

## 3 to 25 Amp Applications — Open Loop

- Compact PCB Mount Design
- Dual Integrated Primary
- Withstanding Voltage of 2000 Vrms
- 3A - 25A with a Bipolar  $\pm 15\text{VDC}$  Supply Voltage
- Low Cost



Specifications Measured at 25°C, RL-10KΩ Vcc= $\pm 15\text{V}$

| Specification                             | L07P003D15   | L07P005D15       | L07P010D15       | L07P015D15       | L07P020D15       | L07P025D15       |
|---|--|------------------|------------------|------------------|------------------|------------------|
| Nominal Primary DC Current (If)           | $\pm 3\text{A}$  | $\pm 5\text{A}$  | $\pm 10\text{A}$ | $\pm 15\text{A}$ | $\pm 20\text{A}$ | $\pm 25\text{A}$ |
| Maximum Current If(max)                   | $\pm 9\text{A}$  | $\pm 15\text{A}$ | $\pm 30\text{A}$ | $\pm 45\text{A}$ | $\pm 60\text{A}$ | $\pm 75\text{A}$ |
| Output Voltage @ If                       | $V_{\text{OUT}} = +4\text{V} \pm 0.05\text{V}, -4\text{V} \pm 0.150\text{V}$ (at If) |                  |                  |                  |                  |                  |
| Offset Voltage                            | $V_{\text{OE}} = 0 \pm 0.50\text{V}$   |                  |                  |                  |                  |                  |
| Accuracy @ If <sup>1</sup>                | $X = \pm 1\%$ of If  |                  |                  |                  |                  |                  |
| Output Linearity <sup>1</sup> (O..If Max) | $E_L = \leq \pm 1\%$ (at 0A ~ If)  |                  |                  |                  |                  |                  |
| Power Supply                              | $V_{\text{CC}} = \pm 15\text{V} \pm 5\%$   |                  |                  |                  |                  |                  |
| Response Time                             | $T_r = \leq 10\mu\text{sec}$ (di/dt = 10A / 5μsec)                                   |                  |                  |                  |                  |                  |
| Current Consumption                       | $I_c = \leq 30\text{mA}$   |                  |                  |                  |                  |                  |
| Output Temperature Characteristic         | $TCE_G = < \pm 0.1\% / ^\circ\text{C}$   |                  |                  |                  |                  |                  |
| Offset Temperature Characteristic         | $V_{\text{OT}} = \leq \pm 2\text{mV} / ^\circ\text{C TYP}$                           |                  |                  |                  |                  |                  |
| Hysteresis Allowance @ If=0               | $V_{\text{OH}} = \leq 30\text{mV}$ (0A = If)   |                  |                  |                  |                  |                  |
| Withstand Voltage (50/60Hz)               | $V_d = 2,000\text{VACrms}$ for 1 minute (Sensing Current 0.5mA)                      |                  |                  |                  |                  |                  |
| Insulation Resistance @ 500VDC            | $R_{\text{IS}} = \geq 500\text{MW}$  |                  |                  |                  |                  |                  |
| Operating Temperature                     | $T_A = -10 \sim +80^\circ\text{C}$   |                  |                  |                  |                  |                  |
| Storage Temperature                       | $T_S = -20 \sim +85^\circ\text{C}$   |                  |                  |                  |                  |                  |

1. Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| CALL    | CALL           |

| TERMINAL | FUNCTION |
|----------|----------|
| 1        | +15V     |
| 2        | -15V     |
| 3        | OUT1     |
| 4        | OUT2     |
| 5        | GND      |
| 6        | +IN1     |
| 7        | -IN1     |
| 8        | +IN2     |
| 9        | -IN2     |

| CURRENT   | ∅ PIN        |
|-----------|--------------|
| 3A        | ∅ 0.6[0.024] |
| 5A        | ∅ 0.8[0.031] |
| 10A ~ 15A | ∅ 1.4[0.055] |
| 20A ~ 25A | ∅ 1.6[0.063] |



Unless otherwise specified, tolerances shall be  $\pm 0.5\text{mm}$ .

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## 5 to 40 Amp Applications — Open Loop

- Compact PCB Mount Design
- Dual Integrated Primary
- Withstanding Voltage of 2000 Vrms
- 5A - 40A Unipolar +5VDC Supply Voltage
- Low Cost



Specifications Measured at 25°C, RL=10KΩ Vcc=+5V

| Specification                                      | L07P005S05                                       | L07P007S05 | L07P010S05 | L07P015S05 | L07P020S05 | L07P025S05 | L07P030S05 | L07P040S05 |
|--|--|------------|------------|------------|------------|------------|------------|------------|
| Nominal Primary DC Current (If)                    | +5A  | +7A        | +10A       | +15A       | +20A       | +25A       | +30A       | +40V       |
| Maximum Current If(max)                            | +6.25A   | +9.375A    | +12.5A     | +18.75A    | +25A       | +31.25A    | +37.5A     | +50A       |
| Output Voltage @ If                                | 2.5V ±1.5V                                       |            |            |            |            |            |            |            |
| Offset Voltage V <sub>OE</sub>                     | V <sub>OUT</sub> ± 45mV                          |            |            |            |            |            |            |            |
| Accuracy @ If <sup>1</sup>                         | ± 1%   |            |            |            |            |            |            |            |
| Output Linearity <sup>1</sup> (O.If Max)           | ≤ ± 1% (at 0A ~ If)                              |            |            |            |            |            |            |            |
| Power Supply Vcc                                   | + 15V ±5%  |            |            |            |            |            |            |            |
| Response Time T <sub>r</sub>                       | ≤ 5μsec (di/dt = 10A / 5μsec)                    |            |            |            |            |            |            |            |
| Current Consumption I <sub>c</sub>                 | ≤ 30mA   |            |            |            |            |            |            |            |
| Output Temperature Characteristic TCE <sub>G</sub> | < ± 2mV / °C                                     |            |            |            |            |            |            |            |
| Offset Temperature Characteristic V <sub>OT</sub>  | ≤ ± 2mV / °C MAX                                 |            |            |            |            |            |            |            |
| Hysteresis Allowance @ If=0 V <sub>OH</sub>        | ≤ 15mV (0A = If)                                 |            |            |            |            |            |            |            |
| Withstand Voltage (50/60Hz) V <sub>d</sub>         | 2,000VACrms for 1 minute (Sensing Current 0.5mA) |            |            |            |            |            |            |            |
| Insulation Resistance @ 500VDC R <sub>IS</sub>     | ≥ 500MΩ  |            |            |            |            |            |            |            |
| Operating Temperature T <sub>A</sub>               | -25 ~ +80°C                                      |            |            |            |            |            |            |            |
| Storage Temperature T <sub>S</sub>                 | -25 ~ +85°C                                      |            |            |            |            |            |            |            |

1. Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| CALL    | CALL           |

| TERMINAL | FUNCTION |
|----------|----------|
| 1        | +5V      |
| 2        | NC       |
| 3        | OUT1     |
| 4        | OUT2     |
| 5        | GND      |
| 6        | +IN1     |
| 7        | -IN1     |
| 8        | +IN2     |
| 9        | -IN2     |

| CURRENT   | Ø PIN        |
|-----------|--------------|
| 5A ~ 10A  | Ø 0.6[0.024] |
| 15A ~ 20A | Ø 0.9[0.035] |
| 25A ~ 40A | Ø 1.2[0.047] |



Unless otherwise specified, tolerances shall be ±0.5mm.

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## 3 to 30 Amp Applications — Open Loop

- Compact PCB Mount Design
- Integrated Primary
- Withstanding Voltage of 3000 Vrms
- 3A - 30A with a Bipolar  $\pm 15$ VDC Supply Voltage
- Low Cost

Specifications Measured at 25°C, RL-10K $\Omega$  Vcc= $\pm 15$ V

| Specification                             | L18P003D15        | L18P005D15   | L18P010D15 | L18P015D15 | L18P020D15 | L18P025D15 | L18P030D15 |
|---|-------------------|--|------------|------------|------------|------------|------------|
| Nominal Primary DC Current (If)           | $\pm 3$ A         | $\pm 5$ A  | $\pm 10$ A | $\pm 15$ A | $\pm 20$ A | $\pm 25$ A | $\pm 30$ A |
| Maximum Current                           | If(max) $\pm 9$ A | $\pm 15$ A   | $\pm 30$ A | $\pm 45$ A | $\pm 60$ A | $\pm 60$ A | $\pm 90$ A |
| Output Voltage @ If                       | V <sub>OUT</sub>  | $\pm 4V \pm 0.04V$ (at If)                               |            |            |            |            |            |
| Offset Voltage                            | V <sub>OE</sub>   | $0 \pm 0.040V$   |            |            |            |            |            |
| Accuracy @ If <sup>1</sup>                | X                 | $\pm 1\%$ of If  |            |            |            |            |            |
| Output Linearity <sup>1</sup> (O..If Max) | E <sub>L</sub>    | $\leq \pm 1\%$ MAX                                       |            |            |            |            |            |
| Power Supply                              | V <sub>CC</sub>   | $\pm 15V \pm 5\%$  |            |            |            |            |            |
| Response Time                             | T <sub>r</sub>    | $\leq 5\mu\text{sec}$ (di/dt = 10A / 5 $\mu\text{sec}$ ) |            |            |            |            |            |
| Current Consumption                       | I <sub>c</sub>    | $\leq 15\text{mA}$                                       |            |            |            |            |            |
| Output Temperature Characteristic         | TCE <sub>G</sub>  | $< \pm 0.1\%$ / °C MAX                                   |            |            |            |            |            |
| Offset Temperature Characteristic         | V <sub>OT</sub>   | $\leq \pm 1.5\text{mV}$ / °C TYP                         |            |            |            |            |            |
| Hysteresis Allowance @ If=0               | V <sub>OH</sub>   | $\leq 25\text{mV}$ (0A = If)                             |            |            |            |            |            |
| Withstand Voltage (50/60Hz)               | V <sub>d</sub>    | 3,000VACrms for 1 minute (Sensing Current 0.5mA)         |            |            |            |            |            |
| Insulation Resistance @ 500VDC            | R <sub>IS</sub>   | $\geq 500\text{M}\Omega$                                 |            |            |            |            |            |
| Operating Temperature                     | T <sub>A</sub>    | $-10 \sim +80^\circ\text{C}$                             |            |            |            |            |            |
| Storage Temperature                       | T <sub>S</sub>    | $-20 \sim +85^\circ\text{C}$                             |            |            |            |            |            |

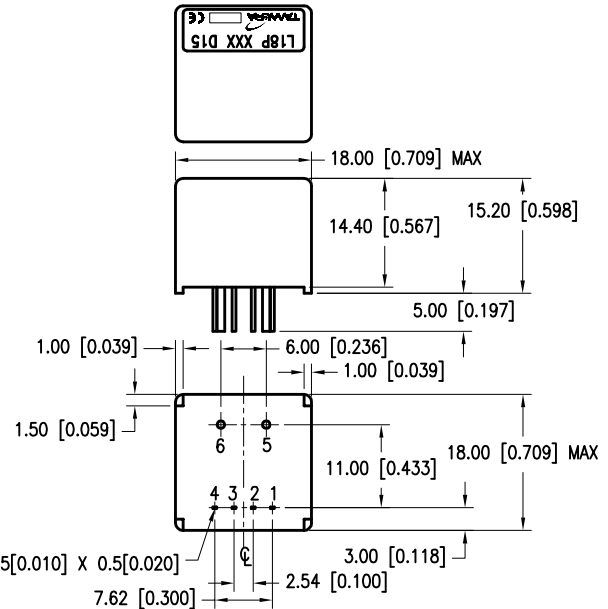
<sup>1</sup> Without offset

## Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| CALL    | CALL           |

| TERMINAL | FUNCTION         |
|----------|------------------|
| 1        | -V <sub>CC</sub> |
| 2        | GND              |
| 3        | +V <sub>CC</sub> |
| 4        | OUTPUT           |
| 5        | +IN              |
| 6        | -IN              |

| CURRENT   | Ø PIN        |
|-----------|--------------|
| 3A ~ 5A   | Ø 0.6[0.024] |
| 10A ~ 15A | Ø 0.9[0.035] |
| 20A ~ 30A | Ø 1.2[0.047] |



Unless otherwise specified, tolerances shall be  $\pm 0.5\text{mm}$ .

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# Hall Effect Current Sensors

## 40 to 60 Amp Applications — Open Loop

- Compact PCB Mount Design
- Dual Integrated Primary
- Withstanding Voltage of 3000 Vrms
- 40A - 60A Bipolar  $\pm 15\text{VDC}$  Supply Voltage
- Durable Busbar Construction



Specifications Measured at 25°C, RL-10KΩ Vcc=±15V

| Specification                             | L18P040D15       | L18P050D15                                      | L18P060D15 |
|---|------------------|---|------------|
| Nominal Primary DC Current (If)           | +40A             | +50A  | +60A       |
| Maximum Current If(max)                   | ±120A            | ±150A   | ±180A      |
| Output Voltage @ If                       | V <sub>OUT</sub> | ±4.0V ±0.050V                                   |            |
| Offset Voltage                            | V <sub>OE</sub>  | 0± 0.040V                                       |            |
| Accuracy @ If <sup>1</sup>                | X                | ± 1%  |            |
| Output Linearity <sup>1</sup> (O..If Max) | E <sub>L</sub>   | ≤ 1% MAX  |            |
| Power Supply                              | V <sub>CC</sub>  | ± 15V ±5%                                       |            |
| Response Time                             | T <sub>r</sub>   | ≤ 5μsec   |            |
| Current Consumption                       | I <sub>c</sub>   | ≤ 15mA  |            |
| Output Temperature Characteristic         | TCE <sub>G</sub> | < ± 0.1% / °C MAX                               |            |
| Offset Temperature Characteristic         | V <sub>OT</sub>  | ≤ ± 1.5mV / °C MAX                              |            |
| Hysteresis Allowance @ If=0               | V <sub>OH</sub>  | ≤ 40mV (0A = If)                                |            |
| Withstand Voltage (50/60Hz)               | V <sub>d</sub>   | 3000VACrms for 1 minute (Sensing Current 0.5mA) |            |
| Insulation Resistance @ 500VDC            | R <sub>IS</sub>  | ≥ 500MΩ   |            |
| Operating Temperature                     | T <sub>A</sub>   | -10 ~ +80°C                                     |            |
| Storage Temperature                       | T <sub>S</sub>   | -20 ~ +85°C                                     |            |

1. Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| CALL    | CALL           |

| TERMINAL | FUNCTION         |
|----------|------------------|
| 1        | -V <sub>CC</sub> |
| 2        | GND              |
| 3        | +V <sub>CC</sub> |
| 4        | OUTPUT           |
| 5        | +IN              |
| 6        | -IN              |

| CURRENT   | Ø PIN                         |
|-----------|-------------------------------|
| 40A ~ 60A | BUSBAR<br>1.0[0.04]X6.3[2.48] |



Unless otherwise specified, tolerances shall be ±0.5mm.

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# Hall Effect Current Sensors

## 50 to 200 Amp Applications — Open Loop



- Compact PCB Mount Design
- Voltage Output type
- CE EN50178 (pending)

Specifications Measured at 25°C, RL=10KΩ, V<sub>CC</sub>=±15V

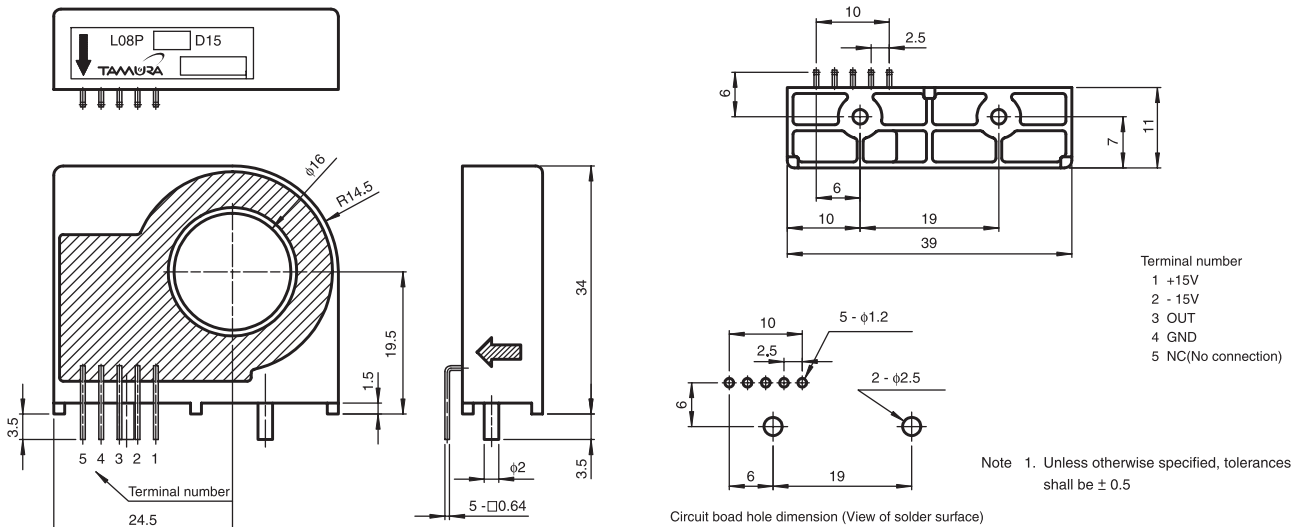
| Specification   |                     | L08P050D15                                       | L08P100D15   | L08P150D15 | L08P200D15 |
|---|---------------------|--|--------------|------------|------------|
| Nominal Primary DC Current                            | (I <sub>f</sub> )   | 50AT   | 100AT        | 150AT      | 200AT      |
| Maximum Current                                       | I <sub>f(max)</sub> | ±150AT   | ±300AT       | ±350AT     | ±350AT     |
| Output Voltage @ I <sub>f</sub>                       | V <sub>OUT</sub>    | 4V   |              |            |            |
| Offset Voltage  | V <sub>OE</sub>     | <±40mV   |              |            |            |
| Accuracy @ I <sub>f</sub> <sup>2</sup>                | X                   | ±1% of I <sub>f</sub>                            |              |            |            |
| Output Linearity <sup>2</sup> (0..I <sub>f</sub> MAX) | E <sub>L</sub>      | ≤±1% of I <sub>f</sub>                           |              |            |            |
| Power Supply  | V <sub>CC</sub>     | ±15V±5%  |              |            |            |
| Response Time   | t <sub>r</sub>      | <10μ Sec   |              |            |            |
| Current Consumption                                   | I <sub>c</sub>      | 12mA typ   |              |            |            |
| Output Temperature Characteristic                     | TCE <sub>B</sub>    | <±0.1% / °C                                      | <±0.05% / °C |            |            |
| Offset Temperature Characteristic                     | V <sub>OT</sub>     | <±2mV / °C                                       | <±1mV / °C   |            |            |
| Hysteresis Allowance @ I <sub>f</sub> =0              | V <sub>OH</sub>     | < ±30mV  | <± 20mV      |            |            |
| Withstand Voltage (50/60Hz)                           | V <sub>d</sub>      | 2,500VACrms for 1 minute (Sensing Current 0.5mA) |              |            |            |
| Insulation Resistance @ 500VDC                        | R <sub>IS</sub>     | ≥500MΩ   |              |            |            |
| Operating Bandwidth (-3dB)                            | f                   | DC - 50kHz                                       |              |            |            |
| Operating Temperature                                 | T <sub>A</sub>      | -10 - +80°C                                      |              |            |            |
| Storage Temperature                                   | T <sub>s</sub>      | -20 - +85°C                                      |              |            |            |

<sup>1</sup> Small signal only; derating needed to avoid excessive core heating at high frequency

<sup>2</sup> Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| 50      | 25             |



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# Hall Effect Current Sensors

## 50 to 600 Amp Applications — Open Loop

- Compact PCB Mount Design
- Voltage Output type
- Very High Linearity
- 15V Supply Voltage
- CE EN50178 (pending)



Specifications Measured at 25°C, RL=10KΩ, V<sub>CC</sub>=±15V

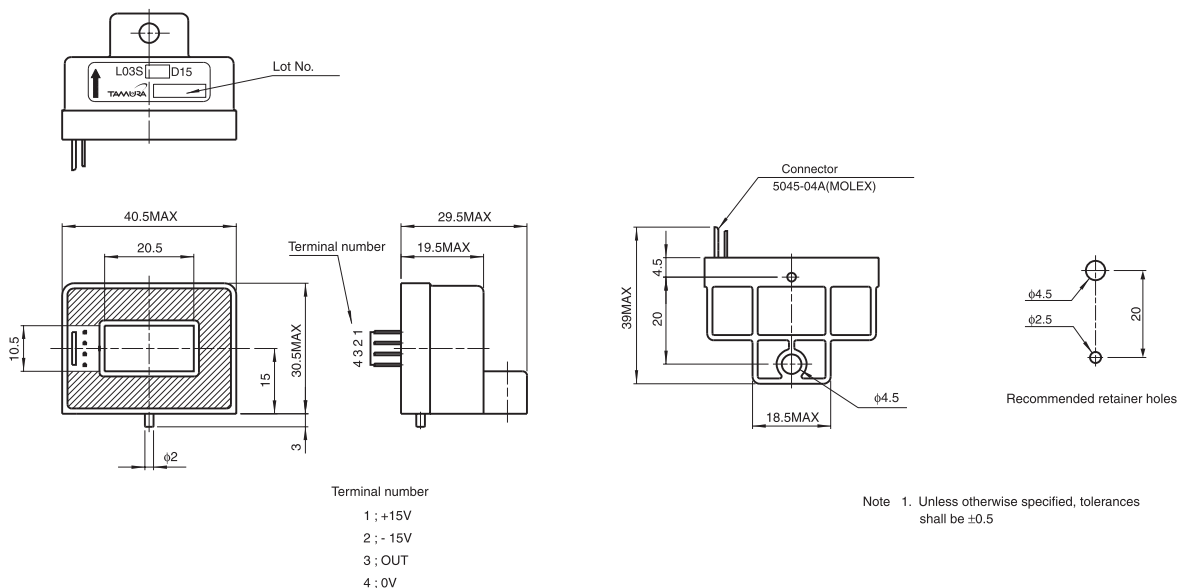
| Specification  | L03S050D15                                       | L03S100D15 | L03S200D15 | L03S300D15            | L03S400D15 | L03S500D15 | L03S600D15 |
|--|--|------------|------------|-----------------------|------------|------------|------------|
| Nominal Primary DC Current (I <sub>f</sub> )             | 50AT   | 100AT      | 200AT      | 300AT                 | 400AT      | 500AT      | 600AT      |
| Maximum Current I <sub>f(max)</sub>                      | ±150AT   | ±300AT     | ±600AT     | ±700AT                | ±700AT     | ±700AT     | ±700AT     |
| Output Voltage @ I <sub>f</sub>                          | V <sub>OUT</sub>                                 |            |            | 4V                    |            |            |            |
| Offset Voltage V <sub>OE</sub>                           | <± 40mV  |            |            | <±30mV                |            |            |            |
| Accuracy @ I <sub>f</sub> <sup>2</sup>                   | X  |            |            | ±1% of I <sub>f</sub> |            |            |            |
| Output Linearity <sup>2</sup> (0..I <sub>f</sub> MAX)    | E <sub>L</sub>                                   |            |            | ±1% of I <sub>f</sub> |            |            |            |
| Power Supply V <sub>CC</sub>                             |  |            |            | ±15V±5%               |            |            |            |
| Response Time t <sub>r</sub>                             |  |            |            | ≤5μ Sec               |            |            |            |
| Current Consumption I <sub>c</sub>                       |  |            |            | 12mA typ              |            |            |            |
| Output Temperature Characteristic TCE <sub>G</sub>       |  |            |            | <±0.1% / °C           |            |            |            |
| Offset Temperature Characteristic V <sub>OT</sub>        | <±2mV / °C                                       |            |            | <±1mV / °C            |            |            |            |
| Hysteresis Allowance @ I <sub>f</sub> =0 V <sub>OH</sub> | ±30mV  |            |            | ±20mV                 |            | ±10mV      |            |
| Withstand Voltage (50/60Hz) V <sub>d</sub>               | 2,500VACrms for 1 minute (sensing current 0.5mA) |            |            |                       |            |            |            |
| Insulation Resistance @ 500VDC R <sub>IS</sub>           | ≥500MΩ   |            |            |                       |            |            |            |
| Operating Bandwidth <sup>1</sup> (-3dB) f                |  |            |            | DC - 50kHz            |            |            |            |
| Operating Temperature T <sub>A</sub>                     | -10 - +80°C                                      |            |            |                       |            |            |            |
| Storage Temperature T <sub>S</sub>                       | -15 - +90°C                                      |            |            |                       |            |            |            |

<sup>1</sup> Small signal only; derating needed to avoid excessive core heating at high frequency

<sup>2</sup> Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| 20      | 50             |



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# Hall Effect Current Sensors

## 50 to 600 Amp Applications — Open Loop



- Compact PCB Mount Design
- Voltage Output type
- Very High Linearity
- 5V Supply Voltage
- CE EN50178 (pending)

Specifications Measured at 25°C, RL=10KΩ, Vcc=+ 5V; Vref =  $\frac{V_{CC}}{2}$

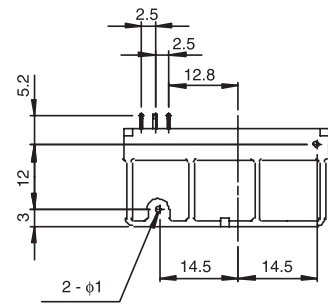
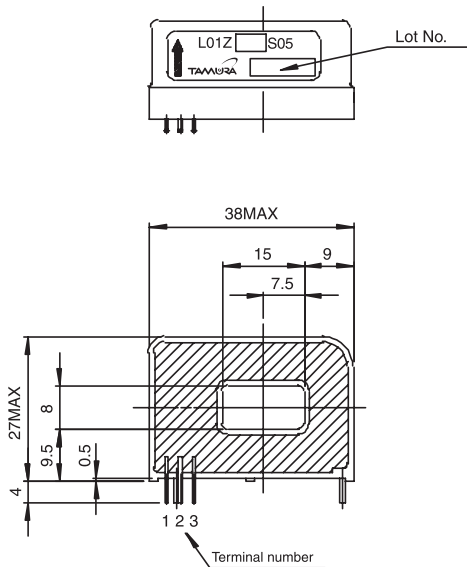
| Specification                                      | L01Z050S05     | L01Z100S05 | L01Z150S05 | L01Z200S05                                       | L01Z300S05  | L01Z400S05 | L01Z500S05 | L01Z600S05 |
|--|----------------|------------|------------|--|-------------|------------|------------|------------|
| Nominal Primary DC Current (If)                    | 50AT           | 100AT      | 150AT      | 200AT  | 300AT       | 400AT      | 500AT      | 600AT      |
| Maximum Current If(max)                            | ±62.5AT        | ±125AT     | ±187.5AT   | ±250AT   | ±375AT      | ±500AT     | ±625AT     | ±750AT     |
| Output Voltage @ If                                | Vref±1.5V      |            |            |  | Vref±1.5V   |            |            |            |
| Offset Voltage V <sub>OE</sub>                     | 2.5V±0.035V    |            |            |  | 2.5V±0.030V |            |            |            |
| Accuracy @ If <sup>2</sup>                         | X              | <±1% of If |            |  | <±1% of If  |            |            |            |
| Output Linearity <sup>2</sup> (0..If MAX)          | E <sub>L</sub> |            |            | ±1% of If  |             |            |            |            |
| Power Supply Vcc                                   |                |            |            | 5V ±2.0%   |             |            |            |            |
| Response Time t <sub>r</sub>                       |                |            |            | <5μs   |             |            |            |            |
| Current Consumption I <sub>c</sub>                 |                |            |            | <15mA  |             |            |            |            |
| Output Temperature Characteristic TCE <sub>g</sub> | <±2mV / °C     |            |            | <±1.5mV / °C                                     |             |            |            |            |
| Offset Temperature Characteristic V <sub>OT</sub>  | <±2mV / °C     |            |            | <±1mV / °C                                       |             |            |            |            |
| Hysteresis Allowance @ If=0 V <sub>OH</sub>        |                | ±8mV       |            | ±4mV   |             |            | ±6mV       |            |
| Withstand Voltage (50/60Hz) V <sub>d</sub>         |                |            |            | 2,500VACrms for 1 minute (sensing current 0.5mA) |             |            |            |            |
| Insulation Resistance @ 500VDC R <sub>IS</sub>     |                |            |            | ≥500MΩ   |             |            |            |            |
| Operating Bandwidth <sup>1</sup> (-3dB) f          |                |            |            | DC - 50kHz                                       |             |            |            |            |
| Operating Temperature T <sub>A</sub>               |                |            |            | -10 - +80°C                                      |             |            |            |            |
| Storage Temperature T <sub>S</sub>                 |                |            |            | -15 - +85°C                                      |             |            |            |            |

<sup>1</sup> Small signal only; derating needed to avoid excessive core heating at high frequency

<sup>2</sup> Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| 50      | 45             |



- Terminal number
- 1 OUT
  - 2 OV
  - 3 5V

Note 1. Unless otherwise specified, tolerances shall be ± 0.5

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# Hall Effect Current Sensors

## 100 to 300 Amp Applications — Closed Loop

- PCB Mount Design
- Current Output type
- Very High Linearity
- $\pm 15V$  Supply Voltage
- CE EN50178 (pending)



Specifications Measured at 25°C, RL=10K $\Omega$ , VCC= $\pm 15V$

| Specification                         |                               | S21Z100D15  | S21Z150D15 | S21Z200D15 | S21Z300D15 |
|---------------------------------------|-------------------------------|---|------------|------------|------------|
| Nominal Primary DC Current            | (If)                          | 100A  | 150A       | 200A       | 300A       |
| Maximum Current                       | If(max)                       | 150A  | 225A       | 300A       | 450A       |
| Output Current @ If                   | I <sub>OUT</sub>              | 50mA  | 75mA       | 100mA      | 150mA      |
| Conversion Ratio                      | K <sub>n</sub>                | 1:2000  | 1:2000     | 1:2000     | 1:2000     |
| Accuracy                              | X                             | $\pm 1\%$ of If   |            |            |            |
| Offset Current (If=0) <sup>1</sup>    | I <sub>o</sub>                | $\pm 0.5mA$   |            |            |            |
| Output Linearity <sup>1</sup> (0..If) | E <sub>L</sub>                | $\pm 0.25\%$ of If  |            |            |            |
| Power Supply                          | V <sub>CC</sub>               | $\pm 15V \pm 5\%$ <sup>2</sup>                            |            |            |            |
| Response Time                         | t <sub>r</sub>                | $\leq 1\mu s$   |            |            |            |
| Current Consumption                   | I <sub>c</sub>                | $\pm 16mA$ <sup>3</sup>                                   |            |            |            |
| Output Temperature Characteristic     | TC <sub>I<sub>OUT</sub></sub> | $\pm 0.025\% / ^\circ C$ @ If=0 (Ta=-5 to +70°C)          |            |            |            |
| Offset Temperature Characteristic     | I <sub>OT</sub>               | $\pm 0.025mA / ^\circ C$ @ If=0 (Ta=-5 to +70°C)          |            |            |            |
| Hysteresis Allowance If=0 - Ifmax)    | I <sub>OH</sub>               | $\leq 0.3mA$  |            |            |            |
| Withstand Voltage (50/60Hz)           | V <sub>d</sub>                | 2,500VACrms for 1 minute (sensing current 0.5mA)          |            |            |            |
| Insulation Resistance @ 500VDC        | R <sub>IS</sub>               | 500M $\Omega$   |            |            |            |
| Frequency Bandwidth (-3dB)            | f                             | DC - 150kHz   |            |            |            |
| Operating Temperature                 | T <sub>A</sub>                | -10 - +70°C   |            |            |            |
| Storage Temperature                   | T <sub>S</sub>                | -20 - +85°C   |            |            |            |
| Secondary Coil Resistance             | R <sub>s</sub>                | TBD Ohms @ Ta = 70°C (Contact Tamura for additional info) |            |            |            |

<sup>1</sup> Without Offset

<sup>2</sup> Ifmax is Restricted by V<sub>CC</sub>

<sup>3</sup> Output Current not included

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| 50      | 25             |



Note 1. Unless otherwise specified, tolerances shall be  $\pm 0.5$

Terminal number  
1. OUT  
2. -15V  
3. +15V

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# Hall Effect Current Sensors

## 50 to 300 Amp Applications — Closed Loop



- Panel Mount Design
- Current Output type
- Very High Linearity
- $\pm 12V$  or  $\pm 15V$  Supply Voltage
- CE EN50178 (pending)

Specifications Measured at 25°C,  $R_L \pm 15K\Omega$ ,  $V_{CC} = \pm 12V$

| Specification                          |              | S20S050A | S20S100A | S20S150A   | S20S200A | S20S300A |
|--|--------------|----------|----------|--|----------|----------|
| Nominal Primary DC Current             | (If)         | 50A      | 100A     | 150A   | 200A     | 300A     |
| Maximum Current                        | $I_{F(max)}$ | 75A      | 150A     | 225A   | 300A     | 450A     |
| Output Current @ If                    | $I_{OUT}$    | 50mA     | 100mA    | 150mA  | 100mA    | 150mA    |
| Conversion Ratio                       | $K_H$        | 1:1000   | 1:1000   | 1:1000   | 1:2000   | 1:2000   |
| Offset Current (If=0)                  | $I_o$        |          |          | $\pm 0.5mA$  |          |          |
| Accuracy <sup>4</sup>                  | X            |          |          | $< \pm 1\%$ of If                                      |          |          |
| Output Linearity <sup>4</sup> (0..MAX) | $E_L$        |          |          | $\pm 0.25\%$   |          |          |
| Power Supply                           | $V_{CC}$     |          |          | $12V$ or $\pm 15V \pm 5\%$ <sup>2</sup>                |          |          |
| Response Time @ $di/dt=50A/uSec$       | $t_r$        |          |          | $1\mu s$   |          |          |
| Current Consumption                    | $I_c$        |          |          | $\pm 16mA$ <sup>3</sup>                                |          |          |
| Output Temperature Characteristic      | $TCI_{OUT}$  |          |          | $\pm 0.02\% / ^\circ C$ @ If (Ta=-5 to +70°C)          |          |          |
| Offset Temperature Characteristic      | $I_{OT}$     |          |          | $\pm 0.025mA / ^\circ C$ @ If=0 (Ta=-5 to +70°C)       |          |          |
| Hysteresis Allowance                   | $I_{OH}$     |          |          | 0.5mA  |          |          |
| Withstand Voltage (50/60Hz)            | $V_d$        |          |          | 2,500VACrms for 1 minute (sensing current 0.5mA)       |          |          |
| Insulation Resistance @ 500VDC         | $R_{IS}$     |          |          | 500M $\Omega$  |          |          |
| Frequency Bandwidth (-3dB)             | f            |          |          | DC - 150kHz  |          |          |
| Operating Temperature                  | $T_A$        |          |          | -10 - +70°C  |          |          |
| Storage Temperature                    | $T_S$        |          |          | -20 - +85°C  |          |          |
| Secondary Coil Resistance              | $R_S$        |          |          | <sup>1</sup> Ohms @ 70°C (Contact Tamura Tech Support) |          |          |

<sup>1</sup> TBD

<sup>2</sup> Ifmax is Restricted by Vcc

<sup>3</sup> Output Current not included

<sup>4</sup> Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| TBD     | 46             |



Note Unless otherwise specified, tolerances shall be  $\pm 0.5$



Terminal Pin  
1+15V  
2- 15V  
3.OUT  
4.NC

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## 6 to 25 Amp Applications — Closed Loop

- Multirange Current Sensor
- Voltage Output
- Compact PCB Mount
- Single Supply ( $\pm 5V$ )
- CE EN50178 (pending)



Specifications Measured at 25°C, RL=10K $\Omega$ , V<sub>CC</sub>=+5V

| Specification  | S22P006S05         | S22P015S05                                       | S22P025S05         |
|--|--------------------|--|--------------------|
| Nominal Primary r.m.s. Current (I <sub>f</sub> )                               | $\pm 6A$           | $\pm 15A$  | $\pm 25A$          |
| Maximum Current I <sub>f(max)</sub>  | $\pm 18A$          | $\pm 45A$  | $\pm 75A$          |
| Offset Voltage (I <sub>f</sub> =0) V <sub>REF</sub>                            | 2.5V $\pm$ 30mV    | 2.5V $\pm$ 20mV                                  | 2.5V $\pm$ 15mV    |
| Output Voltage V <sub>OUT</sub>  |                    | VREF $\pm$ 0.625V                                |                    |
| Output Voltage Accuracy <sup>1</sup> @ I <sub>f</sub> X                        |                    | 0.625V $\pm$ 10mV                                |                    |
| Output Linearity (0 to I <sub>f</sub> ) E <sub>L</sub>                         |                    | $\pm 0.25\%$                                     |                    |
| Power Supply V <sub>CC</sub>   |                    | $\pm 5V \pm 5\%$                                 |                    |
| Response Time t <sub>r</sub>   |                    | 1 $\mu$ s  |                    |
| Current Consumption I <sub>C</sub>   |                    | 12.5mA Typ                                       |                    |
| Output Temperature Characteristic ICEG   |                    | $\pm 0.05mV/^\circ C$                            |                    |
| Offset Temperature Characteristic TC <sub>OUT</sub>                            | 1.25mV/ $^\circ C$ | 1.25mV/ $^\circ C$                               | 1.25mV/ $^\circ C$ |
| Hysteresis Allowance (I <sub>f</sub> =0 to I <sub>fmax</sub> ) V <sub>OH</sub> |                    | $\leq 0.25mV$                                    |                    |
| Withstand Voltage (50/60Hz) V <sub>d</sub>                                     |                    | 3,000VACrms for 1 minute (sensing current 0.5mA) |                    |
| Insulation Resistance @ 500VDC R <sub>IS</sub>                                 |                    | $\geq 500M\Omega$                                |                    |
| Operating Bandwidth (1dB) f  |                    | DC - 200kHz                                      |                    |
| Operating Temperature T <sub>A</sub>   |                    | -10 - +85 $^\circ C$                             |                    |
| Storage Temperature T <sub>S</sub>   |                    | -25 - +100 $^\circ C$                            |                    |

<sup>1</sup> Without offset

### Package & Weight Information

| QTY/Box | Weight/each(g) |
|---------|----------------|
| 100     | 8              |



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