

# Surface Mount Sense Resistors

OARS, OARS-XP, OARSZ Series

- Flexible leads for thermal expansion
- Open-air design reduces PCB heating
- Values down to 1m
- Element TCR  $\pm 20\text{ppm}/^\circ\text{C}$
- Zero-ohm 65A jumper version
- RoHS compliant



## Electrical Data

		OARS1	OARS-XP
Power rating at 25°C	watts	2	4
Power rating at 85°C	watts	1	2
Resistance range	ohms	R002 to R050	R001 to R025
Resistance Tolerance	%	$\leq R002: 5, > R002: 1, 5$	
Standard Values (Enquire for unlisted values)	milliohms	2, 3, 4, 5, 10, 15, 20, 22, 25, 30, 40, 50	1, 2, 2.5, 5, 7.5, 10, 20, 25
Inductance	nH	<10	
Ambient temperature range	°C	-55 to +160	

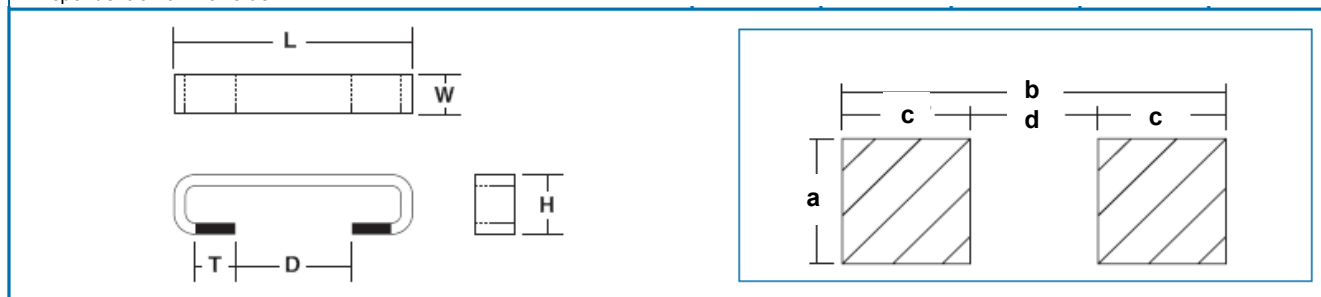
		OARS-1Z	Comments
Current rating at 25°C	amps	65	Zero-ohm jumper
Current rating at 85°C	amps	46	
Ambient temperature range	°C	-55 to +160	

## Physical Data

Dimensions (mm) and recommended solder pads

Type	L	H	T	D	W	a nom.	b nom.	c nom.	d nom.
OARS1 >R003, OARS-1Z	11.18 $\pm 0.38$	3.05 $\pm 0.76$	2.36 $\pm 0.25$	4.83 $\pm 0.76$	3.18 $\pm 0.38$	4.07	9.37	3.07	3.23
OARS1-R003		3.51 $\pm 0.76$							
OARS1-R002	11.56 $\pm 0.38$	4.83 $\pm 0.76$		6.35 $\pm 0.38$	7.24	9.58			
OARS-XP	10.7 to 12.0*	2.28 to 4.57*							

\* Dependent on ohmic value



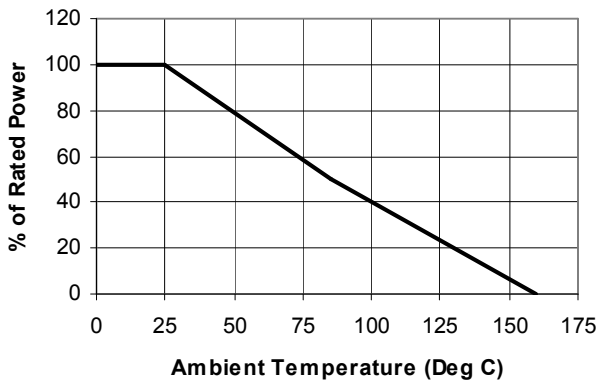
## General Note

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 (AEC-Q200)**

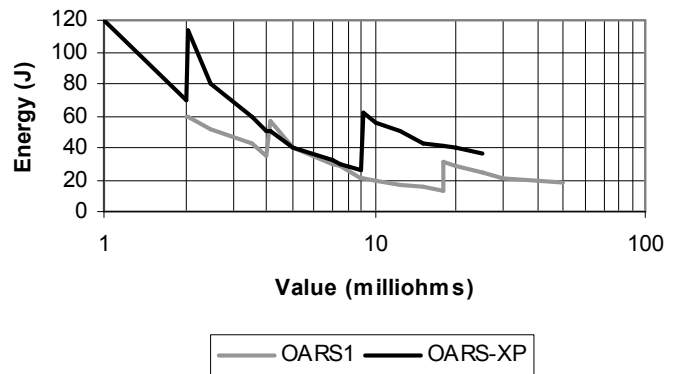
	OARS1	<R004	R004 to R015	>R015
	OARS-XP	<R002	R002 to R007	>R007
TCR (-55 to 125°C)	ppm/°C	240	40	40
Thermal Shock	ΔR%	0.75	0.75	0.75
High Temp. Exposure (125°C)	ΔR%	1.75	0.5	1
Temp. Cycling (-40 to 125°C)	ΔR%	1	1	0.75
Operational Life	ΔR%	2	1	1
Biased Humidity	ΔR%	0.75	0.5	0.5
Mechanical Shock	ΔR%	1.5	1	1
Vibration	ΔR%	1	1	1
Terminal Strength	Meets JIS-C-6429			
Solvent Resistance	Meets MIL-STD-002 Method 215			
Solderability	Meets J-STD-002 Method B			

**Temperature Derating**



Note: For OARS-1Z the above derating graph may be applied to the square of the current rating.

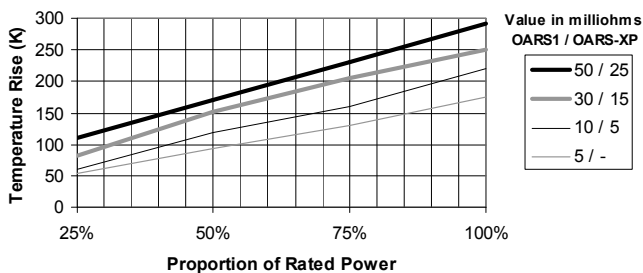
**Pulse Energy Rating**



Note: This graph relates to single pulses of short duration ( $\leq 100\text{ms}$ ). Higher energy limits apply for longer pulses and overloads

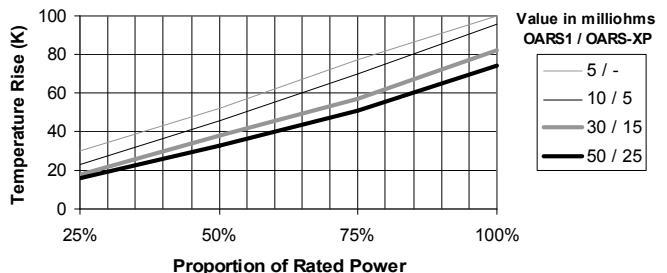
**Hot Spot Temperature Rise**

7.6mm x 7.6mm pads, 2 oz copper on FR4, still air



**Joint Temperature Rise**

7.6mm x 7.6mm pads, 2 oz copper on FR4, still air



Note: Temperature rise data are given here for typical mounting conditions. Actual figures depend on PCB copper weight, mounting pad size, track width and substrate type. Also, the open air format responds better to forced air cooling than chip format resistors. For values below 5 milliohms allowance should be made for heat generated in the copper tracks themselves. Application-specific guidance is available on request.

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**Flammability**

The resistor will not burn or emit incandescent particles under any condition of applied temperature or overload.

**Marking**

The parts are legend marked with ohmic value and tolerance code.

**Packaging Data**

Dimensions (mm)							
Type	A	B	C	D	E	F	G
<b>OARS1, OARS-1Z</b>	4.32±0.08	11.7±0.08	24±0.3	11.5±0.1	1.75±0.1	8±0.1	4±0.1
<b>OARS-XP-R001</b>	7.21±0.1	11.94±0.1				12±0.1	
<b>OARS-XP &gt;R001</b>		11.56±0.1					

**Ordering Procedure**

Example: OARS1 at 10 milliohms and 5% tolerance on a reel of 1900 pieces -

**O A R S 1 - R 0 1 J I**

Type OARS1  
OARS-XP

Value (use IEC62 code) R01

Tolerance (use IEC62 code) J

F	1%
J	5%

Packing I

I	Tape	OARS1	1900/reel	Standard
		OARS-XP	1200/reel	

For the zero-ohm link, order **OARS-1Z** (Pack quantity is 1900/reel)

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