\text{V}$  | 500AT : $5\Omega \sim 149\Omega$<br>800AT : $5\Omega \sim 65\Omega$ |
| Conversion Ratio  | $K$          | 1 : 5000  |   |
| Output Current  | $I_{OUT}$    | $\pm 100\text{mA}$  |   |
| Offset Current  | $I_{OE}$     | $\leq \pm 0.4\text{mA}$ @ $I_f = 0\text{A}$   |   |
| Output Current Accuracy   | $X$          | $I_{OUT} \pm 0.5\%$ (w/o $I_{OE}$ )   |   |
| Output Linearity  | $\epsilon_L$ | $\leq \pm 0.1\%$ @ $I_f$  |   |
| Supply Voltage <sup>2</sup>                                     | $V_{CC}$     | $\pm 15\text{V} \sim \pm 24\text{V}$ ( $\pm 5\%$ )  |   |
| Consumption Current   | $I_{CC}$     | $\pm 30\text{mA}$ (Output Current is not included)  |   |
| Response Time <sup>3</sup>                                      | $t_r$        | $< 1.0\mu\text{s}$ @ $di/dt = 100\text{A} / \mu\text{s}$                                      |   |
| Output Temperature Characteristic                               | $TCI_{OUT}$  | $< \pm 0.01\%$ / $^\circ\text{C}$ @ $I_f$ (w/o $TCI_{OE}$ )                                   |   |
| Offset Temperature Characteristic <sup>4</sup>                  | $TCI_{OE}$   | $< \pm 0.4\text{mA}$ @ $I_f = 0\text{A}$ (max)  |   |
| Hysteresis allowance  | $I_{OH}$     | $\leq 0.2\text{mA}$ (max)   |   |
| Insulation Withstanding   | $V_d$        | AC 4000V, for 1minute (sensing current 0.5mA), inside of aperture $\leftrightarrow$ terminals |   |
| Insulation Resistance   | $R_{IS}$     | $> 500\text{M}\Omega$ (@ DC 500V) inside of aperture $\leftrightarrow$ terminals              |   |
| Frequency Bandwidth   | $f$          | DC .. 100 kHz   |   |
| Secondary Coil Resistance                                       | $R_S$        | $70\Omega$ @ $T_A = 70^\circ\text{C}$   |   |
| Operating Temperature   | $T_A$        | $-40^\circ\text{C} \sim +70^\circ\text{C}$  |   |
| Storage Temperature   | $T_S$        | $-40^\circ\text{C} \sim +85^\circ\text{C}$  |   |

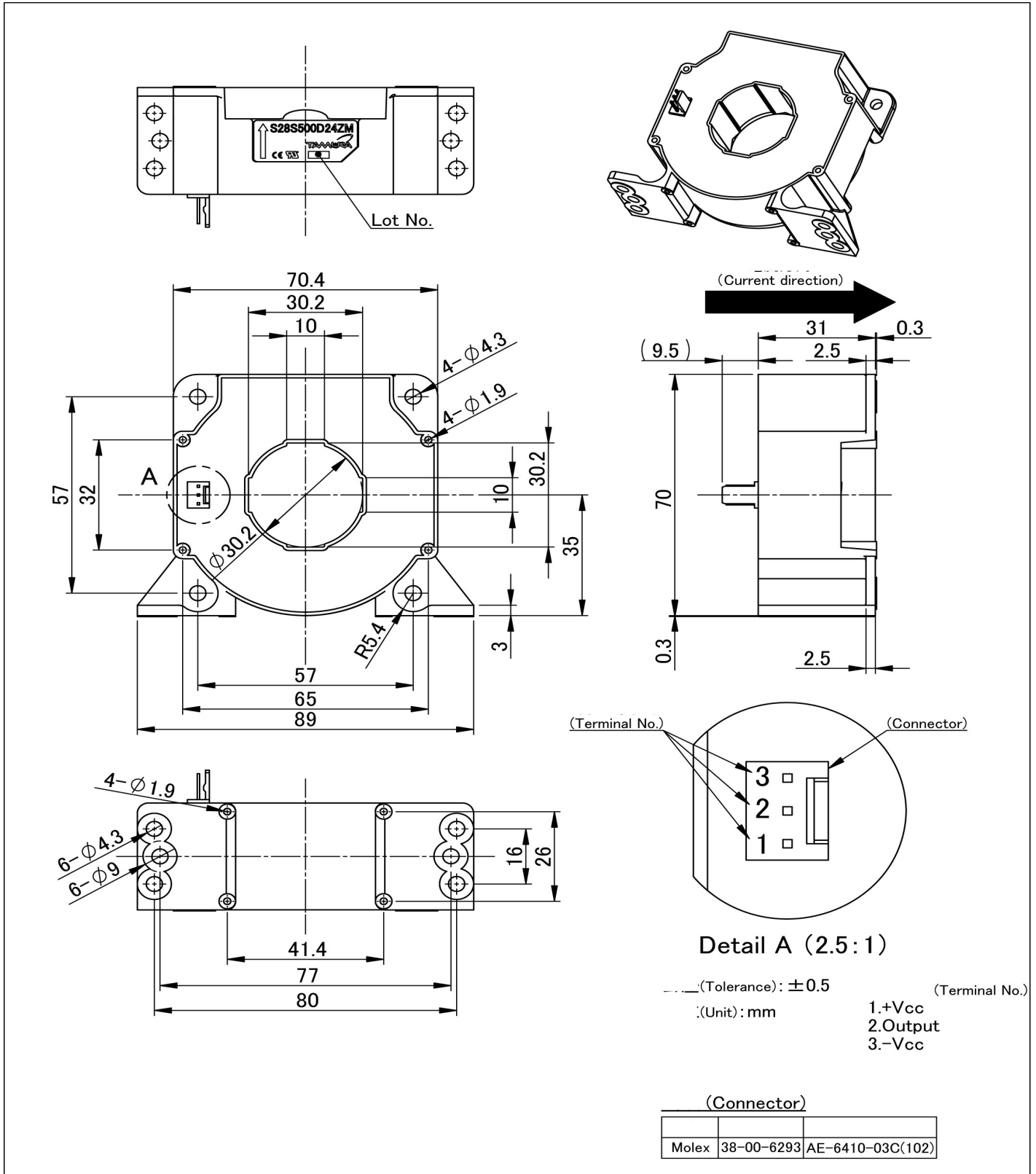
<sup>1</sup> @  $V_{CC}=\pm 15\text{V}$  for 10 Seconds — <sup>2</sup> Rated Current is restricted by  $V_{CC}$  — <sup>3</sup> Time between 10% input current full scale and 90% of sensor output full scale —  $< \pm 0.4\text{mA}$  max. @  $I_f = 0\text{A}$  ( $-10^\circ\text{C} \sim +70^\circ\text{C}$ )

## Electrical Performances



# Hall Effect Current Sensor S28S500D24ZM

## Mechanical dimensions in mm



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