

Hall Effect Current Sensors S22P Series



Features:

- Closed Loop type
- Voltage output
- Unipolar power supply
- Configurable integrated primary
- Printed circuit board mounting
- UL recognised - plastic case material UL94V0
- UL Recognition

Advantages:

- Excellent accuracy and linearity
- Low temperature drift
- Wide frequency bandwidth
- No insertion loss
- High Immunity to external interferences
- Optimised response time
- Current overload capability

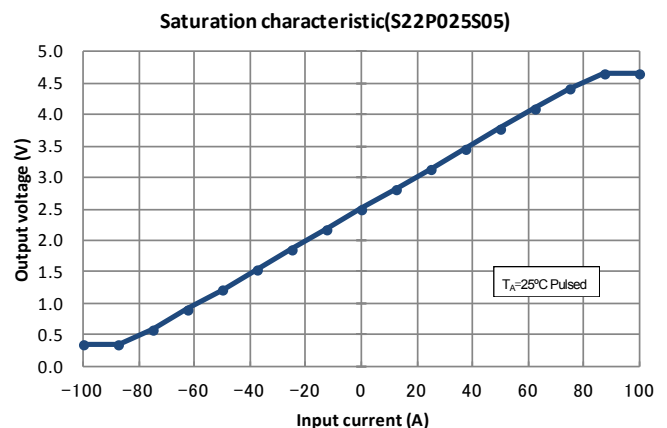
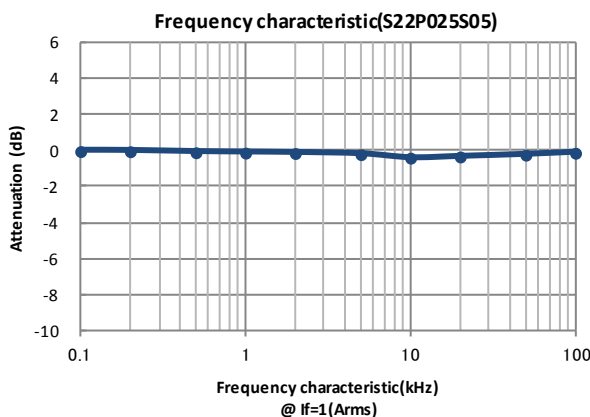
Specifications

 $T_A=25^{\circ}\text{C}$, $V_{CC}=+5\text{V}$, $R_L=10\text{k}\Omega$

| Parameters | Symbol | S22P006S05 | S22P015S05 | S22P025S05 |
|--|--------------|---|---|---|
| Primary nominal current | I_f | 6A | 15A | 25A |
| Saturation current | I_{fmax} | $\geq \pm 18\text{A}$ | $\geq \pm 45\text{A}$ | $\geq \pm 75\text{A}$ |
| Rated output voltage | V_o | $V_{of} \pm 0.625\text{V}$ (at I_f) | | |
| Offset voltage ¹ (at $I_f=0\text{A}$) | V_{of} | $2.5\text{V} \pm 0.050\text{V}$ | $2.5\text{V} \pm 0.020\text{V}$ | $2.5\text{V} \pm 0.015\text{V}$ |
| Output voltage accuracy(at I_f) | X | $0.625\text{V} \pm 0.010\text{V}$ (at I_f) | | |
| Output linearity ² ($0\text{A} \sim I_f$) | ϵ_L | $\leq \pm 0.2\%$ (at I_f) | | |
| Power supply voltage | V_{CC} | $+5\text{V} \pm 5\%$ | | |
| Consumption current ³ | I_{CC} | Typ. 12.5mA (at $I_f=0\text{A}$) + $37.5\text{mA} / 22.5\text{mA} / 9\text{mA}$ (at $I_f = 75\text{A} / 45\text{A} / 18\text{A}$) | | |
| Response time ⁴ | t_r | $\leq 1.0\mu\text{s}$ (at $di/dt = 100\text{A}/\mu\text{s}$) | | |
| Thermal drift of gain ⁵ | TcV_o | $\leq \pm 0.05\text{mV}/^{\circ}\text{C}$ | | |
| Thermal drift of offset | TcV_{of} | $-10^{\circ}\text{C} \sim 25^{\circ}\text{C} : \leq \pm 1.6\text{mV}/^{\circ}\text{C}$ $25^{\circ}\text{C} \sim 85^{\circ}\text{C} : \leq \pm 0.8\text{mV}/^{\circ}\text{C}$ | $-10^{\circ}\text{C} \sim 25^{\circ}\text{C} : \leq \pm 0.6\text{mV}/^{\circ}\text{C}$ $25^{\circ}\text{C} \sim 85^{\circ}\text{C} : \leq \pm 0.3\text{mV}/^{\circ}\text{C}$ | $-10^{\circ}\text{C} \sim 25^{\circ}\text{C} : \leq \pm 0.4\text{mV}/^{\circ}\text{C}$ $25^{\circ}\text{C} \sim 85^{\circ}\text{C} : \leq \pm 0.2\text{mV}/^{\circ}\text{C}$ |
| Hysteresis error | V_{OH} | $\leq 0.5\text{mV}$ (at $I_f=0\text{A} \rightarrow I_f \rightarrow 0\text{A}$) | | |
| Insulation voltage | V_d | AC 3kV for 1minute (Sensing current 0.5mA) Primary \leftrightarrow Secondary | | |
| Insulation resistance | R_{IS} | $\geq 500\text{M}\Omega$ (at DC 500V), primary \leftrightarrow secondary | | |
| Ambient operation temperature | T_A | $-10^{\circ}\text{C} \sim +85^{\circ}\text{C}$ | | |
| Ambient storage temperature | T_S | $-25^{\circ}\text{C} \sim +100^{\circ}\text{C}$ | | |

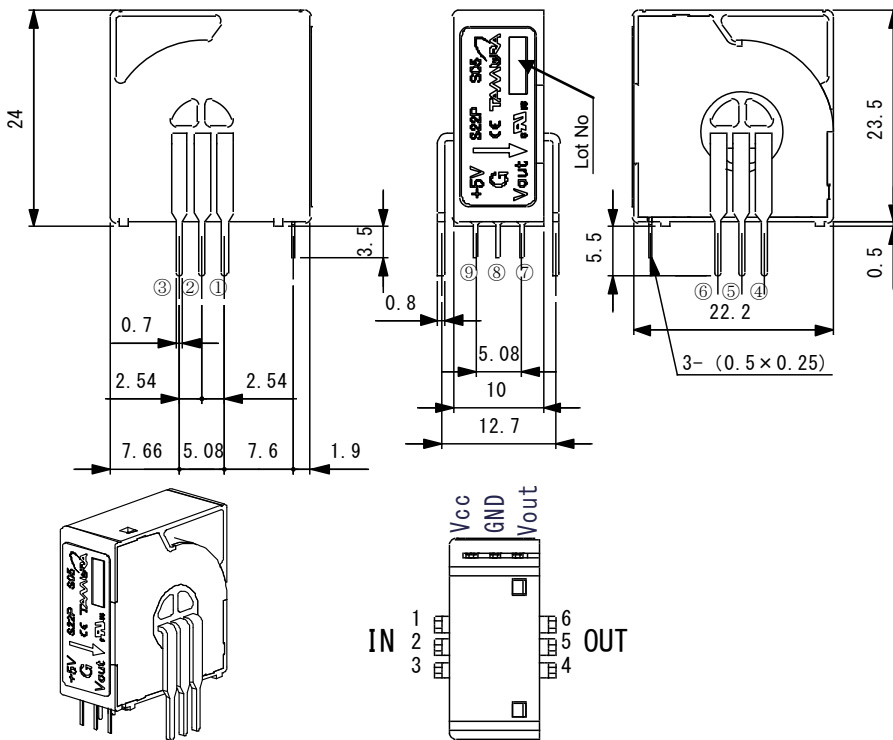
¹ After removal of core hysteresis — ² Without offset — ³ Conversion ratio:2000 — ⁴ Time between 90% input current full scale and 90% of sensor output full scale — ⁵ Without Thermal drift of offset

Electrical Performances



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Mechanical dimensions



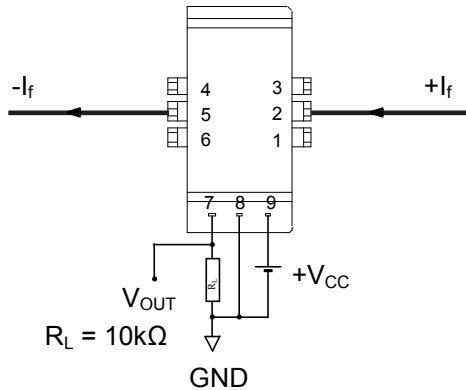
NOTES

1. Unit is mm
2. Tolerance is 0.5mm

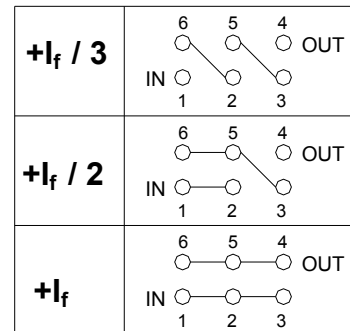
Terminal number:

1. IN-1 (Primary input current (+))
2. IN-2 (Primary input current (+))
3. IN-3 (Primary input current (+))
4. OUT-3 (Primary input current (-))
5. OUT-2 (Primary input current (-))
6. OUT-1 (Primary input current (-))
7. V_{OUT}
8. GND
9. $+V_{CC}(+5V)$

Electrical connection diagram



Connection diagram



UL Standard

UL 508 , CSA C22.2 No.14
(UL FILE No.E243511)

- For use in Pollution Degree 2 Environment.
- Maximum Surrounding air temperature rating, 85°C.

Package & Weight Information

| Weight | Pcs/box | Pcs/carton | Pcs/pallet |
|--------|---------|------------|------------|
| 8g | 100 | 400 | 12000 |