

Automotive Current Sensors Solutions

“Shunt Resistors and Redundant Dual Current Sensor Modules for Safety and Precision Current Measurement in Automotive Applications”

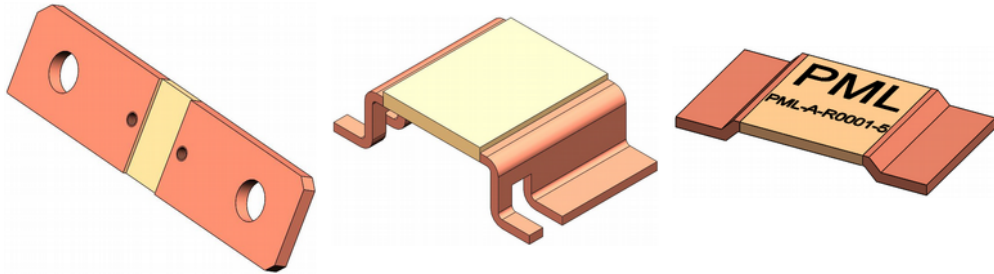
Overview of Available Products

Jan/2018

P. Krummenacher

Automotive Current Sensors Solutions

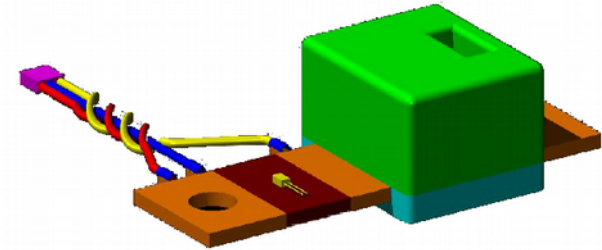
Standard Automotive Cu-Mn Shunt Resistors



Applications

- Current measurement
- Power inverters and IGBT modules
- Battery Management Systems (BMS)
- High power, high current
- Direct bonded copper and PCB assembly

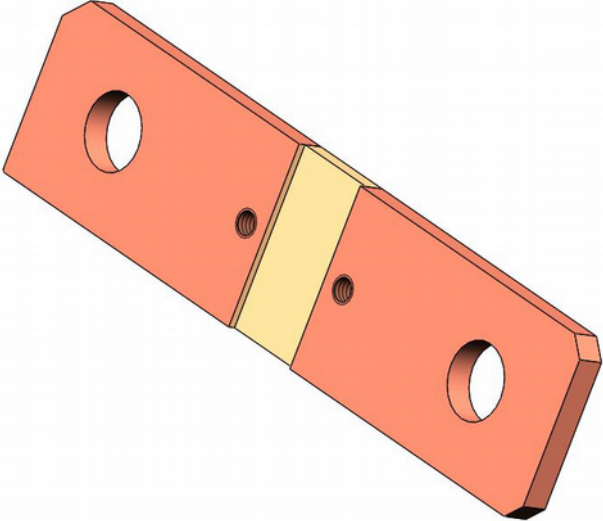
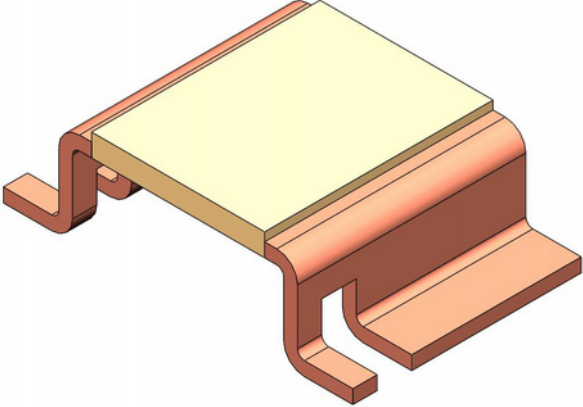
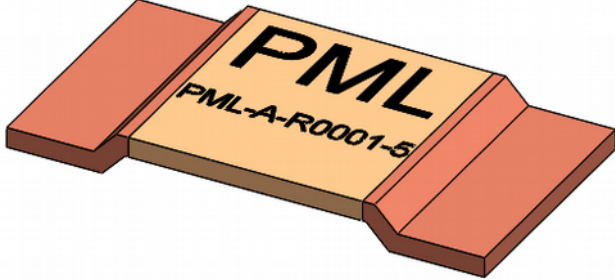
Redundant Dual Current Sensor Modules



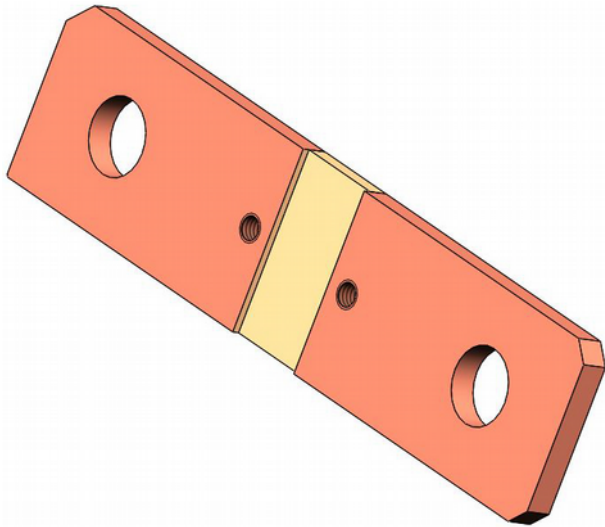
Applications

- Functional Safety
- Battery Management Systems (BMS)
- Junction Box
- High power, high current

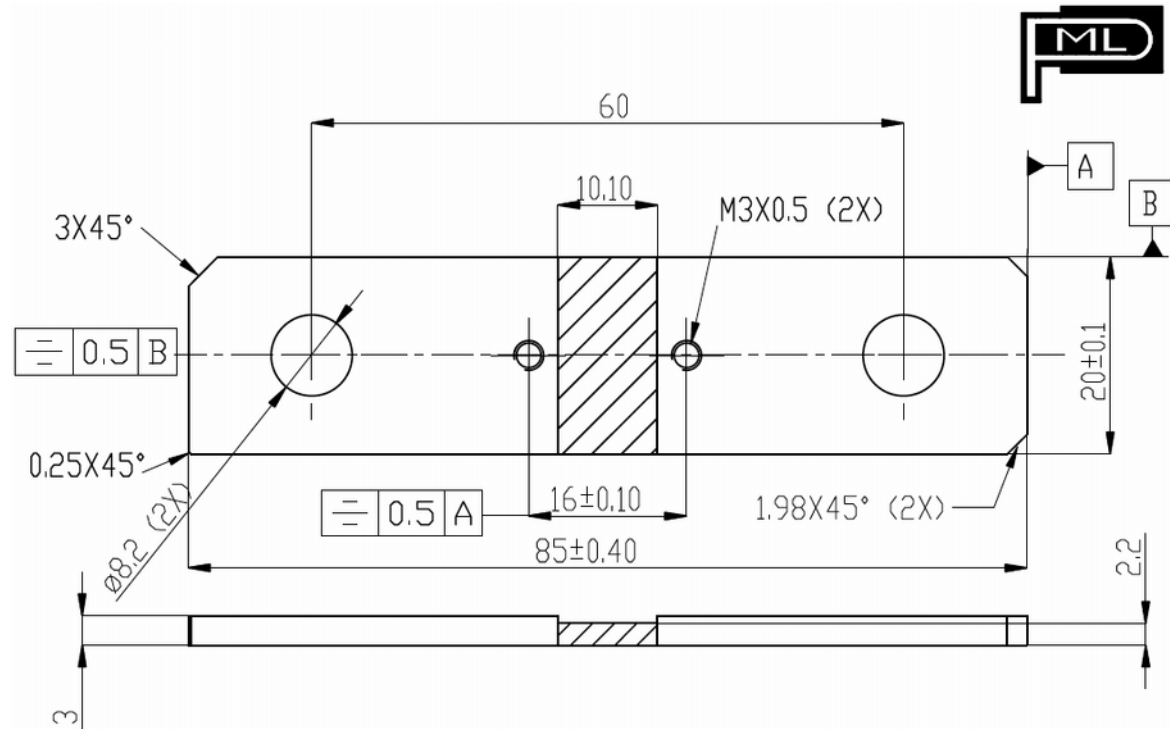
Standard Automotive Shunt Summary

R100-BAR-03	R500-BRI-04	R1000-SMD-05
$\pm 600A$ 36W	$\pm 150A$ 12W	$\pm 70A$ 5W
		
<ul style="list-style-type: none">• Battery monitoring• Battery mgmt systems• eMobility, HEV, EV	<ul style="list-style-type: none">• Power inverters• IGBT modules• Direct bonded copper	<ul style="list-style-type: none">• Current sensing• e-motorbike• PCB assembly

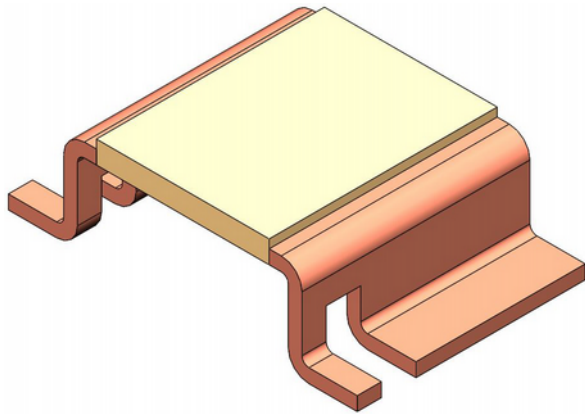
R100-BAR-03



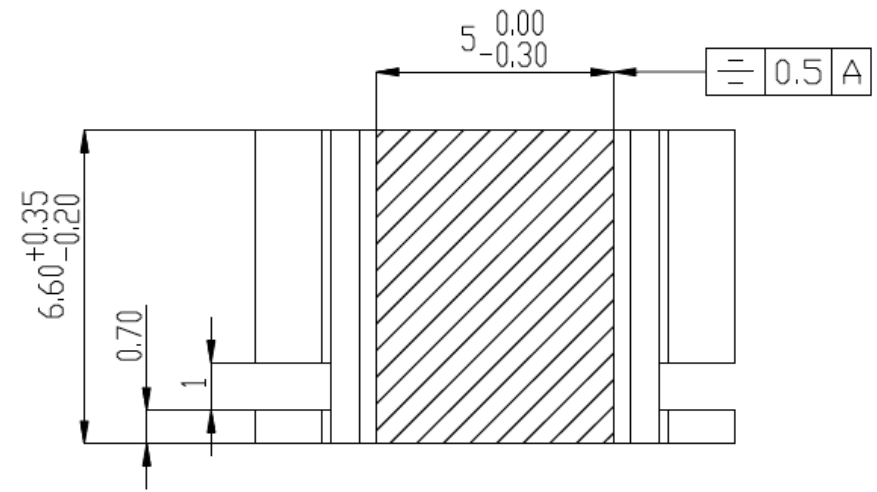
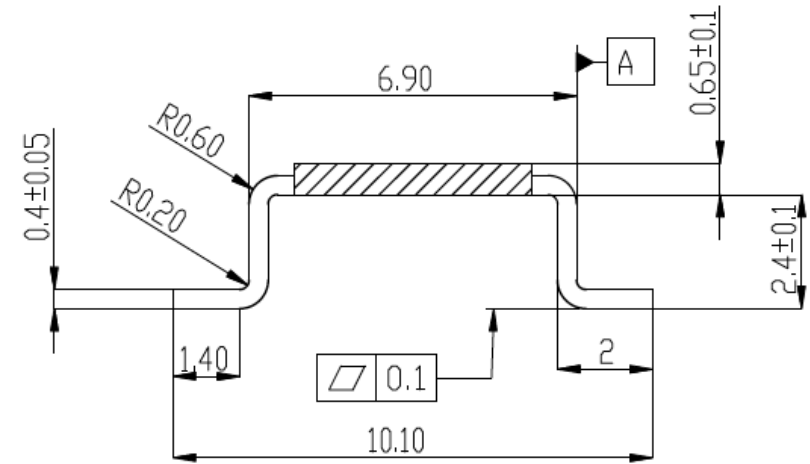
Std resistance 100 $\mu\Omega$ *
TCR <50 ppm/K
*available 50 $\mu\Omega$... 250 $\mu\Omega$
Max. power 36 W



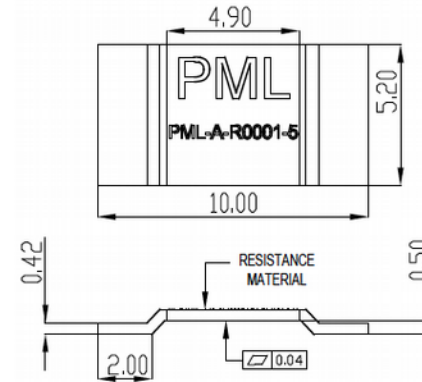
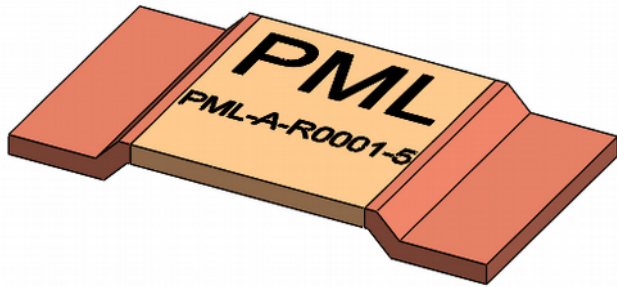
R500-BRI-04



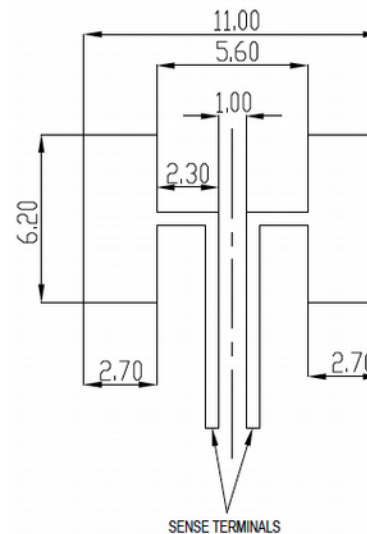
Std resistance	500 $\mu\Omega$ *
TCR	<50 ppm/K
*available	200 $\mu\Omega$... 3 m Ω
Max. power	12 W



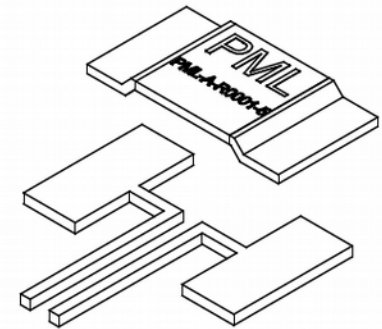
R1000-SMD-05



SMD SHUNT

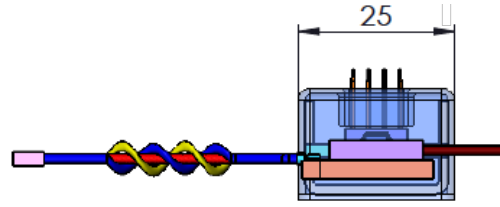
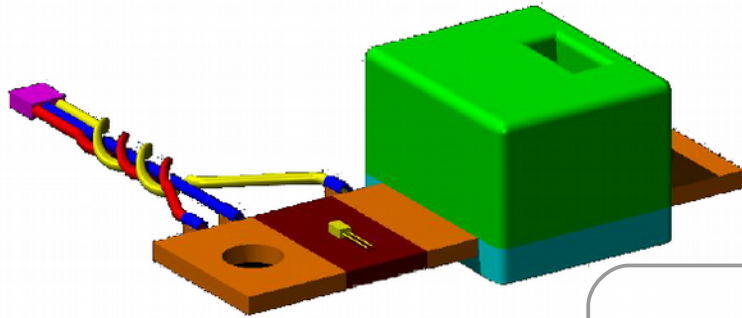


PCB LAYOUT

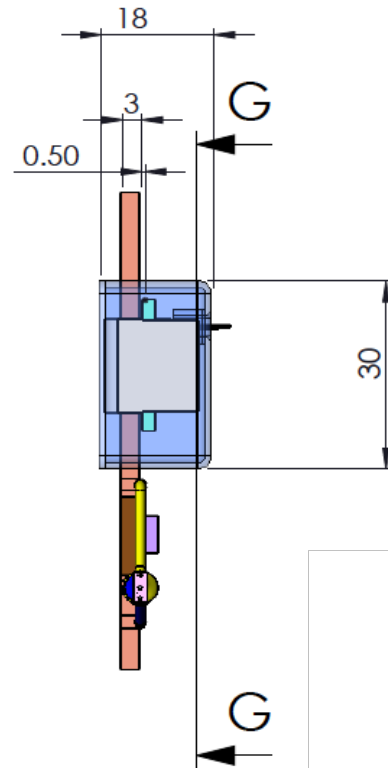
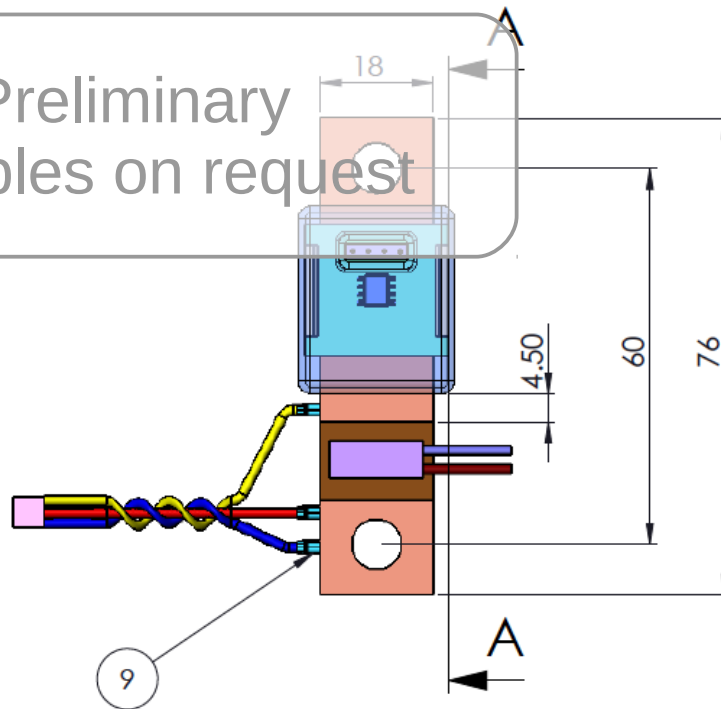


Std resistance	1000 $\mu\Omega$ *
TCR	<50 ppm/K
*available	200 $\mu\Omega$... 3 m Ω
Max. power	5 W

Dual Current Sensor Module HSM-800



Preliminary
Samples on request



Typ. current

±500 A

Shunt resistor

Cu-Mn

Std resistance

100 $\mu\Omega^*$

TCR

<50 ppm/K

*available

50 $\mu\Omega$... 250 $\mu\Omega$

Max. power

36 W

Hall sensor

MLX91208

Output voltage

2000 mV

Sensitivity

4 mV/A

Temperature sensor

PT100

Conclusions

- Automotive current sensors solutions
 - + High precision current measurement with shunt resistors
 - + Redundant dual current sensor modules for functional safety
- Applications include
 - + Precision current measurement
 - + Battery monitoring, battery management systems
 - + eMobility, HEV, EV
 - + Power inverters, IGBT modules
- Assembly types: Direct bonded copper (DBC), PCB, and many more

Thank you for choosing
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