

Since 1960

PML Permanent Magnets Limited

Automotive Shunt Resistors

PML's shunt resistors deliver accurate, low-inductance current measurement for battery management systems, power inverters, energy meters, and IGBT modules. All products feature copper busbar or SMD construction with ± 50 ppm/K temperature coefficient and operate from -50 °C to $+150$ °C.

Model	R	Cont. Power	Max Power	Inductance	Accuracy	TCR	Operating Temp	Form Factor
R100-01	100 $\mu\Omega$	7 W	36 W	—	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	Busbar, hole terminals
R100-BAR-03	100 $\mu\Omega$ *	7 W	36 W	<5 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	Busbar, hole terminals
R100-BAR-03B	100 $\mu\Omega$ *	7 W	36 W	<5 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	Busbar, hole terminals + solderable pins
R50-BAR-03B	50 $\mu\Omega$ *	7 W	36 W	<5 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	Busbar, hole terminals + solderable pins
R50-BAR-04B	50 $\mu\Omega$ *	15 W	60 W	<5 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	Busbar, hole terminals + solderable pins
R500-BRI-04	500 $\mu\Omega$ *	5 W	12 W	<3 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	Copper terminals (DBC/IMS)
R1000-SMD-05	1000 $\mu\Omega$ *	5 W	—	<2 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	SMD 3920
R1000-SMD-06	1000 $\mu\Omega$ *	3 W	—	<2 nH	$\pm 5\%$	± 50 ppm/K	-50 to $+150$ °C	SMD 2512

*Custom resistance values available on request — see individual products below.



+91-22-68285400


sales@pmlindia.com
www.pmlindia.com


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 Opp. Silvassa Police Station, Silvassa Vapi Main Road
 Silvassa- 396 230. Dadra and Nagar Haveli (U.T.)*

CIN: L27100DN1960PLC000371



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Busbar Shunt Resistors

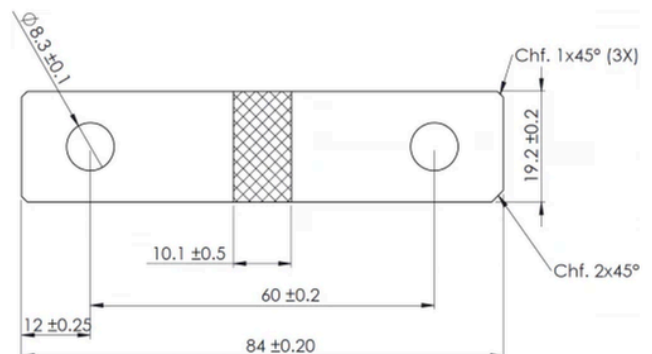
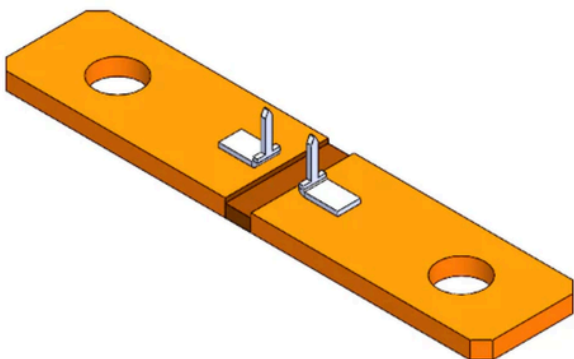
R100-01

Copper busbar shunt with hole terminals for straightforward installation. Optimised for high-precision current measurement and rated for up to 600 A peak.

Parameter	Value
Resistance	100 $\mu\Omega$
Continuous RMS Current	270 A
Maximum RMS Current	600 A
Continuous Power	7 W
Maximum Power	36 W
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temperature	-50 to +150 °C
Terminals	Hole terminals

Other values (200 $\mu\Omega$, 3 m Ω) available on request.

Applications: Energy Meters, Ampere Meters, Power Inverters, Battery Monitoring



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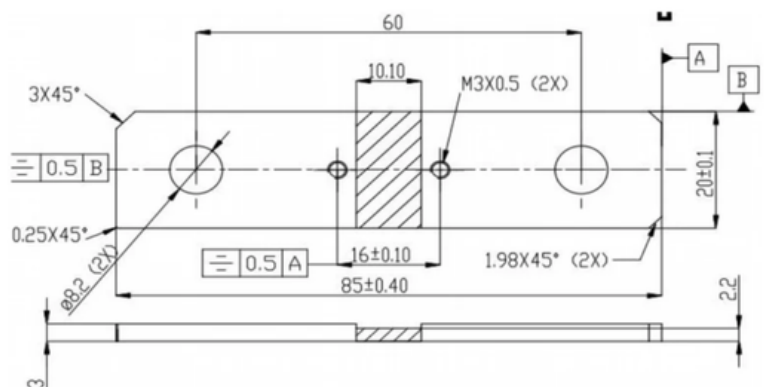
R100-BAR-03

Copper busbar with hole terminals and low inductance design for reliable current sensing in industrial and automotive systems.

Parameter	Value
Resistance	100 $\mu\Omega$ *
Continuous Power	7 W
Maximum Power	36 W
Inductance	<5 nH
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temp	-50 to +150 °C
Terminals	Hole terminals

*Range 50 $\mu\Omega$ – 250 $\mu\Omega$ available on request.

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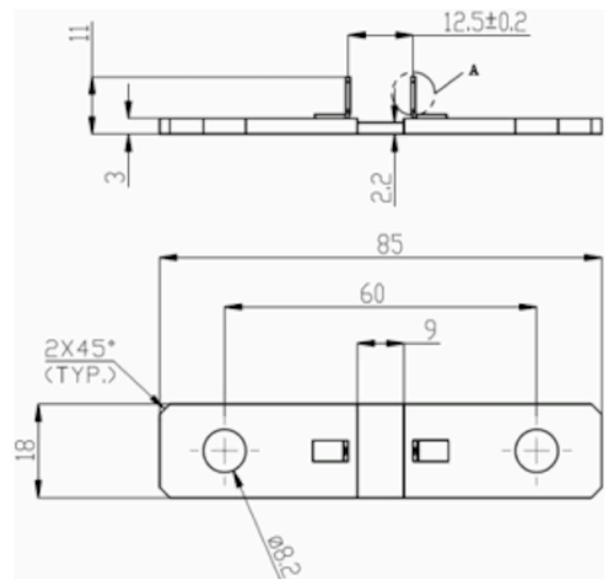
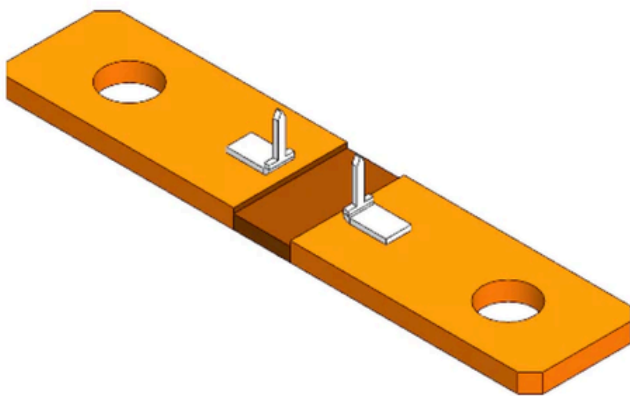
R100-BAR-03B

Copper busbar shunt featuring both hole terminals and solderable pin-type sense contacts for flexible PCB integration alongside direct bus mounting.

Parameter	Value
Resistance	100 $\mu\Omega$ *
Continuous Power	7 W
Maximum Power	36 W
Inductance	<5 nH
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temp	-50 to +150 °C
Terminals	Hole terminals + solderable pins

*Range 50 $\mu\Omega$ – 250 $\mu\Omega$ available on request.

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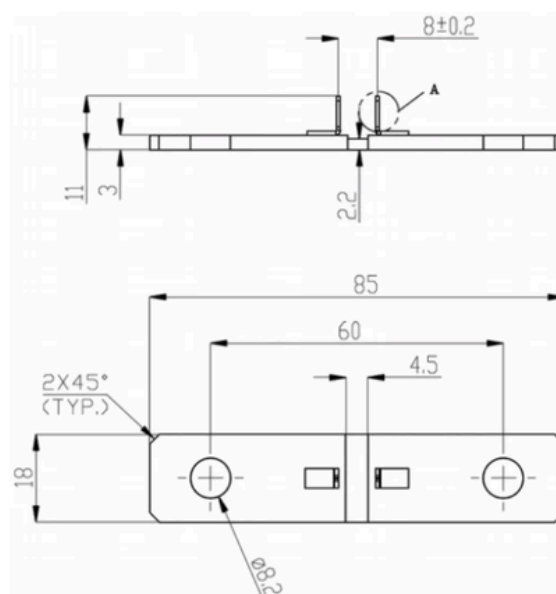
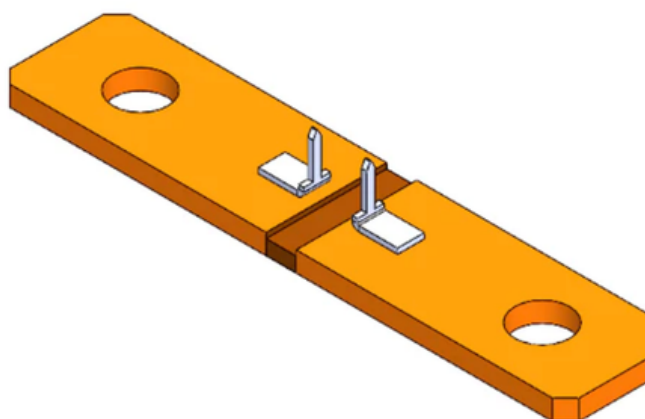
R50-BAR-03B

Lower-resistance busbar variant with hole terminals and solderable pin sense contacts. Ideal where higher current paths require minimal voltage drop.

Parameter	Value
Resistance	50 $\mu\Omega$ *
Continuous Power	7 W
Maximum Power	36 W
Inductance	<5 nH
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temperature	-50 to +150 °C
Terminals	Hole terminals + solderable pins

*Range 50 $\mu\Omega$ – 250 $\mu\Omega$ available on request.

Applications: Energy Meters, Ampere Meters, Power Inverters, Battery Monitoring



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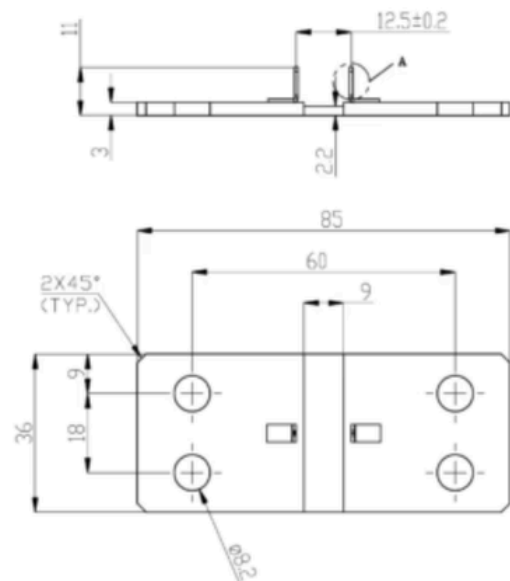
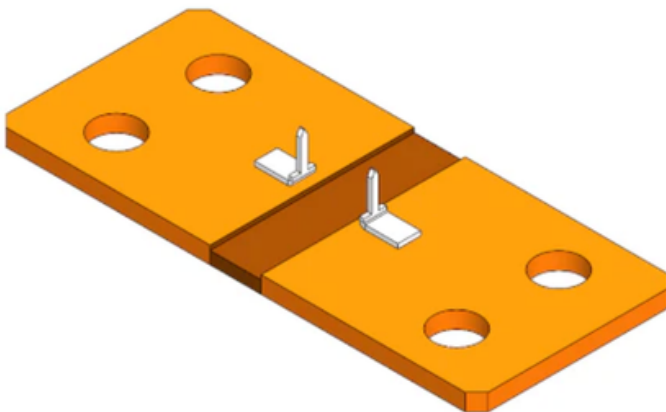
R50-BAR-04B

High-power busbar shunt with $50\ \mu\Omega$ resistance and double the continuous power rating of the 03B series. Suited to demanding high-current applications with sustained load.

Parameter	Value
Resistance	$50\ \mu\Omega$ *
Continuous Power	15 W
Maximum Power	60 W
Inductance	<5 nH
Accuracy	$\pm 5\%$
TCR	$\pm 50\ \text{ppm/K} - 50$
Operating Temperature	to $+150\ ^\circ\text{C}$
Terminals	Hole terminals + solderable pins

*Range $50\ \mu\Omega$ – $250\ \mu\Omega$ available on request.

Applications: Energy Meters, Ampere Meters, Power Inverters, Battery Monitoring



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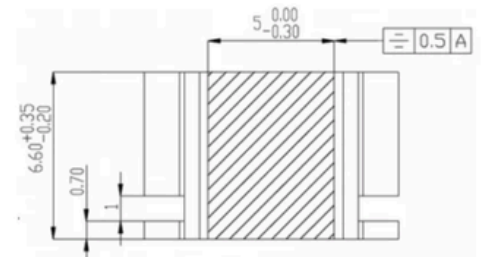
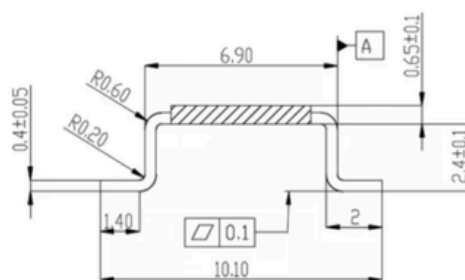
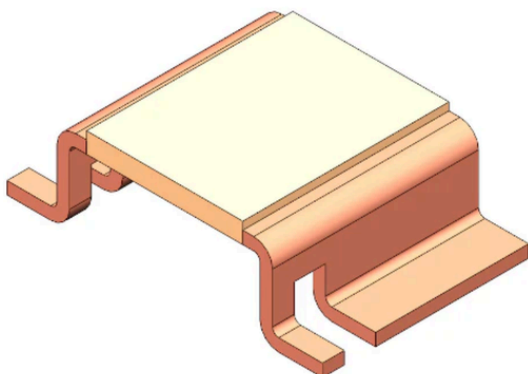
R500-BRI-04

Precision shunt with copper terminals designed for Direct Bonded Copper (DBC) and Insulated Metal Substrates (IMS). Low inductance and compact profile for IGBT module integration.

Parameter	Value
Resistance	500 $\mu\Omega$ *
Continuous Power	5 W
Maximum Power	12 W
Inductance	<3 nH
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temperature	-50 to +150 °C
Terminals	Copper terminals

*200 $\mu\Omega$ and 3 m Ω available on request.

Applications: Energy Meters, Power Inverters, IGBT Modules, Battery Monitoring, DBC Substrates, IMS



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SMD Shunt Resistors

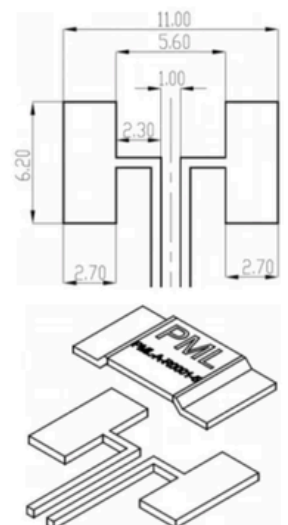
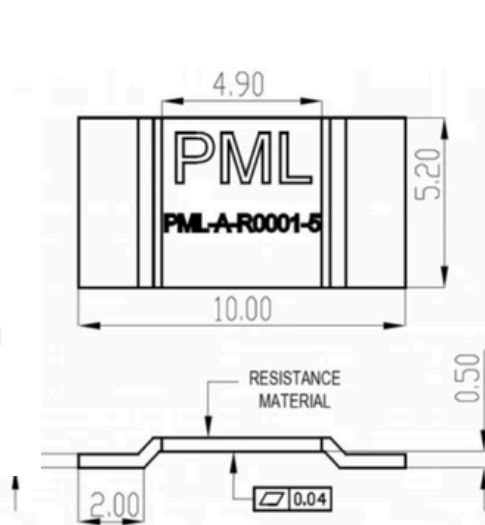
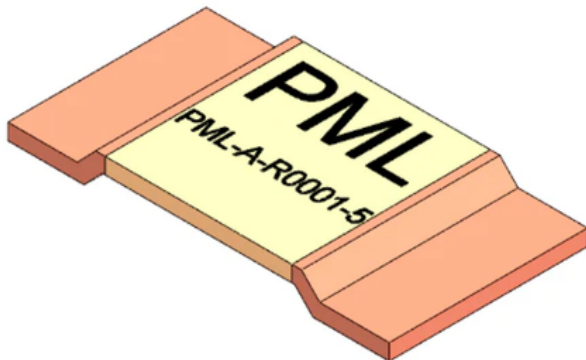
R1000-SMD-05

Surface-mount shunt in 3920 package. Combines high power handling with ultra-low inductance for precision current sensing directly on PCB substrates.

Parameter	Value
Resistance	1000 $\mu\Omega$ (1 m Ω) *
Continuous Power	5 W
Inductance	<2 nH
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temperature	-50 to +150 °C
Package	SMD 3920
Mounting	Surface mount (PCB)

*2 m Ω and 3 m Ω available on request.

Applications: Energy Meters, Ampere Meters, Power Inverters, IGBT Modules, Battery Monitoring, High-Power PCB



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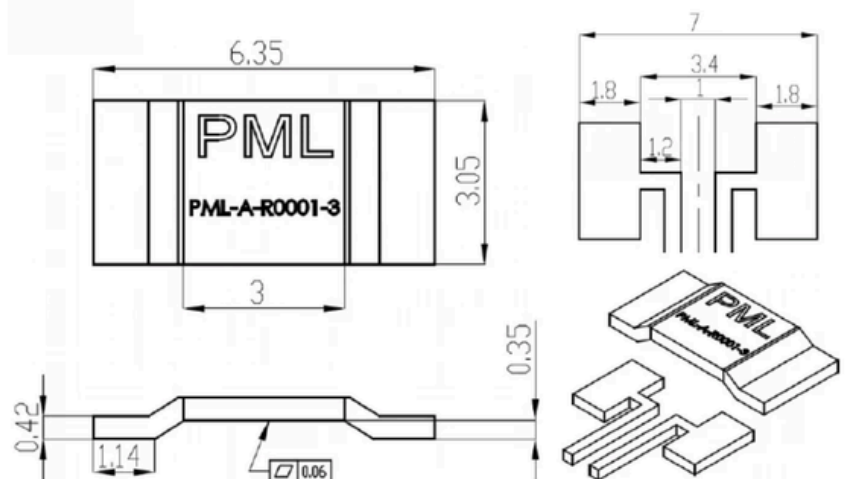
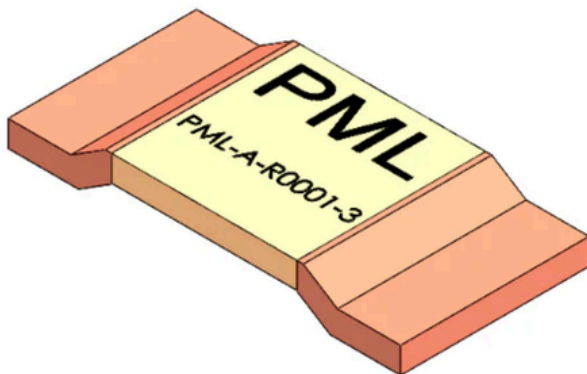
R1000-SMD-06

Compact 2512 surface-mount shunt offering the smallest footprint in the range. Ideal for space-constrained PCB designs.

Parameter	Value
Resistance	1000 $\mu\Omega$ (1 m Ω) *
Continuous Power	3 W
Inductance	<2 nH
Accuracy	$\pm 5\%$
TCR	± 50 ppm/K
Operating Temperature	-50 to +150 °C
Package	SMD 2512
Mounting	Surface mount (PCB)

*200 $\mu\Omega$ and 3 m Ω available on request.

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