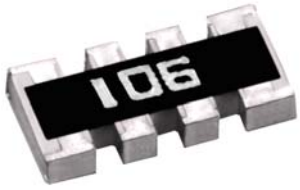
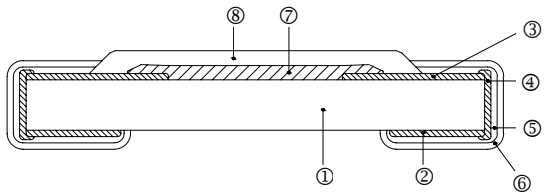
Thin Film Array Chip Resistor－TFAN Series

■Construction





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

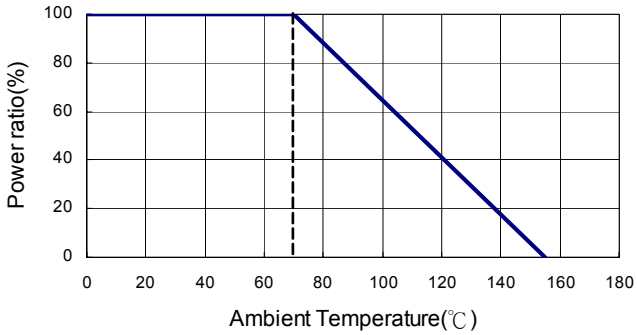
■Features

－Advanced thin film technology
－Very tight tolerance down to ±0.1%
－Extremely low TCR down to ±25PPM/°C
－RoHS compliant component, compatible with lead (Pb)-free

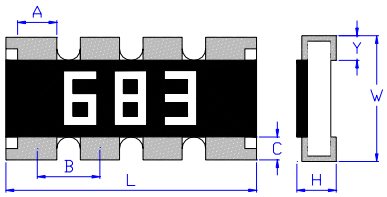
■Applications

－Voltage divider
－Feedback circuits
－Signal conditioning

■Derating Curve



■Dimensions



Unit: mm

Type	Number of Resistors	L	W	H	A	B	C	Y	Weight (g) (1000pcs)
TFAN43	4	3.20±0.15	1.60±0.15	0.55±0.10	0.50±0.15	0.80±0.05	0.30±0.15	0.30±0.15	8.22

■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: ±0.1% C: ±0.25% D: ±0.5% F: ±1%	T: Taping Reel B: Bulk	B: ±10 N: ±15 C: ±25 D: ±50	: Standard Y: 1/16W	0010: 1Ω 4R70: 4.7Ω 1001: 1KΩ 1004: 1MΩ	: Standard Marking for E96 N: No Marking

■Standard Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Number Of Resistors	Resistance Range				TCR (PPM/°C)
						±0.1%	±0.25%	±0.5%	±1%	
TFAN 43	1/16W	-55 ~ +155°C	50V	100V	4	100Ω~33KΩ				±25 ±50

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

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

■Special Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Number Of Resistors	Resistance Range				TCR (PPM/°C)
						±0.1%	±0.25%	±0.5%	±1%	
TFAN 43	1/16W	-55 ~ +155°C	50V	100V	4	100Ω~2KΩ				±10 ±15

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

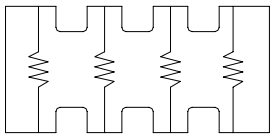
Overload Voltage=2.5*$\sqrt{}$(P*R) or Max. overload voltage listed above, whichever is lower.

■ Environmental Characteristics

Item	Requirement		Test Method
	Tol. ≦ 0.25%	Tol. > 0.25%	
Temperature Coefficient of Resistance (T.C.R.)	As Spec.		**MIL-STD-202F Method 304** +25/-55/+25/+125/+25°C
Short Time Overload	ΔR±0.25%	ΔR±0.5%	**JIS-C-5201-1 5.5** RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	>1000 MΩ		**MIL-STD-202F Method 302** Apply 100V_{DC} for 1 minute
Endurance	ΔR±0.25%	ΔR±0.5%	**MIL-STD-202F Method 108A** 70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	ΔR±0.25%	ΔR±0.5%	**MIL-STD-202F Method 103B** 40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Bending Strength	ΔR±0.25%	ΔR±0.5%	**JIS-C-5201-1 6.1.4** Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage		**MIL-STD-202F Method 208H** 245±5°C for 3 seconds
Resistance to Soldering Heat	ΔR±0.25%	ΔR±0.5%	**MIL-STD-202F Method 210E** 260±5°C for 10 seconds
Dielectric Withstand Voltage	100V		**MIL-STD-202F Method 301** Max. overload voltage for 1 minute
Thermal Shock	ΔR±0.25%	ΔR±0.5%	**MIL-STD-202F Method 107G** -55°C ~150°C, 100 cycles
Low Temperature Operation	ΔR±0.25%	ΔR±0.5%	**JIS-C-5201-1 7.1** 1 hour, -65°C, followed by 45 minutes of RCWV

■ Storage Temperature: 25±3°C; Humidity < 80%RH

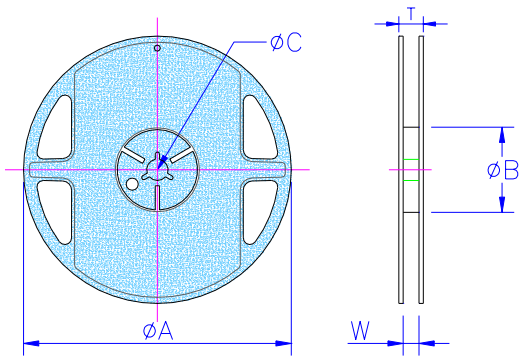
■Equivalent Circuit Diagram



TFAN

■Packaging

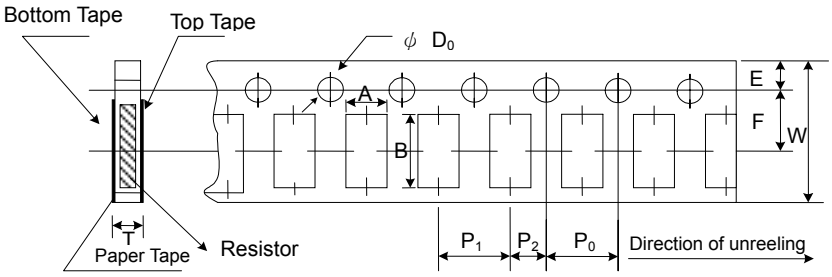
Reel Specifications & Packaging Quantity



Unit: mm

Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA	ΦB	ΦC	W	T
TFAN 43	Paper	5K	8mm	7 inch	178.5±1.5	$60^{+1/-0}$	13.0±0.2	9.0±0.5	12.5±0.5

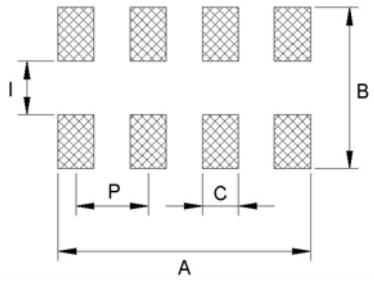
Paper Tape Specifications



Unit: mm

Type	A	B	W	E	F	P_0	P_1	P_2	ΦD_0	T
TFAN 43	1.95±0.10	3.50±0.10	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	4.0±0.05	2.0±0.05	$1.5^{+0.1}_{-0}$	0.85±0.10

■Recommend Land Pattern



Unit: mm

Type	A	B	C	C1	I	I1	P	P1
TFAN 43	2.85	3.10	0.45	--	0.80	--	0.80	--