

# Thick Film Chip Resistor Array Flat Terminal AEC-Q200

RTAA Series

MERITEK

## FEATURE

- Improvement of Placement Efficiency
- Applications: Automotive Industry, Entertainment, Communication Equipment, Power Equipment, Measuring Instrument
- AEC-Q200 Compliant



## ELECTRICAL CHARACTERISTICS

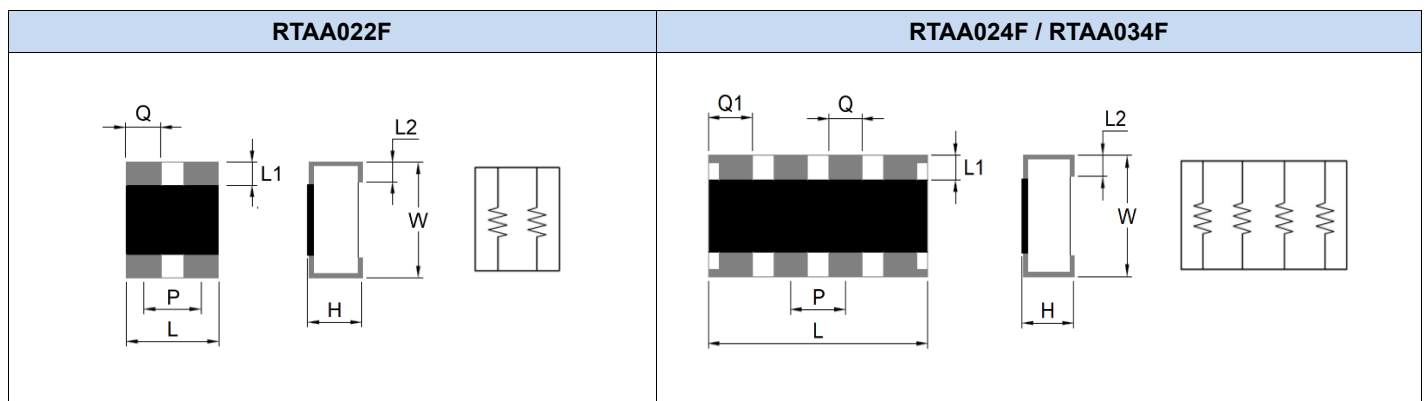
Series	Number of Circuits	Power Rating at 70°C	Max Operating Voltage	Max Overload Voltage	Resistance Range (Ω)		TCR (±PPM/°C)
					±1%(F)	±5%(J)	
RTAA022F	2* 0402	1/16W	25V	50V	1 ~ 1M		200
		Jumper: 1A			-	0Ω (<50mΩ)	-
RTAA024F	4* 0402	1/16W	50V	100V	10 ~ 1M	1 ~ 10M	200
		Jumper: 1A			-	0Ω (<50mΩ)	-
RTAA034F	4* 0603	1/10W, 1/8W	50V	100V	10 ~ 1M	1 ~ 10M	200
		Jumper: 1A			-	0Ω (<50mΩ)	-

### Notes:

1. Operating temperature: -55 ~ +155°C
2. Operating Voltage =  $\sqrt{P \cdot R}$  or Max. operating voltage listed above, whichever is lower.
3. Overload Voltage =  $2.5 \cdot \sqrt{P \cdot R}$  or Max. overload voltage listed above, whichever is lower.
4. Customized specifications might be available upon request, please contact Meritek for more information.

## DIMENSIONS

Series	L	W	H	L1	L2	P	Q	Q1
RTAA022F	1.25±0.10	1.00±0.10	0.35±0.10	0.18±0.15	0.26±0.15	0.82±0.05	0.43±0.10	-
RTAA024F	2.00±0.10	1.00±0.10	0.45±0.10	0.20±0.10	0.35±0.15	0.50±0.10	0.30±0.10	0.40±0.10
RTAA034F	3.20±0.10	1.60±0.15	0.55±0.10	0.23±0.15	0.47±0.15	0.80±0.05	0.50±0.15	0.65±0.10



(Unit: mm)

# Thick Film Chip Resistor Array

## Flat Terminal AEC-Q200

RTAA Series

MERITEK

### RELIABILITY TEST CONDITION AND REQUIREMENT

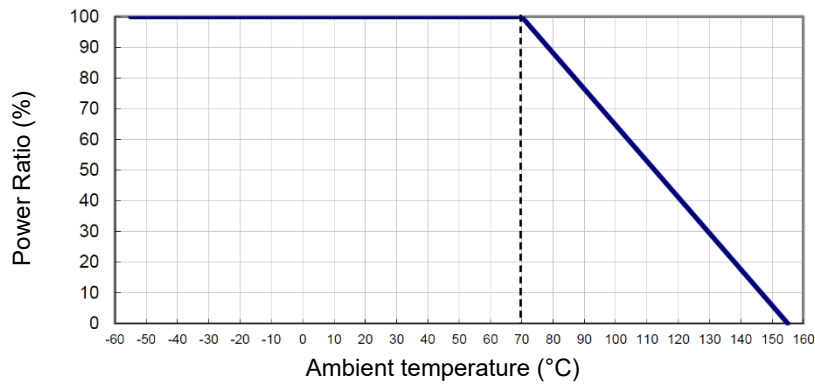
Item	Standard	Test Method	Requirement		
			±1%	±5%	Jumper
Temperature Coefficient	JIS-C-5201-1 4.8 IEC-60115-1 4.8	-55°C ~ +125°C, 25°C is the reference temperature	As Specified		
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	2.5*RCWV or Max. Overload Voltage whichever is lower for 5 seconds	±(1%+0.05Ω)	±(2%+0.05Ω)	<50mΩ
Insulation Resistance	JIS-C-5201-1 4.6 IEC-60115-1 4.6	Max. Overload Voltage for 1 minute	≥10GΩ		
Voltage Proof	JIS-C-5201-1 4.7 IEC-60115-1 4.7	1.42 times Max. Operating Voltage for 1 minute	No breakdown or flashover		
Operational Life	MIL-STD202 Method 108	Condition D Steady State TA=125°C at derated power. Measurement at 24±4 hours after test conclusion.	±(2%+0.10Ω)	±(3%+0.10Ω)	<100mΩ
High Temperature Exposure	MIL-STD202 Method 108	At 155°C for 1000 hours.	±(1%+0.05Ω)	±(1.5%+0.10Ω)	<50mΩ
Temperature Cycling	JESD22 Method JA-104	-55°C to +125°C, 1000 cycles	±(0.5%+0.05Ω)	±(1.5%+0.05Ω)	<50mΩ
Biased Humidity	MIL-STD202 Method 103	1000 hours 85°C/85%RH. 10% of operating power.	±(2%+0.10Ω)	±(3%+0.10Ω)	<100mΩ
Resistance to Solvent	MIL-STD202 Method 215	Add Aqueous wash chemical - OKEM Clean or equivalent. Do not use banned solvents.	Marking Unsmearred		
Mechanical Shock	MIL-STD202 Method 213	Wave Form: Tolerance for half sine shock pulse. Peak value is 100g's. Normal duration (D) is 6.	±(0.25%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ
Vibration	MIL-STD202 Method 204	5 g's for 20 min., 12 cycles each of 3 orientations. 10-2000 Hz.	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ
Resistance to Soldering Heat	MIL-STD202 Method 210	260±5°C for 10 seconds	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ
ESD	AEC-Q200-002	Human body model RTAA02-2F/ RTAA02-4F: 0.5KV RTAA03-4F: 1KV	±(3%+0.05Ω)		
Solderability	JIS-C-5201-1 4.17 IEC-60115-1 4.17 J-STD-002	245±5°C for 3 seconds.	>95% Coverage		
Board Flex	AEC-Q200-005	Bending once for 60 seconds with 3mm	±(1%+0.05Ω)	±(1%+0.05Ω)	<50mΩ
Terminal Strength	AEC Q200-006	Force of 1.8kg for 60 seconds	No broken		
Flammability	UL-94	V-0 or V-1 are acceptable. Electrical test not required.	No ignition of the tissue paper or scorching on the pinewood board.		
Sulfur Test	EIA-977 (Condition A)	60±2°C, no power rating for 500 hrs.	ΔR±1%	ΔR±5%	<100mΩ
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	260±5°C for 30 seconds	Individual leaching area ≤5% Total leaching area ≤10%		

# Thick Film Chip Resistor Array Flat Terminal AEC-Q200

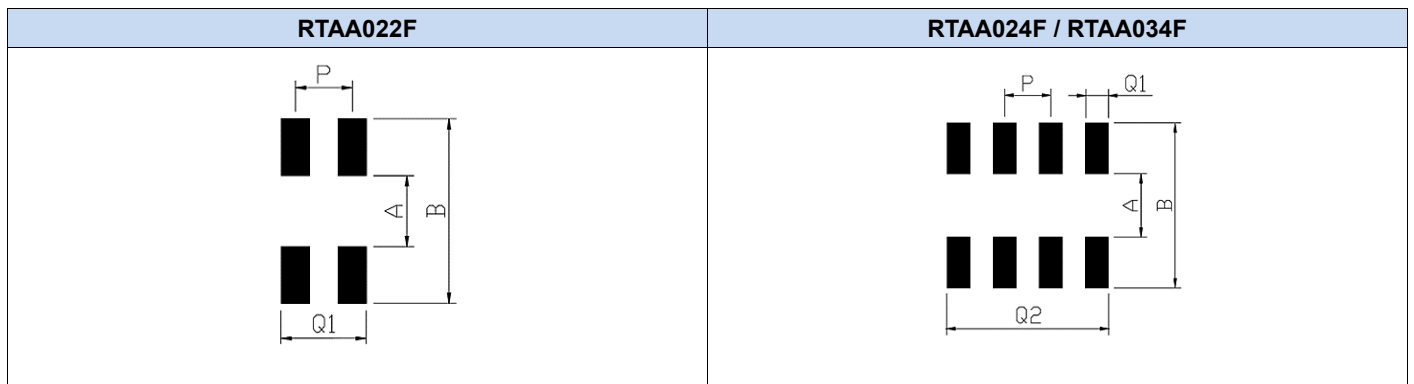
RTAA Series

MERITEK

## POWER DERATING CURVE



## LAND PATTERN RECOMMENDATION

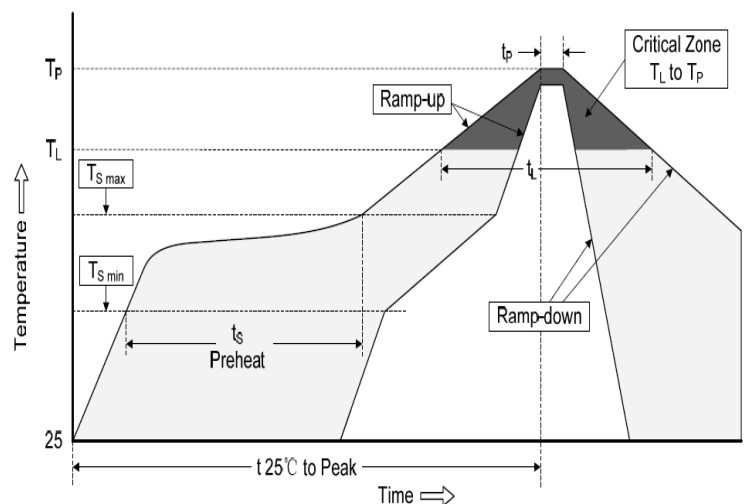


(Unit: mm)

Type	A	B	P	Q1	Q2
RTAA022F	0.35	1.25	0.80	1.50	-
RTAA024F	0.50	1.80	0.50	0.30	2.10
RTAA034F	0.80	2.85	0.80	0.45	3.10

## RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	180°C
	Time (min. to max.) ( $t_s$ )	90~120 seconds
Average ramp up rate ( $T_L$ ) to peak		3°C/second max.
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second max.
Reflow	Temp. ( $T_L$ )	220°C
	Time (min. to max.) ( $t_L$ )	60 seconds max.
Peak Temperature ( $T_P$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		10 seconds max.
Ramp-down Rate		6°C/second

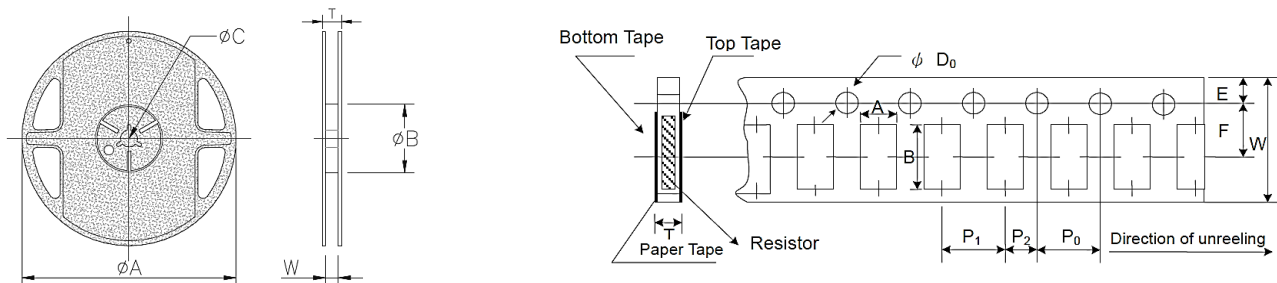


# Thick Film Chip Resistor Array Flat Terminal AEC-Q200

RTAA Series

MERITEK

## PACKAGING SPECIFICATIONS



Type	Reel Dimension (mm)								
	Quantity	Type	Tape Width	Reel Size	A	B	C	W	T
RTAA022F	10K	Paper	8mm	7"	178.5±1.5	60±1.0	13.0±0.2	9.0±0.5	12.5±0.5
RTAA024F	5K	Paper	8mm	7"	178.5±1.5	60±1.0	13.0±0.2	9.0±0.5	12.5±0.5
RTAA034F	5K	Paper	8mm	7"	178.5±1.5	60±1.0	13.0±0.2	9.0±0.5	12.5±0.5

Type	Paper Tape Dimension (mm)									
	A	B	W	E	F	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	D <sub>0</sub>	T
RTAA022F	1.20±0.10	1.45±0.10	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	2.0±0.05	1.55±0.05	0.43±0.10
RTAA024F	1.20±0.10	2.20±0.10	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	2.0±0.05	1.55±0.05	0.70±0.10
RTAA034F	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	1.55±0.05	0.85±0.10

## PART NUMBERING SYSTEM

**RTAA** **02** **2F** **24R9** **F**  
(1) (2) (3) (4) (5)

No	Item	Code	Description	
(1)	Meritek Series	RTAA	Thick Film Chip Resistor Array, AEC-Q200	
(2)	Size Code	02	02: 0402	03: 0603
(3)	Number of Circuits	2F	2: 2 circuits F: Flat	4: 4 circuits
(4)	Resistance	24R9	24R9: 24.9Ω	E48/E96 Series: 2491: 2490Ω, 000: Jumper
(5)	Tolerance	F	F: ±1%	J: ±5%

\*Specifications subject to change without notice.