

[Preliminary version]

## TCS Series Current Sensing Resistors

AEC-Q200 Qualified

These components are four-terminal, bus-bar, metal strip current shunts and are welded by electron beam. Also they can absorb a high pulse power rating and have very low inductance. They also feature excellent long term stability, less than  $\pm 100\text{ppm}/\text{C}$  TCR, and have excellent frequency characteristics. Applications include: Battery charging current control of automotive electronics, current detection in precise power sources, constant current sources, industrial power conversion circuits, HEVs, fuel cells and constant electronic loads.



### GENERAL SPECIFICATIONS

Special Model	*Max. Power Rating [W] (*At terminal temp. $\leq 70^\circ\text{C}$ )	Resistance [ $\Omega$ ]*	Continuous current[A] at 0.1m $\Omega$ (*At terminal temp. $\leq 110^\circ\text{C}$ )	Resistance Tolerance
TCS 5216	12	0.1m	200	J [ $\pm 5\%$ ]
TCS 6018	15		245	
TCS 8118	30		316	
TCS 8518	36		350	
TCS 8420	36		350	

\* Referring to power derating curve

\* Also available in extended ohmic ranges of 0.05m $\Omega$  to 0.5m $\Omega$

### CHARACTERISTICS

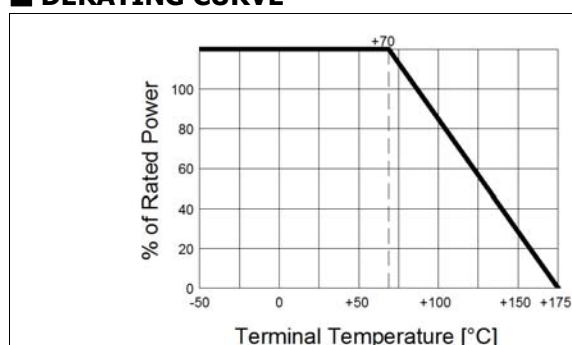
Operating Temperature	-55 $^\circ\text{C}$ ~+170 $^\circ\text{C}$	
Temperature Coefficient	(+20 $^\circ\text{C}$ and +60 $^\circ\text{C}$ ) Max. $\pm 100\text{ppm}/\text{C}$	
High temperature exposure	$\Delta R \leq \pm 1\%$	+125 $^\circ\text{C}$ , 1000 hrs
Temperature cycle	$\Delta R \leq \pm 1\%$	-55 $^\circ\text{C}$ (30 min.) to +125 $^\circ\text{C}$ (30 min.) 1000 Cycles, 1 min. Max. transition time.
Resistance to solvent	$\Delta R \leq \pm 1\%$	OKEM Clean or equivalent.
Vibration	$\Delta R \leq \pm 0.5\%$	10-2000 Hz, 5 g's for 20 min., 12 cycles each of 3 orientations.
Operational Life	$\Delta R \leq \pm 1\%$	Rated power, 1.5hours "On" 0.5hours "Off", for 1,000hours. (TA=20 $^\circ\text{C}$ , Terminal temp. $\leq 70^\circ\text{C}$ )

### DIMENSIONS (mm)

Model	Dimensions [mm]							
	A $\pm 1$	B $\pm 0.5$	C $\pm 0.1$	D $\pm 0.5$	E $\pm 0.3$	F $\pm 0.5$	G $\pm 0.5$	
TCS 5216	52.0	16.0	3.0	33.7	6.2	15.3	7.2	
TCS 6018	60.0	18.0	3.0	42.0	6.6	17.1	9.0	
TCS 8118	81.0	18.0	3.0	63.0	6.6	17.1	9.0	
TCS 8518	85.0	18.0	3.0	60.0	8.3	17.1	9.0	
TCS 8420	84.0	20.0	3.0	60.0	8.3	18.1	10.0	

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TCS 8518	85.0	18.0	3.0	60.0	8.3	17.1	9.0
TCS 8420	84.0	20.0	3.0	60.0	8.3	18.1	10.0

### DERATING CURVE



### ORDERING PROCEDURE EXAMPLE

TCS 8118	H	R0001	J
Model #	Voltage sensing H : Hole type T : Tap type P : Pin type N : Non type	Resistance Value	Tolerance

Please ask RARA for more info on this.