

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

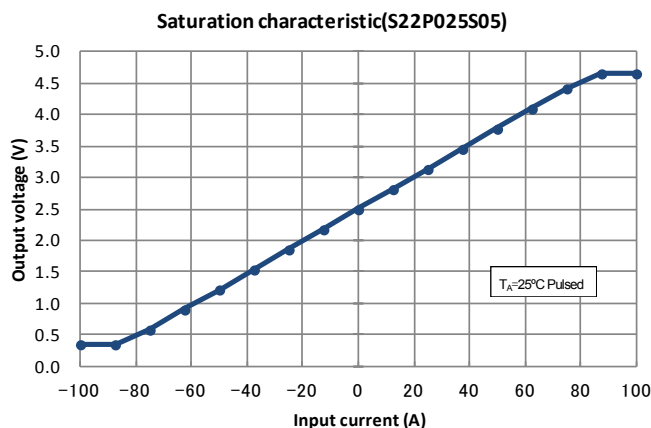
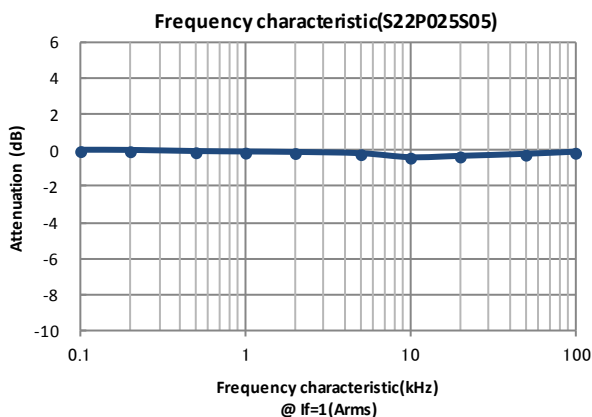
Specifications

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

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 $I_f=0\text{A}$) + 37.5mA / 22.5mA / 9mA (at $I_f = 75\text{A}$ / 45A / 18A)		
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	$-25^{\circ}\text{C} \sim +100^{\circ}\text{C}$		

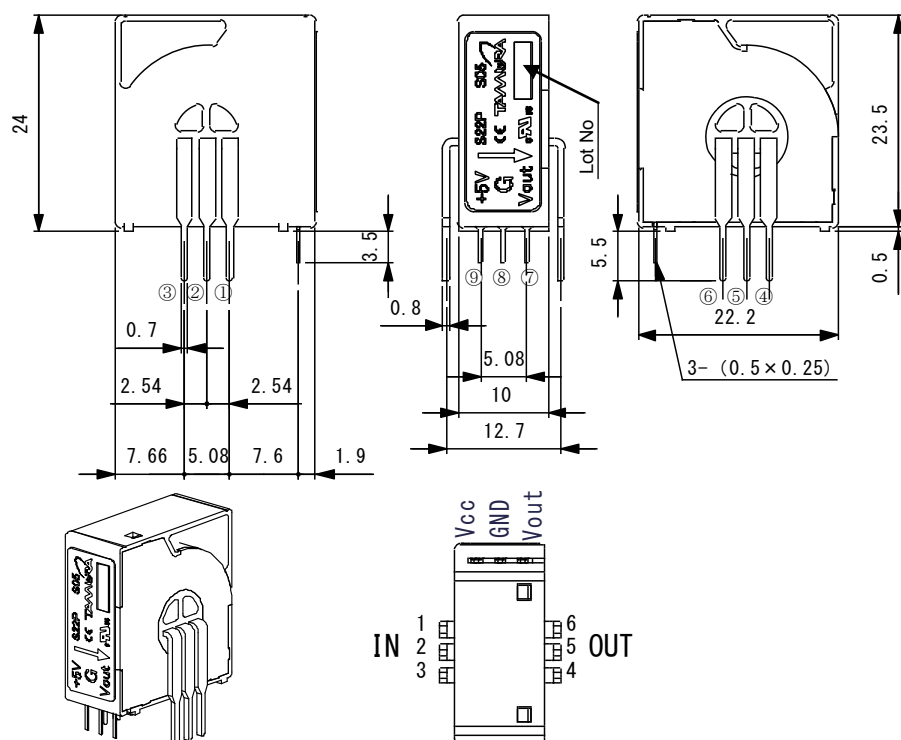
¹ After removal of core hysteresis — ² Without offset — ³ Conversion ratio 1:2000 — ⁴ Time between 90% input current full scale and 90% of sensor output full scale — ⁵ Without Thermal drift of offset

Electrical Performances



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Mechanical dimensions



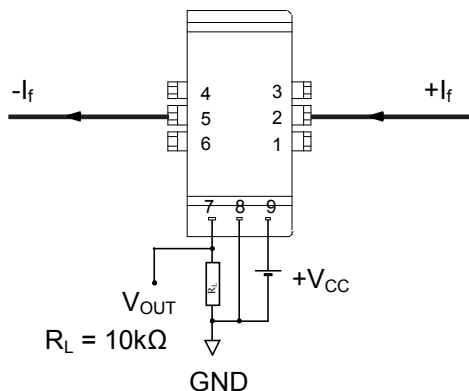
NOTES

1. Unit is mm
2. Tolerance is 0.5mm

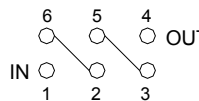
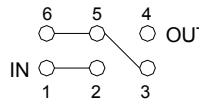
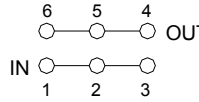
Terminal number:

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

$+I_f / 3$	
$+I_f / 2$	
$+I_f$	

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

Mouser Electronics

Authorized Distributor

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Tamura:

[S22P025S05](#) [S22P015S05](#) [S22P006S05](#)