

# E-Beam Welded Shunt 8518

EBW8518



## Features:

- Electron-beam welded technology
- Low thermal EMF
- Low measurement inductance
- Robust copper terminals for busbar mounting
- AEC-Q200 qualified



All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

## Electrical Data

		EBW8518		
Power rating at 70°C	W	36		
Resistance range	μΩ	50 to 250		
Resistance tolerance	%	50μΩ: ±3, ±5	100μΩ: ±2, ±5	>100μΩ: ±1, ±5
TCR (resistive alloy)	ppm/°C	±10		
TCR (measurement)	ppm/°C	50μΩ: ±150	>50μΩ: ±100	
Standard values	μΩ	50, 100, 125, 200, 250		
Thermal EMF	μV/°C	<1		
Inductance (measurement)	nH	<5		
Ambient temperature range	°C	-65 to +170		

## Physical Data

Dimensions in mm and weight in g					
Resistance Value ( $\mu\Omega$ )	A nom.	B $\pm 0.2$	C $\pm 0.2$	Wt. nom.	
50	4.6	7.7	2.2	40.2	
100	9.1	12.2		39.5	
125	10.5	13.5	2	39	
200	16.5	19.7		38	
250	21	24.2		37.2	

## Construction

A manganese alloy resistance element is e-beam welded between two copper terminations.

## Marking

The components are unmarked.

## Plating

The component can be supplied with or without Sn plating.

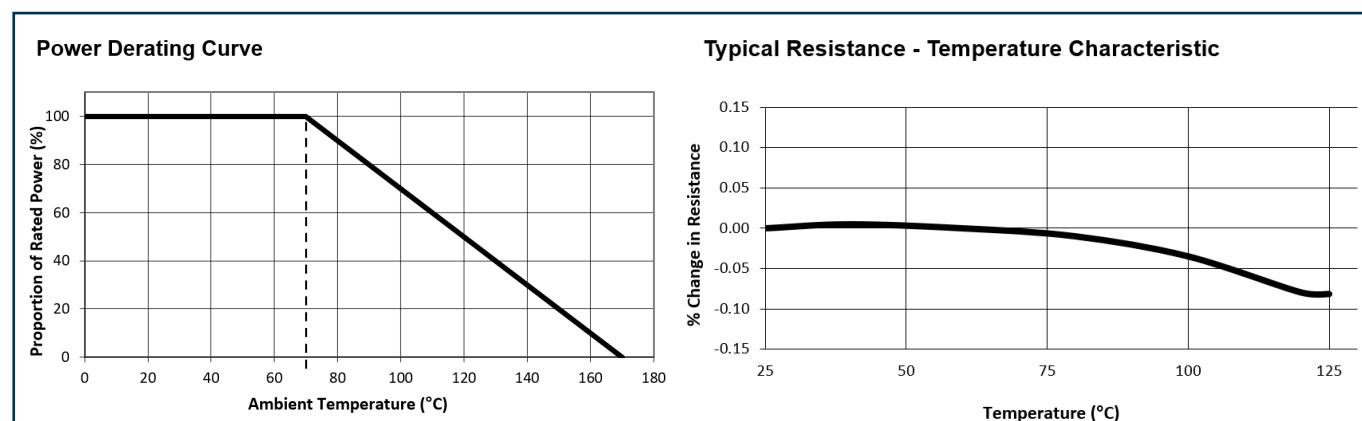
### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

## Performance Data

Test	Methods	±ΔR% max.
Load life	1000 hours, cyclic load at Pr	1
Short term overload	5 seconds, 5 × Pr	1
High temperature exposure	1000 hours, +170°C	1
Temperature cycle	1000 cycles, -55 to +150°C, 30-minute dwell	0.5
Low temperature storage	24 hours, -65°C	0.5
Biased humidity	1000 hours, 85°C/85%RH, 10% of Pr	0.5
Moisture resistance	MIL-STD-202 Method 106, no load	0.5
Vibration	MIL-STD-202 Method 204, 5g for 20 mins, 12 cycles, 10 - 2000Hz	0.2
Mechanical shock	MIL-STD-202 Method 213, 100g for 6ms, half-sine	0.2
Resistance to solder heat	MIL-STD-202 Method 210, solder dip 260°C for 10s	0.5
Solderability	J-STD-002	>95% coverage

## Thermal Performance



## Voltage Sense Terminal Style

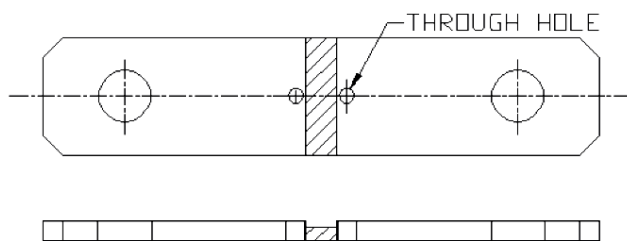
Voltage sense terminal styles listed as Standard are available to order. Those marked Custom are examples of options which can be made available on request but may incur tooling charges.

Voltage Sense Terminal Option	Style	Figure	Availability	Pitch of Voltage Sense Points or Terminals (mm)				
				50μΩ	100μΩ	125μΩ	200μΩ	250μΩ
No sense terminals	NT		Standard	7.7	12.2	13.5	19.7	24.2
Through hole Ø3.2mm	T2	1	Custom	10	14.5	15.9	21.9	26.4
Tapped hole M3 x 0.5	M3	2		11	15.5	16.9	22.9	27.4
Tapped hole M4 x 0.7	M4			10	14.5	15.9	21.9	26.4
“With dimple” location points	WD	3						
Dowel fit pins	DF	4	Standard					
Pressed pins	PP	5						
Stress-relief pins	SP	6		7.7	12.2	13.5	19.7	24.2

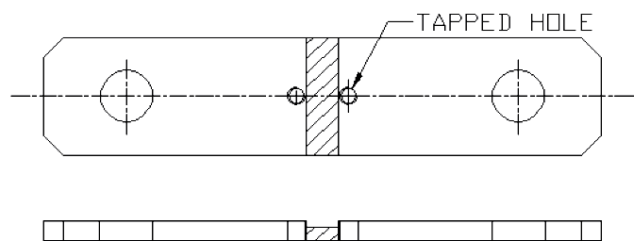
### Voltage Sense Terminal Style Figures

The centre-to-centre distance (pitch) of the voltage sense terminals varies with style and ohmic value and is shown in the preceding table. All dimensions are in mm.

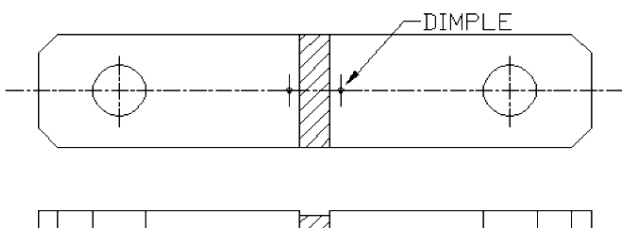
**Figure 1 – Through Hole (T2 Style)**



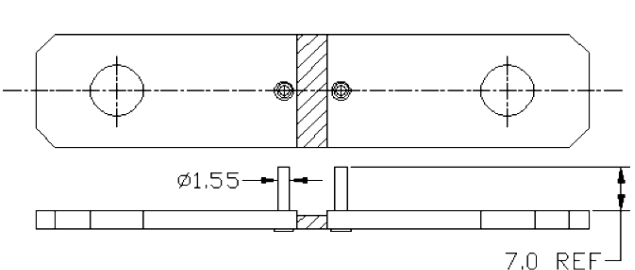
**Figure 2 – Tapped Hole (M3 & M4 Style)**



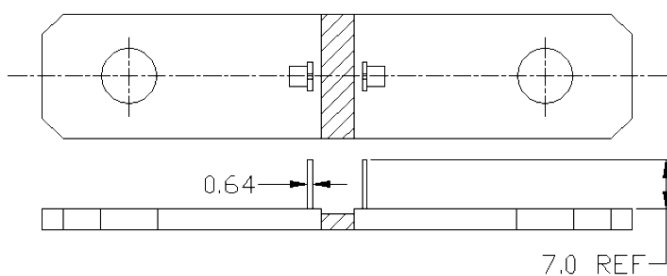
**Figure 3 – With Dimple (WD Style)**



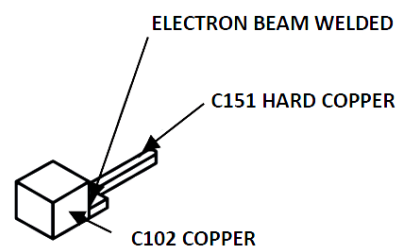
**Figure 4 – Dowel Fit Pin (DF Style)**



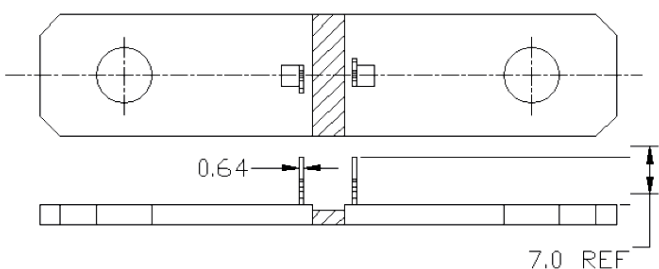
**Figure 5 – Pressed Pin (PP Style)**



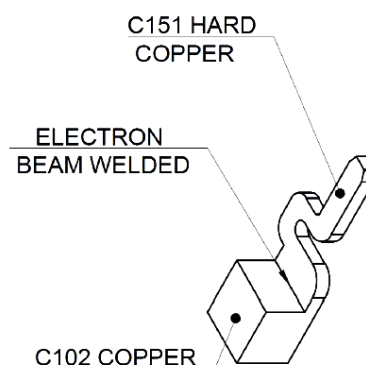
**PP Style Pin Detail**



**Figure 6 – Stress-relief Pin (SP Style)**



**SP Style Pin Detail**



### Packaging

Unplated EBW8518 shunts without voltage sense pins are supplied bulk packed in vacuum sealed plastic bags of 100 pieces. Plated parts without voltage sense pins may also be supplied in bulk but tray pack is standard. Parts with voltage sense terminal pins are tray packed. Recommended storage conditions for packed parts are: temperature 25 to 35°C, humidity 30 to 80% RH.

### Ordering Procedure

**Example: EBW8518PNT-L050JT** (50 micro-ohms  $\pm 5\%$ , plated, no sense terminals, tray packed, Pb-free)

E	B	W	8	5	1	8	P	N	T	-	L	0	5	0	J	T
1	2	3	4	5	6	7										

1 Type	2 Size	3 Finish	4 Sense Style	5 Value	6 Tolerance		7 Packaging		
EBW	8518	P = Sn plated	NT = No terminals	L050 = 50 $\mu\Omega$	F = $\pm 1\%$	>100 $\mu\Omega$	Unplated		B = Bulk
		U = Unplated	PP = Pressed pins	L100 = 100 $\mu\Omega$	G = $\pm 2\%$	100 $\mu\Omega$	Plated	NT, T2, M3, M4, WD	T = Tray (standard)
			SP = Stress-relief pins	L125 = 125 $\mu\Omega$	H = $\pm 3\%$	50 $\mu\Omega$			B = Bulk (optional)
			Request availability of custom styles	L200 = 200 $\mu\Omega$	J = $\pm 5\%$	All values			
				L250 = 250 $\mu\Omega$			Either	DF, PP, SP	T = Tray