

CSB Series Datasheet

PERFORMANCE DATA

Type		CSB251	CSB392	CSB593
Derating Linear	[°C]	70...170 (0W)		
Short Time Overload <i>(U=5 * √P₇₀ × R 5[s])</i>	±[%]	1,0		
Resistance to Soldering Heat <i>IEC60115-1 clause 4.18 (260^{±5} [°C], 3,5^{±1} [s])</i>	±[%]	N.A.		
Low Temperature Storage <i>-65[°C] 24[H]</i>	±[%]	0,2		
High Temperature Exposure <i>Mil-STD-202 Method 108 +170[°C] 1000[H]</i>	±[%]	1		
Rapid change of temperature <i>IEC60115-1 clause 4.19 and IEC60068-2-14 (30 [min] -55 [°C] and 30 [min] +150 [°C])</i>	±[%]	0,5		
Biased Humidity <i>MIL-STD-202 Method 103 (85[°C], 85[%RH] 1.000[h])</i>	±[%]	0,5		
Vibrations <i>Mil-STD-202 Method 204 (10 to 2000 [Hz], 5 [G] for 20 [min], 12 cycles, each of 3 orientation)</i>	±[%]	0,2		
Mechanical Shock <i>Mil-STD-202 Method 213 (100 [G], 6[ms], Half sine)</i>	±[%]	0,2		
Solderability <i>IEC60068-2-20 and J-STD-002</i>		Solder bath method (> 95% coverage)		
Stability deviation <i>* Tt = Terminal Temperature</i>	±[%]	< 0.5 after 2000 Hours * T _t = 110°C		
		< 1.0 after 2000 Hours * T _t = 140°C		

ELECTRICAL SPECIFICATIONS

Type	Value [mΩ]	Resistance values	Thickness t [mm]	TCR [ppm]	P ₇₀ [W]	P ₁₀₀ [W]	Material	Resistive alloy TCR [ppm]
CSB251 [AA = Standard]	0.0	R0	0.42	---	---	---	Tin Plated Copper	----
	0.3	L3	0.95	< 100	4.3	3.0	Copper Manganese MC2Alloy	<±10
	0.5	L5	0.85	< 75	4.3	3.0	Copper Manganese 43 Alloy	
	1.0	R001	0.42	< 50	4.3	3.0		
	1.3	1L3	0.33		4.3	3.0		
	2.0	R002	0.67		4.3	3.0		
	3.0	R003	0.45		2.9	2.0	Aluchrom Alloy	
	4.0	R004	0.33		2.9	2.0		
	5.0	R005	0.33		2.1	1.5		
	6.8	6L8	0.33		2.1	1.5		
10	R01	0.33	1.4		1.0			

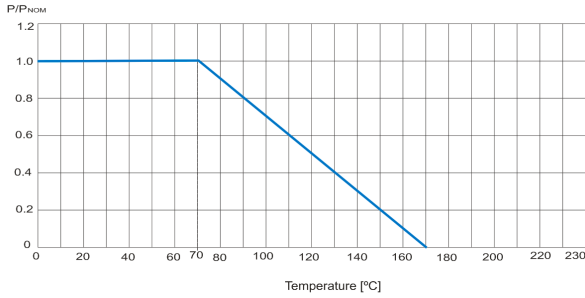
Type	Value [mΩ]	Resistance values	Thickness t [mm]	TCR [ppm]	P ₇₀ [W]	P ₁₀₀ [W]	Material	Resistive alloy TCR [ppm]
CSB392 [AA = Standard]	0.2	L2	1,42	< 150	12	5	Copper Manganese MC2Alloy	<±10
	0.3	L3	1,42	< 100	10	5	Copper Manganese 43 Alloy	
	0.5	L5	0,84	< 70	9	5		
	0.7	L7	0,60	< 60	8	5		
	1.0	R001	0,42	< 50	7	4	Aluchrom Alloy	<-25
	1.5	1L5	0,91		7	4.5		
	2.0	R002	0,68		6	4		
	2.5	2L5	0,54		5	3.5		
	3.0	R003	0,45		5	3		
	4.0	R004	0,34		4	2,5		
5.0	R005	0,27		3	2			

Type	Value [mΩ]	Resistance values	Thickness t1t2	TCR [ppm]	P70 [W]	P100 [W]	B [mm]	Material	Resistive alloy TCR [ppm]
CSB593 [AA = Standard]	0.1	L1	1,421,42	< 100	15	10	3,7	Copper Manganese MC2Alloy	<±10
	0.2	L2	1,401,40		15	10	5,0	Copper Manganese 43 Alloy	
	0.3	L3	0,930,93		10	7	5,0		
	0.4	L4	0,720,72		9	6,5	5,0		
	0.5	L5	0,560,56	< 75	8	6	5,0	Copper Manganese 43 Alloy	<±10
	0.6	L6	0,470,47	< 50	8	6	5,0		
	1.0	R001	0,910,91		9	6	5,0		
	2.0	R002	0,460,70		7	4	5,0	Aluchrom Alloy	<-25
CSB593 [S0 = Special]	0.5	L5	1,621,42	< 75	10	7	4,4	Aluchrom Alloy	<-25

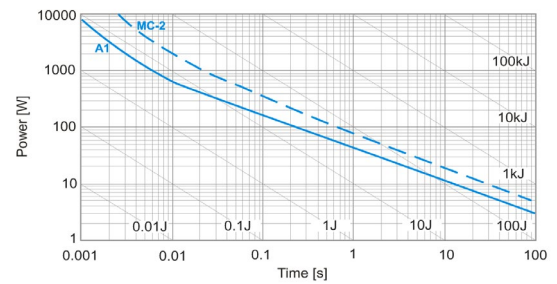
CSB Series Datasheet

PERFORMANCE GRAPHS

Power Derating Curve

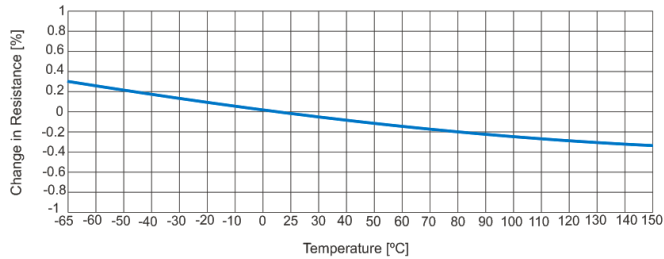


Pulse Power Curve



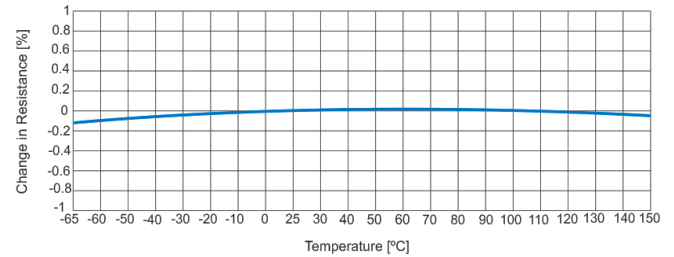
Resistance Change vs Temperature

Typical Resistance Drift (A1 Alloy)



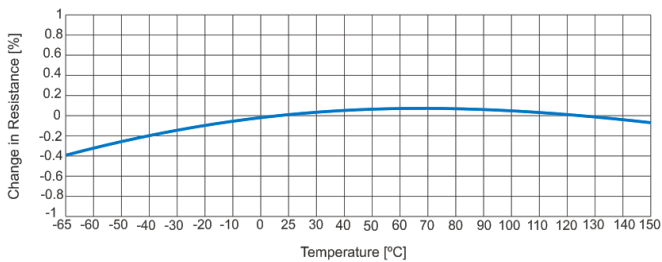
Resistance Change vs Temperature

Typical Resistance Drift (Copper Manganese MC-2)



Resistance Change vs Temperature

Typical Resistance Drift (Copper Manganese 43 Alloy)



MARKING

The resistors marking will follow below concept:

4 digits where "R" designates the decimal location in ohms, e.g. 1mΩ the product marking is R001.

4 digits where "m" designates the decimal location in milli-ohms, e.g. 0.2mΩ the product marking is 0m2, 0.5mΩ the product marking is 0m50.

0.2mΩ , 0.3mΩ , 0.5mΩ



The "m" is used as a decimal point ; the other 3 digits are significant and the unit is milliohm 0.2mΩ to 0.5mΩ

1 ~ 4mΩ

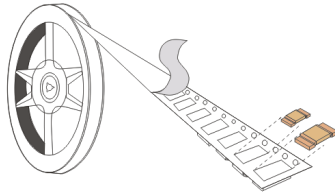


The "R" is used as a decimal point ; the other 3 digits are significant 1mΩ to 4mΩ

CSB Series Datasheet

PACKAGING

The standard packaging CSB dimensions below (blister tape [mm]).



Tape and reel information			
Specification : IEC60286-3			
	Tape width [mm]	Reel size	Parts per reel
CSB251	12	330 = 13"	5000
CSB392	16		3000
CSB593	24		2000