DATA SHEET
Hall Effect Current Sensor

PN: CHK800QR365S2L	**I_{PN}=±100~±800A**

Description

CHK800QR365S2L family is a tri-phase transducer for DC, AC, or pulse currents measurement in high power and low voltage automotive applications. It offers a galvanic separation between the primary circuit (high power) and the secondary circuit (electronic circuit).

CHK800QR365S2L family gives you a choice of having different current measuring ranges in the same housing (form ±100 up to ±800A).

Feature

- Open Loop hall effect current transducer
- Low voltage application
- All in one tri-phase transducer
- Insulating plastic case recognized according to UL 94-V0.

Advantages

- Excellent accuracy
- Low power consumption
- No insertion losses
- Very good linearity
- Wide frequency bandwith
- Very fast response time

Applications

- Starter Generators
- Inverters
- HEV application
- EV application
- DC/DC converter

Type of products:

Type	Primary nominal current r. m. s I_{PN} (A)	Primary current measuring range I_P (A)
CHK800QR365S2L	800	±900

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Electrical data:

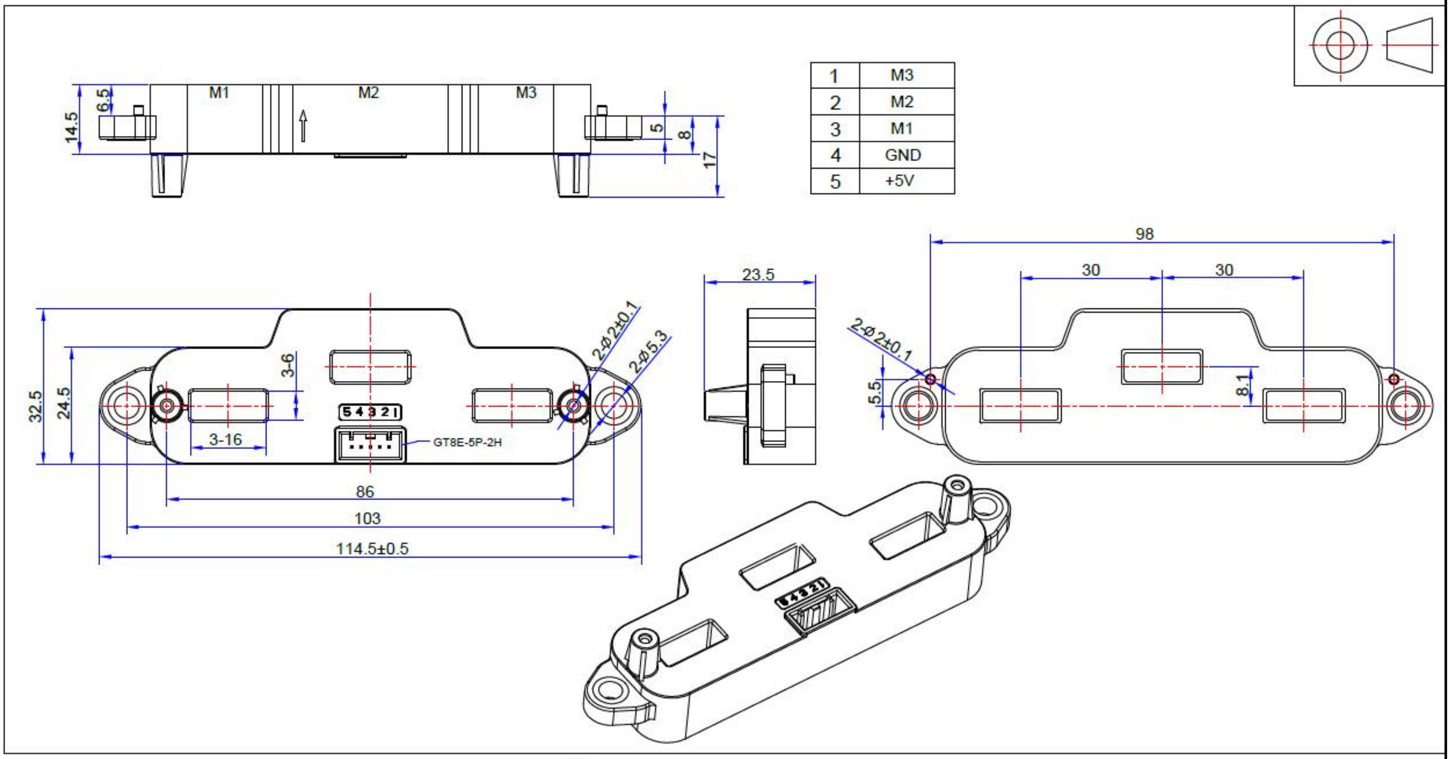
PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			MIN.	TYP.	MAX.	
Supply voltage	Uc	V	4.75	5	5.25	
Current consumption	Ic	mA	20	30	45	@T_A = 25°C
Output voltage	V_{OUT}	V	V_{OUT} =(U_C /5)*(2.5 +G*Ip)			@Uc= 5V
Sensitivity	G	mV/A	2.5			@Uc = 5V
Output Load Resistance	R_L	KΩ	4.7	-	-	@V_{OUT} to GND
Output Load Capacitance	C_L	nF	-	1	10	@V_{OUT} to GND
Accuracy - Dynamic performance data						
Accuracy	X_G	% of I_{PN}	-	0.5	-	@ I_{PN}, T_A = 25°C,Uc=5V (excluding offset)
Linearity (0…±IPN)	εL	% of I_{PN}	-1	-	1	
Electrical offset voltage	V_{OE}	mV	2.5V±10mV			@T_A = 25°C,Uc=5V
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	-0.15	0.08	0.15	@-40°C<T_A<125°C
Temperature coefficient of V_{OUT}	TCV_{OUT}	%/K	-0.04	0.015	0.04	@-40°C<TA<125°C
Response time	t_r	μS	-	3	6	@ 90% of I_{PN}
Frequency bandwidth(-3dB) (4)	BW	kHz	30		120	@-3dB
Phase shift	Δφ	o	-4		0	@DC to 1MHz
General data						
Ambient operating temperature	T_A	°C	-40…+125			
Ambient storage temperature	T_S	°C	-55…+150			
Mass	m	g	≤100g			
Isolation resistance	R_{IS}	MΩ	-	1000	-	@500VDC,ISO16750
RMS voltage for AC insulation test	Ud	kV	-	-	2.5	50 Hz, 1 min, IEC 60664 part1
RMS voltage for DC insulation test	Ud	kV	-	-	3	
Electrostatic discharge voltage	V_{ESD}	kV	-	-	8	

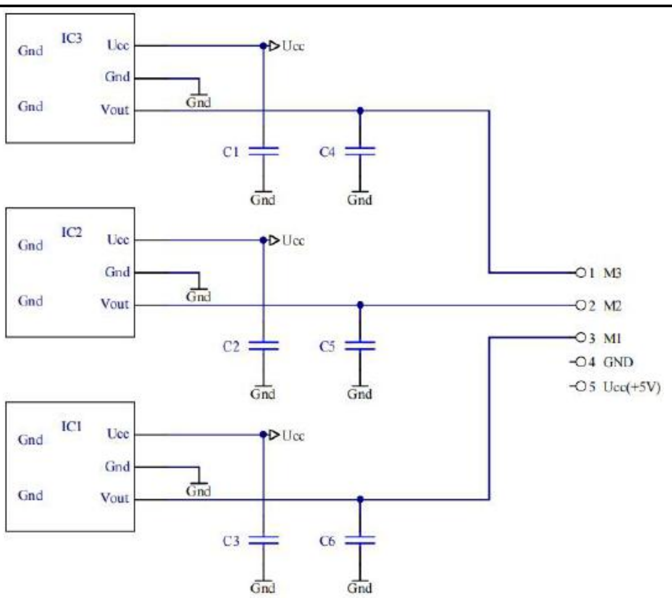
Notes:

1) The output voltage Vout is fully ratiometric. The offset and sensitivity are dependent on the supply voltage U_C relative to the following formula:

$$I_P = \left(\frac{5}{U_C} \times V_{out} - V_O\right) \times \frac{1}{G} \text{ with } G \text{ in (V/A)}$$

Dimensions(mm):



Electronic schematic	Bill of Materials
	Plastic case : PA66+30%GF
	Magnetic core: FeSi
	Electrical terminal coating: tin plated
	Mounting recommendation
	Assembly torque max Busbar TBD Body TBD
	General tolerance
Remark: Vout ＞ Vo when Ip flows in the positive direction (see arrow on drawing).	General tolerance:< ±0.5mm

Remarks:

- When the primary current Ip flows in the direction of the positive arrow, the output voltage Uout is greater than the offset voltage Uo (refer to the arrow marked on the drawing.
- The dynamic performance (di/dt and response time) is the best when the busbar is fully filled with primary perforation.
- Sensors with different rated input currents and output voltages can be customized according to user needs.

WARNING : Incorrect wiring may cause damage to the sensor.

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