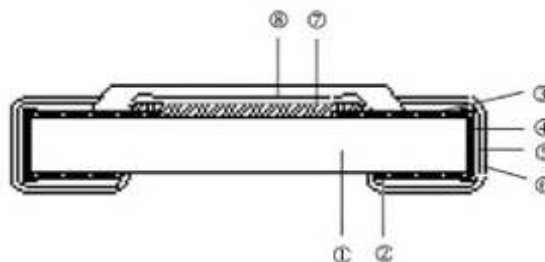
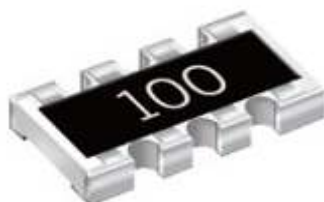


Thin Film Array Chip Resistor – TFAN Series

Construction



① Alumina Substrate	④ Edge Electrode (Ag)	⑦ Resistor Layer (NiCr)
② Bottom Electrode (Ag)	⑤ Barrier Layer (Ni)	⑧ Overcoat (Epoxy)
③ Top Electrode (Ag-Pd)	⑥ External Electrode (Sn)	

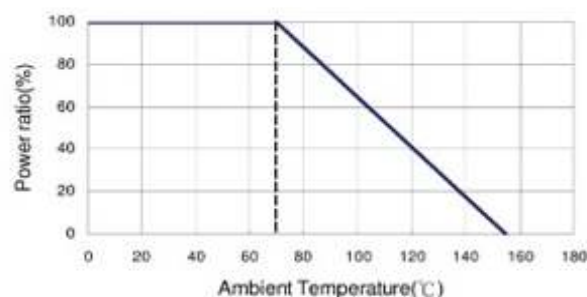
Features

- Advanced thin film technology
- Very tight tolerance down to $\pm 0.1\%$
- Extremely low TCR down to $\pm 25\text{PPM}/^\circ\text{C}$
- RoHS compliant component, compatible with lead (Pb)-free

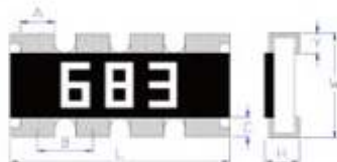
Applications

- Voltage divider
- Feedback circuits
- Signal conditioning

Derating Curve



Dimensions



Type	Number of Resistors	L	W	H	A	B	C	Y
TFAN43	4	3.2 ± 0.15	1.6 ± 0.15	0.55 ± 0.10	0.5 ± 0.15	0.8 ± 0.05	0.3 ± 0.15	0.3 ± 0.15

Part Numbering

TFAN	43	B	T	C	Y	1001	N
Product Type	Dimensions	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance	Marking Code
	43: 0603X4	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$	T: Taping Reel B: Bulk	C: ± 25 D: ± 50	: Standard Y: 1/16W	0010: 1Ω 4R70: 4.7Ω 1001: 1KΩ 1004: 1MΩ	: Standard Marking for E96 N: No Marking

Electrical Specifications

Type	Item	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range				TCR (PPM/°C)
						$\pm 0.1\%$	$\pm 0.25\%$	$\pm 0.5\%$	$\pm 1\%$	
TFAN43		1/16	-55 ~ +155°C	50V	100V	100 - 20K				± 25 ± 50

Operating Voltage = $\sqrt{(P \cdot R)}$ or Max. operating voltage listed above, whichever is lower.

Overload Voltage = $2.5 \cdot \sqrt{(P \cdot R)}$ or Max. overload voltage listed above, whichever is lower.

Environmental Characteristics

Item	Requirement		Test Method
	Tol. $\leq 0.25\%$	Tol. $> 0.25\%$	
Temperature Coefficient of Resistance (T.C.R.)	As Spec.		+25/-55/+25/+125/+25°C
Short Time Overload	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	$> 1000 \text{ M}\Omega$		Apply 100V _{DC} for 1 minute
Endurance	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	70 $\pm 2^\circ\text{C}$, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	40 $\pm 2^\circ\text{C}$, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Bending Strength	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage		245 $\pm 5^\circ\text{C}$ for 3 seconds
Resistance to Soldering Heat	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	260 $\pm 5^\circ\text{C}$ for 10 seconds
Dielectric Withstand Voltage	100V		Max. overload voltage for 1 minute
Thermal Shock	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	-55°C ~ 150°C, 100 cycles
Low Temperature Operation	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.5\%$	1 hour, -65°C, followed by 45 minutes of RCWV

■ Reference Standards: MIL-STD-202F; JIS-C 5201-1

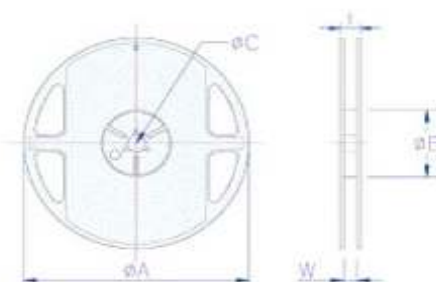
■ Storage Temperature: 25 $\pm 3^\circ\text{C}$; Humidity < 80%RH

Packaging

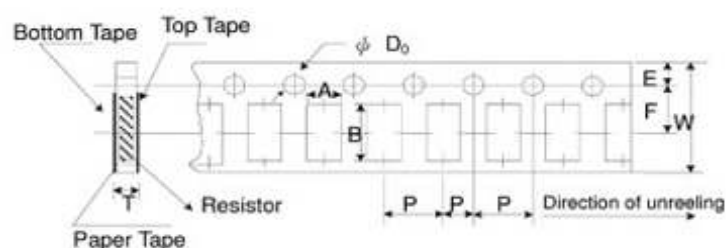
Reel Specifications & Packaging Quantity

Unit: mm

Type	Packaging Quantity	Tape Width	Reel Diameter	ΦA	ΦB	ΦC	W	T
TFAN43	Paper 5K	8mm	7 inch	178.5 ± 1.5	60 $^{+1.0}_{-0}$	13.0 ± 0.2	9.0 ± 0.5	12.5 ± 0.5



Paper Tape Specifications



Unit: mm

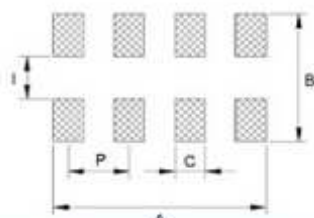
Type	A	B	W	E	F	P ₀	P ₁	P ₂	ΦD_0	T
TFAN43	1.95 ± 0.1	3.50 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	4.0 ± 0.1	4.0 ± 0.05	2.0 ± 0.05	1.5 $^{+0.1}_{-0}$	0.85 ± 0.1

Marking

TFAN43: 4 digits marking for example

Resistance	100 Ω	2.2K Ω	10K Ω	49.9K Ω	100K Ω
marking	1000	2201	1002	4992	1003

Recommend Land Pattern



Unit: mm

Type	A	B	C	C1	I	I1	P	P1
TFAN43	2.85	3.10	0.45	--	0.80	--	0.80	--