Surface Mount Sense Resistors

TT electronics
Welwyn Components

OARS, OARS-XP, OARSZ Series*

- **Flexible leads for thermal expansion**
- **Open-air design reduces PCB heating**
- **Values down to 1mΩ**
- **Element TCR ±20ppm/ºC**
- **Zero-ohm 65A jumper version**
- **RoHS compliant**

  * Not for sale in Germany

Electrical Data

		OARS1	OARS-XP
Power rating at 25°C	watts	2	4
Power rating at 85ºC	watts	1	2
Resistance range	ohms	R002 to R050	R001 to R025
Resistance Tolerance	%	≤ 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	

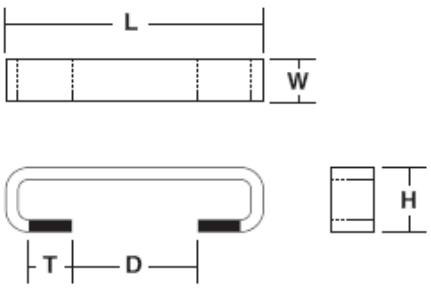
		OARS-1Z	Comments
Current rating at 25°C	amps	65	Zero-ohm jumper
Current rating at 85°C	amps	46	
Ambient temperature range	°C	-55 to +160	

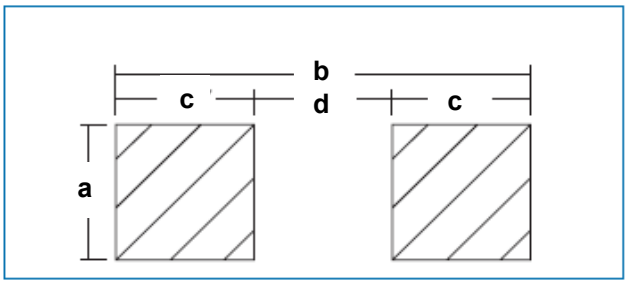
Physical Data

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 ±0.38	3.05 ±0.76	2.36 ±0.25	4.83 ±0.76	3.18 ±0.38	4.07	9.37	3.07	3.23
OARS1-R003		3.51 ±0.76							
OARS1-R002	11.56 ±0.38			4.7 ±0.76	3.56 ±0.38	4.45			
OARS-XP	10.7 to 12.0*	2.28 to 4.57*		4.83 ±0.76	6.35 ±0.38	7.24	9.58	3.18	

* Dependent on ohmic value





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

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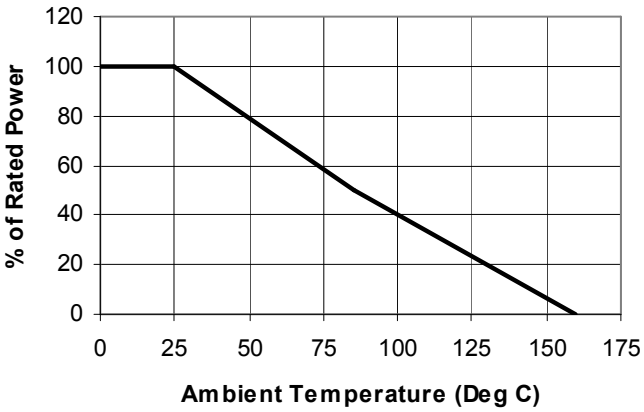
Performance Data (AEC-Q200)

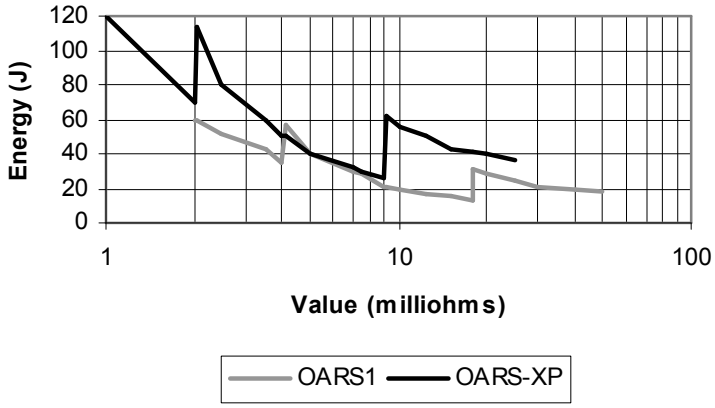
	OARS1	<R004	R004 to R015	>R015
	OARS-XP	<R002	R002 to R007	>R007
TCR (-55 to 125ºC)	ppm/ºC	240	40	40
Thermal Shock	ΔR%	0.75	0.75	0.75
High Temp. Exposure (125ºC)	ΔR%	1.75	0.5	1
Temp. Cycling (-40 to 125ºC)	ΔR%	1	1	0.75
Operational Life	ΔR%	2	1	1
Biased Humidity	ΔR%	0.75	0.5	0.5
Mechanical Shock	ΔR%	1.5	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.

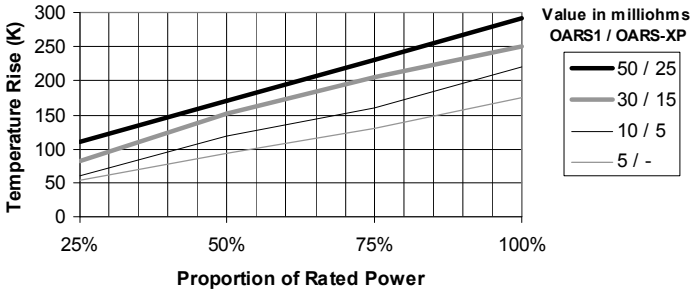
Pulse Energy Rating



Note: This graph relates to single pulses of short duration (≤ 100ms). Higher energy limits apply for longer pulses and overloads

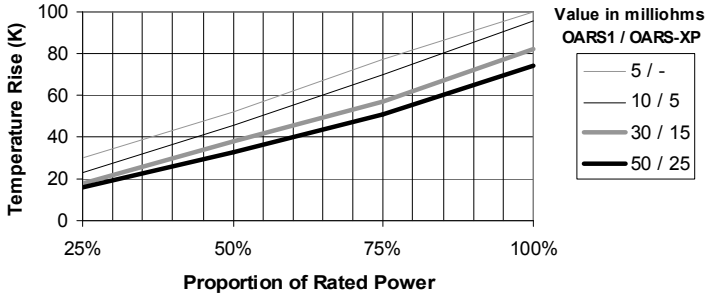
Hot Spot Temperature Rise

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



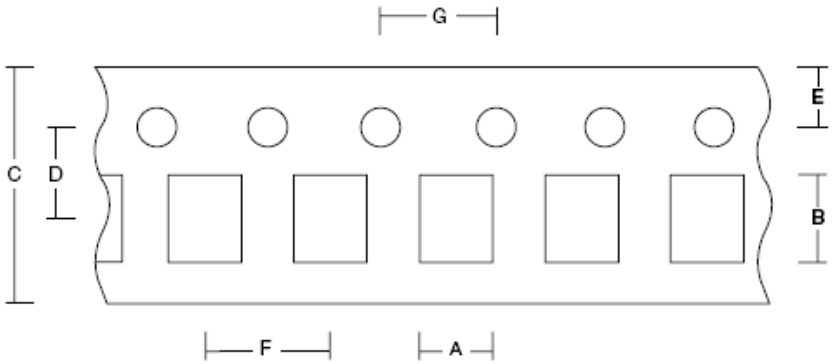
Note: Temperature rise data are given here for typical mounting conditions. Actual figures depend on PCB copper weight, mounting pad size, track width and substrate type. Also, the open air format responds better to forced air cooling than chip format resistors. For values below 5 milliohms allowance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

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
OARS1, OARS-1Z	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
OARS-XP-R001	7.21±0.1	11.94±0.1				12±0.1	
OARS-XP >R001		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)

Tolerance (use IEC62 code)

F	1%
J	5%

Packing

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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