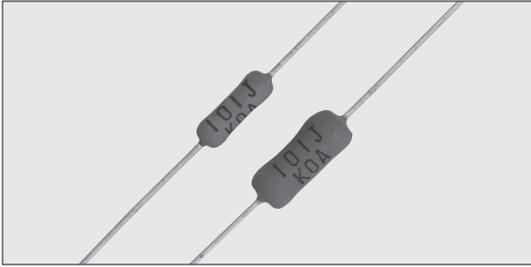
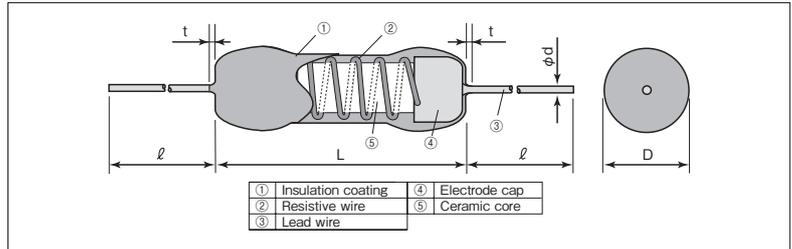


CWFS Coat-Insulated Wirewound Resistors (With Fusing Function)



Coating color : Gray
Alphanumeric

Construction



Features

- Flame retardant coating (Equivalent to UL94-V-0)
- Fail-safe mains fusing at AC 250V*1
*1 CWFS23 4.7Ω~9.1Ω : AC200V
- Products meet EU-RoHS requirements

Dimensions

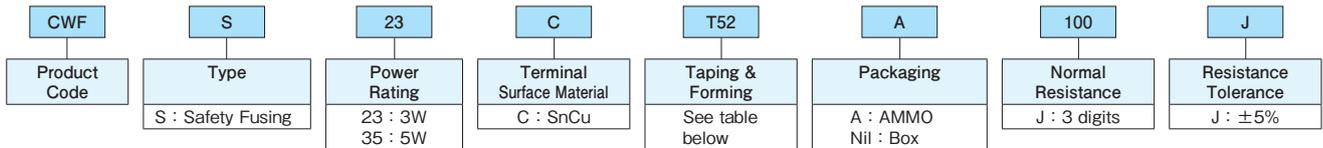
Type	Dimensions (mm)					Weight (g) (1000pcs)
	L	D	ℓ ±3.0	d (Nominal)	t Max.	
CWFS23	12±1.0	4.0±1.0	30	0.8	3	950
CWFS35	15±1.0	6.0±1.0	30	0.8	3	1780

Approval Awarded

- UL1412 Recognized File No. E134679

Type Designation

Example



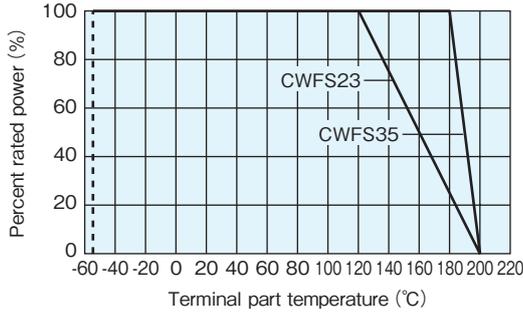
Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.
For further information on taping, please refer to APPENDIX C on the back pages.
Lead length changes depending on taping and forming type.

Ratings

Type	Power Rating	Rated Terminal Part Temp.	Resistance Range (Ω) J : ±5% (E24)	Fusing Characteristics		T.C.R. (×10 ⁻⁶ /K)	Taping & Q'ty/AMMO (pcs)	
				Fusing Power	Fusing Time		T52A	T521A
CWFS23	3W	+120°C	4.7~100	90W	30s Max.	±100	1,000	1,000
CWFS35	5W	+180°C		150W	30s Max.		—	500

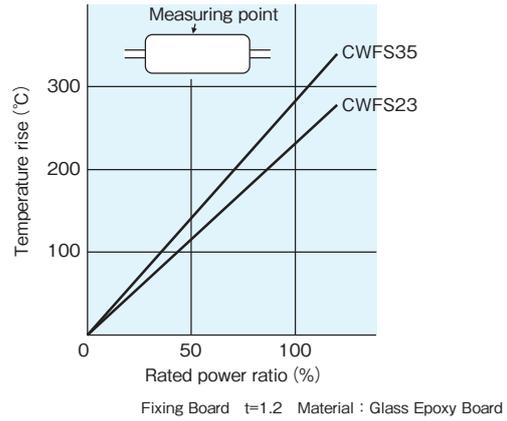
Operating Temperature Range : -55°C ~ +200°C
Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance value}}$

Derating Curve



When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.
 ※Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

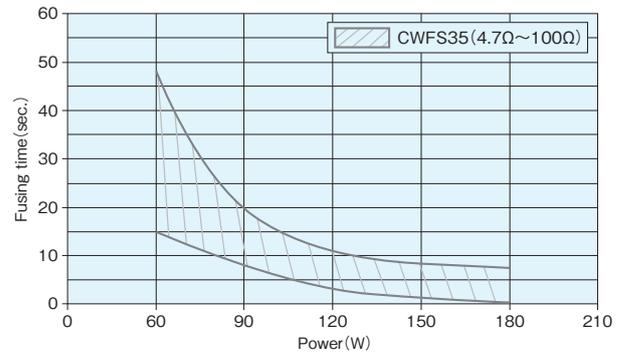
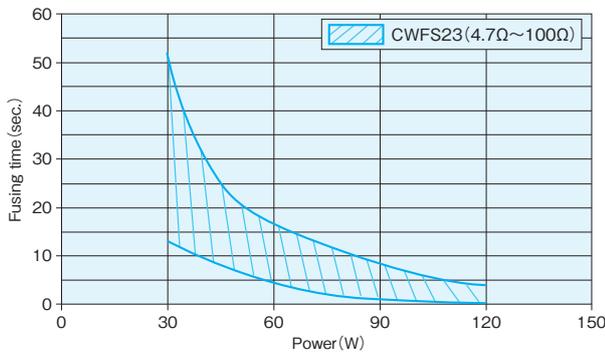
Temperature Rise (Ref.)



Performance

Test Items	Performance Requirements $\Delta R \pm (\% + 0.05\Omega)$		Test Methods
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
T.C.R.	$\pm 100 \times 10^{-6}/K$	—	+25°C/-55°C and +25°C/+125°C
Fusing time	30s	4s	Power Rating × 30
Overload (Short time)	5	2	Power Rating × 10, 5s
Resistance to soldering heat	1	0.8	350°C ± 10°C, 3.5s or 260°C ± 5°C, 10s
Moisture resistance	5	4	Power Rating × 1/10, 40°C, 90%~95%RH, 1000h 1.5h ON/0.5h OFF cycle
Endurance of Rated Terminal part Temperature	5	3	120°C ± 2°C : CWFS23 180°C ± 2°C : CWFS35 1000h, 1.5h ON/0.5h OFF cycle
Resistance to solvent	No abnormality in appearance such as disappearance of making, etc.	—	On immersing the sample in IPA for 3 minutes, the resistor surface should be lightly wiped with a dry cloth (velvet or gauze).

Example of Fusing Characteristics



Precautions for Use

- Be careful to handle these resistors because outer coatings are comparatively weak to outer shock due to flameproof special coats. Please wash them to a minimum. No external force is given to the coating films until they are well dried because the coating films become weaker right after washing. The original strength will be returned after they are dried, so please pay attention not to apply any external force onto the coating film of resistors for 20 minutes after drying. Especially no PC boards shall be piled up.
- In case of using them for an AC circuit, abnormal phenomena like oscillation etc. occasionally happen as they have an inductance or a parasitic capacitance because of their wiring structures. Use them by taking the dispersion of constants of other components into the consideration.