

Thick Film Chip Resistor Array Flat Terminal AEC-Q200

RTAA-F Series

MERITEK

FEATURE

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



ELECTRICAL CHARACTERISTICS

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

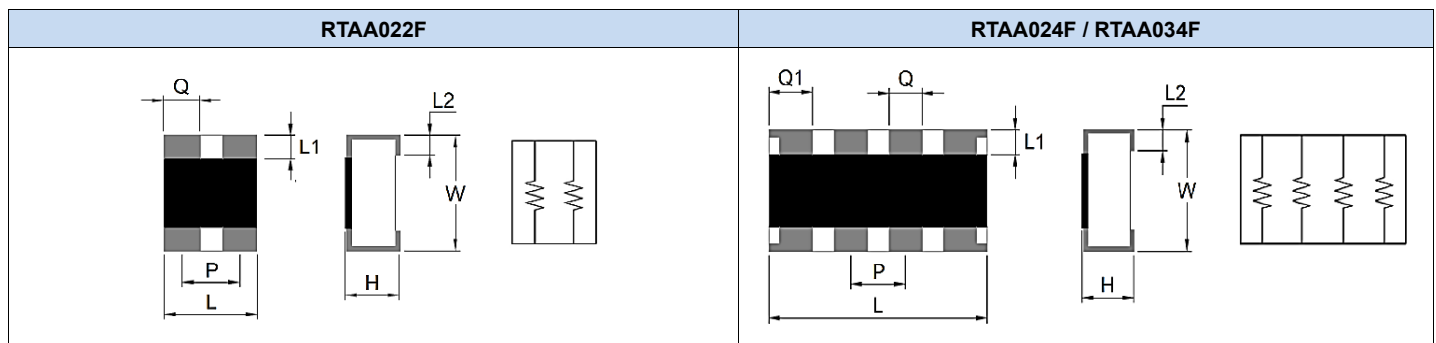
Notes:

1. Operating temperature: -55 ~ +155 $^{\circ}$ 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

Unit: mm

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



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RELIABILITY

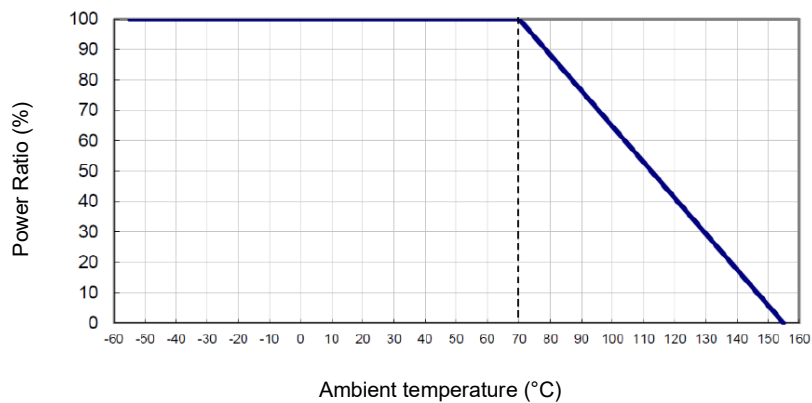
Item	Standard	Test Method	Requirement		
			±1%	±5%	Jumper
Temperature Coefficient	JIS-C-5201-1 4.8 IEC-60115-1 4.8	-55°C ~ +125°C, 25°C is the reference temperature	As Specified		
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	2.5*RCWV or Max. Overload Voltage whichever is lower for 5 seconds	±(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 T _A =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 (≤100V)	±(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 RTAA022F/ RTAA024F: 0.5KV RTAA034F: 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%		

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POWER DERATING CURVE



LAND PATTERN RECOMMENDATION

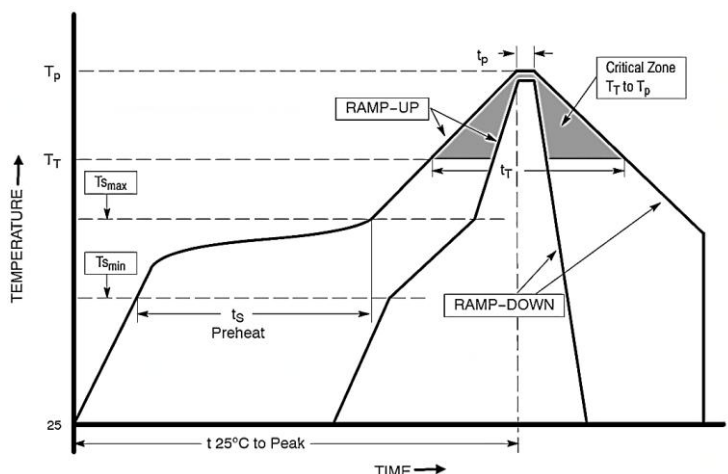
RTAA022F	RTAA024F / RTAA034F

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 $T_{s(max)}$	200°C
	Time (min. to max.) (t_s)	60~120 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)	217°C
	Time (min. to max.) (t_L)	60~150 seconds
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 max.

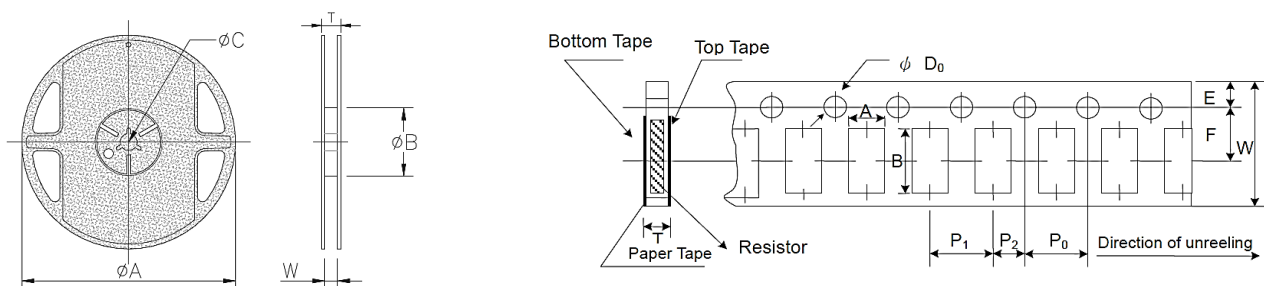


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PACKAGING SPECIFICATIONS



Unit: mm

Type	Reel Dimension								
	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

Unit: mm

Type	Paper Tape Dimension									
	A	B	W	E	F	P ₀	P ₁	P ₂	ΦD ₀	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	1.50±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	1.50±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	1.50±0.05	0.85±0.10

PART NUMBERING SYSTEM

RTAA 02 2F Y 24R9 F
 (1) (2) (3) (4) (5) (6)

No	Item	Code	Description	
(1)	Product Code	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)	Power Rating	Y	Y: 1/16W	X: 1/10W, W: 1/8W
(5)	Resistance	24R9	24R9: 24.9Ω	5%: 3 digits. First 2 are significant, Third is multiplier (10 ^x) 1%: 4 digits. First 3 are significant, Fourth is multiplier (10 ^x) 000: Jumper
(6)	Tolerance	F	F: ±1%	J: ±5%

*Specifications subject to change without notice.