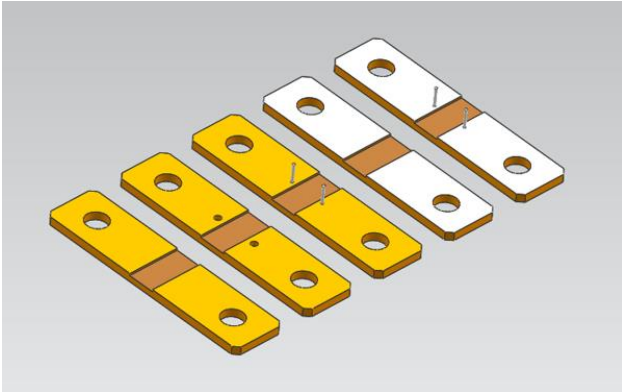


## MSR series



### ■ Features

- Up to 36W Permanent power
- High pulse power rating
- Max. fastening torque 10 Nm
- Excellent long-term stability
- RoHs compliant and halogen free
- AEC-Q200 qualification

### ■ Application

- Current sensor for EBM (Electronic Battery Management) in motorcars, trucks, forklifts, hybrid and electric vehicles
- Current sensing in bus bars
- Current sensing in welding equipments

### ■ Technical date

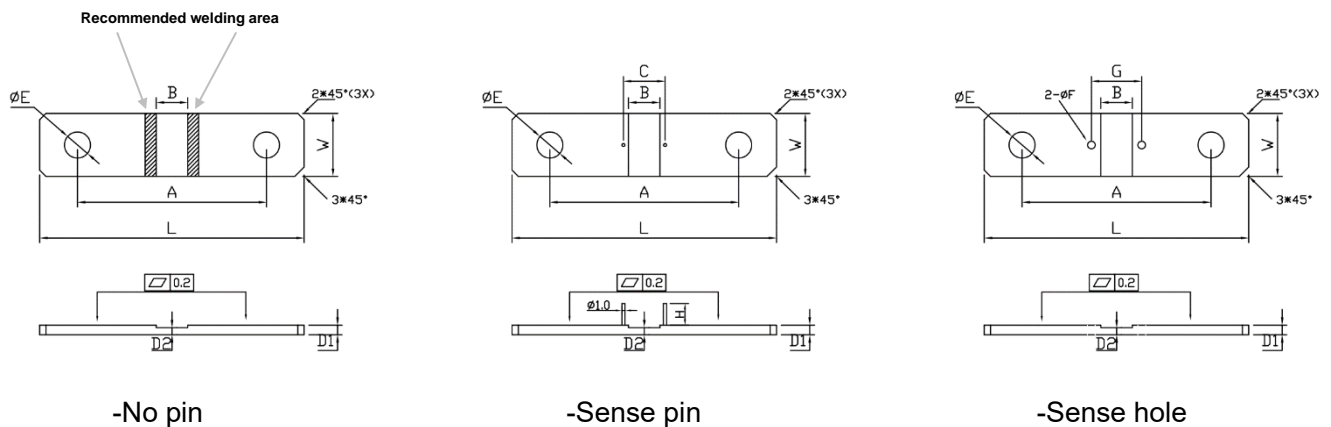
Item	Unit	Parameter
Resistance value	mΩ	0.035/0.05/0.10/0.125/0.20/0.25/0.50
Material	/	Manganin/FeCrAl
Tolerance	%	5
Temperature coefficient (20~60°C)	ppm/K	See standard electrical specifications
Applicable temperature range	°C	-55~+170
Rated power	W	See standard electrical specifications
Inductance	nH	<3
Thermal EMF	uV/K	<1
Stability (Nominal load) deviation after 2,000 h  T <sub>k</sub> = Terminal temperature	%	<0.5 (T <sub>k</sub> =110°C) <1 (T <sub>k</sub> =140°C)

### ■ Part Number Explanation

<b>MSR</b>	<b>8420</b>	<b>L050</b>	<b>J</b>	<b>U</b>	<b>SP</b>	<b>T</b>
<b>Product Type</b>	<b>Size</b>	<b>Resistance Value</b>	<b>Tolerance</b>	<b>Plating</b>	<b>Pin</b>	<b>Packing</b>
MSR	8420 8518	L035=0.035mΩ L050=0.050mΩ L100=0.100mΩ L500=0.500mΩ	J=±5%	P=Plated terminals U=Un-plated terminals	SP=Sense pin NP=No pin SH=Sense hole	B=Bulk T=Tray

## Standard Electrical Specifications

Type	Part Number	Rated Power P <sub>70</sub> /W	Rated Power P <sub>140</sub> /W	Resistance /mΩ	TCR ppm/K	Material	Applicable temperature range / °C
MSR8420	MSR8420L035	36	30	0.035	100	Manganin	-55~170
	MSR8420L050	36	20	0.05	100	Manganin	
	MSR8420L100	36	15	0.10	100	Manganin	
	MSR8420L200	24	10	0.20	50	Manganin	
	MSR8420L250	24	10	0.25	50	Manganin	
	MSR8420L500	10	4	0.50	50	FeCrAl	
MSR8518	MSR8518L050	36	20	0.05	100	Manganin	-55~170
	MSR8518L100	36	15	0.10	100	Manganin	
	MSR8518L125	36	15	0.125	100	Manganin	
	MSR8518L200	24	10	0.20	50	Manganin	
	MSR8518L250	24	10	0.25	50	Manganin	
	MSR8518L500	10	4	0.50	50	FeCrAl	

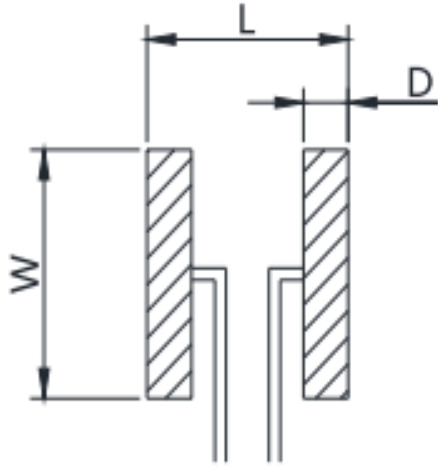


## Type Dimension

Unit: mm

Type	A (+/-0.2)	B (+/-0.5)	C (+/-0.2)	D1 (+/-0.1)	D2 (+/-0.2)	L (+/-0.3)	W (+/-0.2)	E (+/-0.2)	F (+/-0.1)	G (+/-0.2)	H (+/-0.2)
MSR8420L035	60	4.8	8.0	3.0	2.0	84	20	8.3	2.5	10.8	6.9
MSR8420L050	60	5	8.2	3.0	2.2	84	20	8.3	2.5	11	6.9
MSR8420L100	60	10	13.2	3.0	2.2	84	20	8.3	2.5	16	6.9
MSR8420L200	60	18	21.2	3.0	2.0	84	20	8.3	2.5	24	6.9
MSR8420L250	60	23	26.2	3.0	2.0	84	20	8.3	2.5	29	6.9
MSR8420L500	60	14	17.2	3.0	2.0	84	20	8.3	2.5	20	6.9
MSR8518L050	60	4.5	7.7	3.0	2.2	85	18	8.3	2.5	10.5	6.9
MSR8518L100	60	9	12.2	3.0	2.2	85	18	8.3	2.5	15	6.9

MSR8518L125	60	10.3	13.5	3.0	2.0	85	18	8.3	2.5	16.3	6.9
MSR8518L200	60	16.5	19.7	3.0	2.0	85	18	8.3	2.5	22.5	6.9
MSR8518L250	60	21	24.2	3.0	2.0	85	18	8.3	2.5	27	6.9
MSR8518L500	60	12.8	16	3.0	2.0	85	18	8.3	2.5	18.8	6.9



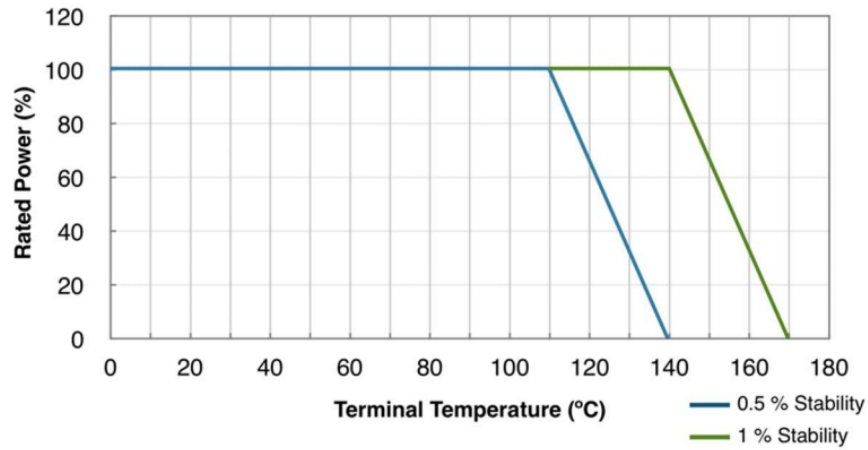
Not according to the recommended pad design, may seriously affect the current detection accuracy

■ PCB-layout proposal (For the product with no pin)

Unit: mm

Type	W	L	D
MSR8420L035	23	11.8	4
MSR8420L050	23	12	4
MSR8420L100	23	17	4
MSR8420L200	23	25	4
MSR8420L250	23	30	4
MSR8420L500	23	21	4
MSR8518L050	21	11.5	4
MSR8518L100	21	16	4
MSR8518L125	21	17.3	4
MSR8518L200	21	23.5	4
MSR8518L250	21	28	4
MSR8518L500	21	19.8	4

■ Power Derating Curve



**■ Packaging Options**

Packing method	Bulk	Tray
Specification	100 pcs per bag: vacuum sealed in plastic bags with dry nitrogen (NP-without sense pins)	35 Pcs products per tray

**■ Storage Requirement**

Temperature: 5~30°C, Humidity: 25%RH~60%RH

The product should be protected from direct sunlight

Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use

The product shall not be stored in areas where harmful gases containing sulfur or chlorine are present

Wear gloves when installing and handling the product to avoid surface oxidation

When the product is finally discarded, it can be treated as general electronic waste, and raw material compositions of CSR can be referred to MSDS