

**Electrical data CAS 6-NP**

At  $T_A = 25^\circ\text{C}$ ,  $V_C = +5\text{ V}$ ,  $N_P = 1$  turn,  $R_L = 10\text{ k}\Omega$ , unless otherwise noted.

| Parameter                                                                      | Symbol          | Unit                          | Min   | Typ                                | Max                                | Comment                                                               |
|--------------------------------------------------------------------------------|-----------------|-------------------------------|-------|------------------------------------|------------------------------------|-----------------------------------------------------------------------|
| Primary nominal current rms                                                    | $I_{PN}$        | A                             |       | 6                                  |                                    |                                                                       |
| Primary current, measuring range                                               | $I_{PM}$        | A                             | -20   |                                    | 20                                 |                                                                       |
| Number of primary turns                                                        | $N_P$           | -                             |       | 1,2,3                              |                                    |                                                                       |
| Supply voltage                                                                 | $V_C$           | V                             | 4.75  | 5                                  | 5.25                               |                                                                       |
| Current consumption                                                            | $I_C$           | mA                            |       | $15 + \frac{I_P (\text{mA})}{N_S}$ | $20 + \frac{I_P (\text{mA})}{N_S}$ | $N_S = 1731$ turns                                                    |
| Output voltage                                                                 | $V_{OUT}$       | V                             | 0.375 |                                    | 4.625                              |                                                                       |
| Output voltage @ $I_P = 0\text{ A}$                                            | $V_{OUT}$       | V                             |       | 2.5                                |                                    |                                                                       |
| Electrical offset voltage                                                      | $V_{OE}$        | mV                            | -10.4 |                                    | 10.4                               | 100% tested<br>$V_{OUT} - 2.5\text{ V}$                               |
| Electrical offset current referred to primary                                  | $I_{OE}$        | A                             | -0.1  |                                    | 0.1                                | 100% tested                                                           |
| Temperature coefficient of $V_{OUT}$ @ $I_P = 0\text{ A}$                      | $TCV_{OUT}$     | ppm/K                         |       | $\pm 10$                           | $\pm 80$                           | ppm/K of $2.5\text{ V}$<br>- $40^\circ\text{C}$ .. $85^\circ\text{C}$ |
| Theoretical sensitivity                                                        | $G_{th}$        | mV/A                          |       | 104.2                              |                                    | $625\text{ mV}/I_{PN}$                                                |
| Sensitivity error                                                              | $\varepsilon_G$ | %                             | -0.7  |                                    | 0.7                                | 100% tested                                                           |
| Temperature coefficient of $G$                                                 | $TCG$           | ppm/K                         |       |                                    | $\pm 40$                           | - $40^\circ\text{C}$ .. $85^\circ\text{C}$                            |
| Linearity error                                                                | $\varepsilon_L$ | % of $I_{PN}$                 | -0.1  |                                    | 0.1                                |                                                                       |
| Magnetic offset current ( $10 \times I_{PN}$ ) referred to primary             | $I_{OM}$        | A                             | -0.1  |                                    | 0.1                                |                                                                       |
| Output current noise (spectral density) rms 100 .. 100 kHz referred to primary | $i_{no}$        | $\mu\text{A}/\text{Hz}^{1/2}$ |       | 36                                 |                                    | $R_L = 1\text{ k}\Omega$                                              |
| Peak-peak output ripple at oscillator frequency $f = 450\text{ kHz}$ (typ.)    | -               | mV                            |       | 40                                 | 160                                | $R_L = 1\text{ k}\Omega$                                              |
| Reaction time @ 10 % of $I_{PN}$                                               | $t_{ra}$        | $\mu\text{s}$                 |       |                                    | 0.3                                | $R_L = 1\text{ k}\Omega$<br>$di/dt = 18\text{ A}/\mu\text{s}$         |
| Response time @ 90 % of $I_{PN}$                                               | $t_r$           | $\mu\text{s}$                 |       |                                    | 0.3                                | $R_L = 1\text{ k}\Omega$<br>$di/dt = 18\text{ A}/\mu\text{s}$         |
| Frequency bandwidth ( $\pm 1\text{ dB}$ )                                      | <b>BW</b>       | kHz                           | 200   |                                    |                                    | $R_L = 1\text{ k}\Omega$                                              |
| Frequency bandwidth ( $\pm 3\text{ dB}$ )                                      | <b>BW</b>       | kHz                           | 300   |                                    |                                    | $R_L = 1\text{ k}\Omega$                                              |
| Overall accuracy                                                               | $X_G$           | % of $I_{PN}$                 |       |                                    | 2.5                                |                                                                       |
| Overall accuracy @ $T_A = 85^\circ\text{C}$                                    | $X_G$           | % of $I_{PN}$                 |       |                                    | 4.6                                |                                                                       |
| Accuracy                                                                       | <b>X</b>        | % of $I_{PN}$                 |       |                                    | 0.8                                |                                                                       |
| Accuracy @ $T_A = 85^\circ\text{C}$                                            | <b>X</b>        | % of $I_{PN}$                 |       |                                    | 3.0                                |                                                                       |

**Electrical data CAS 15-NP**

At  $T_A = 25^\circ\text{C}$ ,  $V_C = +5\text{ V}$ ,  $N_P = 1$  turn,  $R_L = 10\text{ k}\Omega$ , unless otherwise noted.

| Parameter                                                                         | Symbol          | Unit                          | Min   | Typ                                | Max                                | Comment                                                       |
|-----------------------------------------------------------------------------------|-----------------|-------------------------------|-------|------------------------------------|------------------------------------|---------------------------------------------------------------|
| Primary nominal current rms                                                       | $I_{PN}$        | A                             |       | 15                                 |                                    |                                                               |
| Primary current, measuring range                                                  | $I_{PM}$        | A                             | -51   |                                    | 51                                 |                                                               |
| Number of primary turns                                                           | $N_P$           | -                             |       | 1,2,3                              |                                    |                                                               |
| Supply voltage                                                                    | $V_C$           | V                             | 4.75  | 5                                  | 5.25                               |                                                               |
| Current consumption                                                               | $I_C$           | mA                            |       | $15 + \frac{I_P (\text{mA})}{N_S}$ | $20 + \frac{I_P (\text{mA})}{N_S}$ | $N_S = 1731$ turns                                            |
| Output voltage                                                                    | $V_{OUT}$       | V                             | 0.375 |                                    | 4.625                              |                                                               |
| Output voltage @ $I_P = 0\text{ A}$                                               | $V_{OUT}$       | V                             |       | 2.5                                |                                    |                                                               |
| Electrical offset voltage                                                         | $V_{OE}$        | mV                            | -7.1  |                                    | 7.1                                | 100% tested<br>$V_{OUT} - 2.5\text{ V}$                       |
| Electrical offset current referred to primary                                     | $I_{OE}$        | A                             | -0.17 |                                    | 0.17                               | 100% tested                                                   |
| Temperature coefficient of $V_{OUT}$ @ $I_P = 0\text{ A}$                         | $TCV_{OUT}$     | ppm/K                         |       | $\pm 7.5$                          | $\pm 70$                           | ppm/K of 2.5 V<br>- $40^\circ\text{C}$ .. $85^\circ\text{C}$  |
| Theoretical sensitivity                                                           | $G_{th}$        | mV/A                          |       | 41.67                              |                                    | 625 mV / $I_{PN}$                                             |
| Sensitivity error                                                                 | $\varepsilon_G$ | %                             | -0.7  |                                    | 0.7                                | 100% tested                                                   |
| Temperature coefficient of $G$                                                    | $TCG$           | ppm/K                         |       |                                    | $\pm 40$                           | - $40^\circ\text{C}$ .. $85^\circ\text{C}$                    |
| Linearity error                                                                   | $\varepsilon_L$ | % of $I_{PN}$                 | -0.1  |                                    | 0.1                                |                                                               |
| Magnetic offset current ( $10 \times I_{PN}$ ) referred to primary                | $I_{OM}$        | A                             | -0.1  |                                    | 0.1                                |                                                               |
| Output current noise (spectral density) rms 100 Hz .. 100 kHz referred to primary | $i_{no}$        | $\mu\text{A}/\text{Hz}^{1/2}$ |       | 90                                 |                                    | $R_L = 1\text{ k}\Omega$                                      |
| Peak-peak output ripple at oscillator frequency $f = 450\text{ kHz}$ (typ.)       | -               | mV                            |       | 15                                 | 60                                 | $R_L = 1\text{ k}\Omega$                                      |
| Reaction time @ 10 % of $I_{PN}$                                                  | $t_{ra}$        | $\mu\text{s}$                 |       |                                    | 0.3                                | $R_L = 1\text{ k}\Omega$<br>$di/dt = 44\text{ A}/\mu\text{s}$ |
| Response time @ 90 % of $I_{PN}$                                                  | $t_r$           | $\mu\text{s}$                 |       |                                    | 0.3                                | $R_L = 1\text{ k}\Omega$<br>$di/dt = 44\text{ A}/\mu\text{s}$ |
| Frequency bandwidth ( $\pm 1\text{ dB}$ )                                         | <b>BW</b>       | kHz                           | 200   |                                    |                                    | $R_L = 1\text{ k}\Omega$                                      |
| Frequency bandwidth ( $\pm 3\text{ dB}$ )                                         | <b>BW</b>       | kHz                           | 300   |                                    |                                    | $R_L = 1\text{ k}\Omega$                                      |
| Overall accuracy                                                                  | $X_G$           | % of $I_{PN}$                 |       |                                    | 1.9                                |                                                               |
| Overall accuracy @ $T_A = 85^\circ\text{C}$                                       | $X_G$           | % of $I_{PN}$                 |       |                                    | 3.9                                |                                                               |
| Accuracy                                                                          | $X$             | % of $I_{PN}$                 |       |                                    | 0.8                                |                                                               |
| Accuracy @ $T_A = 85^\circ\text{C}$                                               | $X$             | % of $I_{PN}$                 |       |                                    | 2.7                                |                                                               |