

Features

- Compliant with AEC-Q200 Rev-C- Stress Test Qualification for Passive Components in Automotive Applications
- Operating temperature range up to 125 °C
- Low thermal derating factor
- Higher hold currents at elevated temperature
- Choice of operating currents
- RoHS compliant* and halogen free**
- Resettable fault protection of general electronic equipment

MF-RHT Series - High Temperature PTC Resettable Fuses

Electrical Characteristics

	V max. Volts	l max. Amps	I _{hold}	l _{trip}	Resis	stance	Max. Time To Trip		Tripped Power Dissipation
Model			Amperes at 23 °C		Ohms at 23 °C		Amperes at 23 °C	Seconds at 23 °C	Watts at 23 °C
			Hold	Trip	R _{Min} .	R _{1Max.} (Post Trip)		Max.	Тур.
MF-RHT050	30	40	0.5	0.92	0.4800	1.10	2.5	2.5	0.9
MF-RHT070	16	40	0.7	1.4	0.3000	0.80	3.5	4.0	1.4
MF-RHT100	30	40	1.0	1.8	0.1800	0.43	5.0	5.2	1.4
MF-RHT200	16	100	2.0	3.8	0.0450	0.110	12.5	3.0	1.4
MF-RHT200/32	32	50	2.0	3.8	0.0450	0.110	12.5	3.0	1.4
MF-RHT300	16	100	3.0	6.0	0.0330	0.079	15.0	5.0	3.0
MF-RHT400	16	100	4.0	7.5	0.0240	0.060	20.0	5.0	3.3
MF-RHT450	16	100	4.5	7.8	0.0220	0.054	22.5	3.0	3.6
MF-RHT500	16	100	5.0	9.0	0.0175	0.045	25.0	9.0	3.6
MF-RHT550	16	100	5.5	10.0	0.0150	0.037	27.5	6.0	3.5
MF-RHT600	16	100	6.0	10.8	0.0130	0.0215	30.0	5.0	4.1
MF-RHT650	16	100	6.5	12.0	0.0110	0.026	32.5	5.5	4.3
MF-RHT700	16	100	7.0	13.0	0.0100	0.025	35.0	7.0	4.0
MF-RHT750	16	100	7.5	13.1	0.0094	0.022	37.5	7.0	4.5
MF-RHT800	16	100	8.0	15.0	0.0080	0.020	40.0	8.0	4.2
MF-RHT900	16	100	9.0	16.5	0.0074	0.017	45.0	10.0	5.0
MF-RHT1000	16	100	10.0	18.5	0.0062	0.015	50.0	9.0	5.3
MF-RHT1100	16	100	11.0	20.0	0.0055	0.013	55.0	11.0	5.5
MF-RHT1300	16	100	13.0	24.0	0.0041	0.010	60.0	13.0	6.9

Environmental Characteristics

Operating Temperature	40 °C to +125 °C	
Storage Temperature	40 °C to +85 °C	
Passive Aging	+85 °C, 1000 hours	±5 % typical resistance change
Humidity Aging	+85 °C, 85 % R.H. 1000 hours	±5 % typical resistance change
Thermal Shock	MIL-STD-202, Method 107	±10 % typical resistance change
	+125 °C to -40 °C, 10 cycles	
Vibration	MIL-STD-883C, Method 2007.1,	No change
	Condition A	•
Moisture Sensitivity Level (MSL)	Level 1	
ESD Classification - HBM	Class 6	

Test Procedures And Requirements For Model MF-RHT Series

Test	Test Conditions	Accept/Reject Criteria
Visual/Mech	Verify dimensions and materials	. Per MF physical description
Resistance	. In still air @ 23 °C	. Rmin ≤ R ≤ R1max
Time to Trip	At specified current, Vmax, 23 °C	. T ≤ max. time to trip (seconds)
Hold Current	. 30 min. at Ihold	. No trip
Trip Cycle Life	. Vmax, Imax, 100 cycles	. No arcing or burning
Trip Endurance	. Vmax, 48 hours	. No arcing or burning
Solderability	. MIL-STD-202, Method 208	. 95 % min. coverage



Users should verify actual device performance in their specific applications.

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RoHS Directive 2015/863, Mar 31, 2015 and Annex.
Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less. Specifications are subject to change without notice.

Applications

- Protection of automotive circuitry including engine control modules
- Overcurrent surge protection of electronic equipment required to operate at high operating temperature ranges
- Resettable fault protection of general electronic equipment

MF-RHT Series - High Temperature PTC Resettable Fuses

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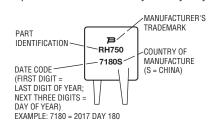
Thermal Derating Chart - Ihold (Amps)

	Ambient Operating Temperature											
Model	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C	125 °C		
MF-RHT050	0.68	0.62	0.56	0.5	0.44	0.4	0.36	0.34	0.28	0.12		
MF-RHT070	0.95	0.87	0.79	0.7	0.62	0.56	0.51	0.47	0.39	0.17		
MF-RHT100	1.36	1.24	1.13	1.0	0.89	0.80	0.73	0.67	0.56	0.24		
MF-RHT200	2.71	2.49	2.26	2.00	1.77	1.60	1.46	1.34	1.11	0.49		
MF-RHT200/32	2.71	2.49	2.26	2.00	1.77	1.60	1.46	1.34	1.11	0.49		
MF-RHT300	4.07	3.74	3.41	3.00	2.65	2.40	2.21	2.00	1.66	0.74		
MF-RHT400	5.57	5.11	4.65	4.00	3.62	3.29	3.01	2.73	2.27	1.01		
MF-RHT450	6.1	5.6	5.1	4.5	4.0	3.6	3.3	3.0	2.5	1.1		
MF-RHT500	6.78	6.22	5.67	5.0	4.44	4	3.67	3.33	2.78	1.22		
MF-RHT550	7.47	6.86	6.24	5.5	4.85	4.41	4.04	3.66	3.05	1.36		
MF-RHT600	8.20	7.50	6.80	6.0	5.3	4.9	4.4	4	3.3	1.5		
MF-RHT650	8.8	8.1	7.4	6.5	5.7	5.3	4.8	4.3	3.6	1.6		
MF-RHT700	9.51	8.73	7.95	7.0	6.17	5.61	5.15	4.66	3.88	1.73		
MF-RHT750	10.2	9.4	8.6	7.5	6.6	6.1	5.6	5.0	4.1	1.9		
MF-RHT800	10.87	9.98	9.08	8.0	7.06	6.41	5.88	5.33	4.43	1.97		
MF-RHT900	12.21	11.19	10.16	9.0	7.97	7.20	6.56	6.04	5.01	2.19		
MF-RHT1000	13.6	12.5	11.4	10.0	8.8	8.10	7.40	6.60	5.50	2.5		
MF-RHT1100	14.94	13.72	12.49	11.0	9.7	8.82	8.09	7.32	6.09	2.71		
MF-RHT1300	17.7	16.3	14.8	13.0	11.4	10.5	9.6	8.6	7.2	3.3		

How to Order MF - RHT 200/32 -Multifuse® Product Designator Series RHT = High Temperature Radial Leaded Component Hold Current, Ihold 050 - 1300 (0.50 - 13.00 Amps) Higher Voltage Option Blank = Standard Voltage /32 = 32 Volts- 2 = Tape & Reel* - AP = Ammo-Pak* Part Number Suffix Option -- 14 = Kinked Leads in Place of Std. Straight Leads - 17 = Straight Leads in Place of Std. Kinked Leads

Typical Part Marking

Represents total content. Layout may vary.



*Packaged per EIA 486-B

Product Dimensions

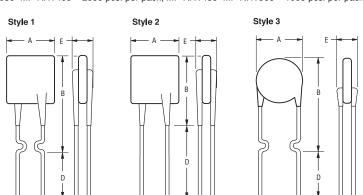
Model	A B		С		D	Е	F	Physical Characteristics		
wodei	Max.	Max.	Nom.	Tol. ±	Min.	Max.	Nom.	Style	Material	
MF-RHT050	7.40	12.7	5.1	0.7	7.6	_3.0_	0.51	3	Sn/CuFe	
	(0.291)	(0.500)	(0.201)	(0.028)	(0.30)	(0.12)	(0.020)	3	SII/Cure	
MF-RHT070	6.86	10.8	5.1	0.7	_7.6_	3.0	0.51	1	Sn/CuFe	
11111070	(0.27)	(0.425)	(0.201)	(0.028)	(0.30)	(0.12)	(0.020)	'	Olivour o	
MF-RHT100	9.70	_13.6_	5.1	0.7	7.6	3.0	0.51	3	Sn/CuFe	
	(0.382)	(0.535)	(0.201)	(0.028)	(0.30)	(0.12)	(0.020)		0 0 0 0	
MF-RHT200	9.4	14.0	5.1	0.7	7.6	3.0	0.51	3	Sn/CuFe	
	(0.37)	(0.55)	(0.201)	(0.028)	(0.30)	(0.12)	(0.020)			
MF-RHT200/32	$\frac{9.4}{(0.37)}$	14.0 (0.55)	<u>5.1</u> (0.201)	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.30)}$	3.0 (0.12)	<u>0.51</u> (0.020)	3	Sn/CuFe	
	8.80	13.8	5.1	0.028)		(- /	0.020)			
MF-RHT300	(0.35)	(0.55)	(0.201)	(0.028)	$\frac{7.6}{(0.30)}$	3.0 (0.12)	(0.032)	2	Sn/Cu	
	10.0	15.0	5.1	0.7	7.6	3.0	0.81			
MF-RHT400	(0.394)	(0.591)	(0.201)	(0.028)	$\frac{7.0}{(0.30)}$	(0.12)	(0.032)	2	Sn/Cu	
	10.4	15.6	5.1	0.7	7.6	3.0	0.81	2		
MF-RHT450	(0.41)	(0.61)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)		Sn/Cu	
	11.2	18.9	5.1	0.7	7.6	3.0	0.81	2	Sn/Cu	
MF-RHT500	(0.441)	(0.744)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)			
ME DUTEEO	11.2	18.9	5.1	0.7	7.6	3.0	0.81	2	Sn/Cu	
MF-RHT550	(0.441)	(0.744)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)			
MF-RHT600	11.2	21.0	5.1	0.7	7.6	3.0	0.81	2	Sn/Cu	
WII - HI I I 000	(0.441)	(0.827)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)			
MF-RHT650	12.7	_22.2_	5.1	0.7	7.6	3.0	_0.81_	2	Sn/Cu	
11111000	(0.50)	(0.88)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)		01#00	
MF-RHT700	_14.0_	21.9	5.1	0.7	7.6	3.0	0.81	2	Sn/Cu	
	(0.55)	(0.862)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)	_	000	
MF-RHT750	14.0	23.5	5.1	0.7	7.6	3.0	0.81	2	Sn/Cu	
	(0.55)	(0.93)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)			
MF-RHT800	16.5	22.5	5.1	0.7	7.6	3.0	0.81	2	Sn/Cu	
	(0.65)	(0.88)	(0.201)	(0.028)	(0.30)	(0.12)	(0.032)			
MF-RHT900	16.5 (0.65)	25.7 (1.012)	5.1 (0.201)	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.30)}$	3.0 (0.12)	$\frac{0.81}{(0.032)}$	2	Sn/Cu	
MF-RHT1000	17.5	26.7	10.2	0.028)	7.6	3.0	0.81			
	(0.689)	(0.51)	$\frac{10.2}{(0.402)}$	$\frac{0.7}{(0.028)}$	$\frac{7.0}{(0.30)}$	(0.12)	(0.032)	2	Sn/Cu	
MF-RHT1100	21.0	26.1	10.2	0.7	7.6	3.0	0.81	_		
	(0.65)	(0.88)	(0.402)	(0.028)	(0.30)	(0.12)	(0.032)	2	Sn/Cu	
	23.5	28.7	10.2	0.7	7.6	3.6	1.0		0.10	
MF-RHT1300	(0.925)	(1.17)	(0.402)	(0.028)	(0.30)	(0.14)	(0.040)	2 S	Sn/Cu	

Packaging:

BULK: MF-RHT050~MF-RHT800 = 500 pcs. per bag; MF-RHT900~MF-RHT1300 = 250 pcs. per bag TAPE & REEL: MF-RHT050~MF-RHT400 = 3000 pcs. per reel; MF-RHT450~MF-RHT700 = 1500 pcs. per reel; 0.51 (24AWG) 0.81 (20AWG) 1.0 (18AWG)

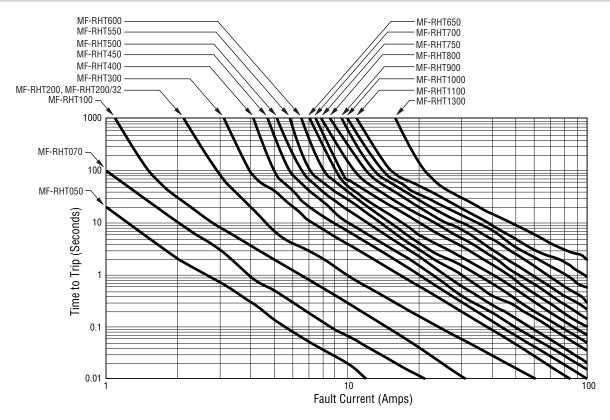
MM DIMENSIONS: (INCHES)

MF-RHT750~MF-RHT1300 = 1000 pcs. per reel AMMO-PACK: MF-RHT050~MF-RHT400 = 2000 pcs. per pack; MF-RHT450~MF-RHT900 = 1000 pcs. per pack, MF-RHT1000~MF-RHT1300 = 500 pcs. per pack



Also available with kinked and straight leads in place of standard leads (see How to Order).

Typical Time to Trip at 23 °C



The Time to Trip curves represent typical performance of a device in a simulated application environment. Actual performance in specific customer applications may differ from these values due to the influence of other variables.

MF-RHT Series Tape and Reel Specifications

Devices taped using EIA468-B/IEC60286-2 standards. See table below and Figures 1 and 2 for details.

	IEC	EIA	Dimensions		
Dimension Description	Mark	Mark	Dimensions	Tolerance	
Carrier tape width	W	W	18 (.709)	-0.5/+1.0 (-0.02/+.039)	
Hold down tape width	W_0	W_4	11 (.433)	min.	
Hold down tape			No protrusion		
Top distance between tape edges	W ₂	W ₆	3 (.118)	max.	
Sprocket hole position	W ₁	W ₅	9 (.354)	-0.5/+0.75 (-0.02/+0.03)	
Sprocket hole diameter	D ₀	D ₀	<u>4</u> (.157)	±0.2 (±.0078)	
Abscissa to plane (straight lead)	Н	Н	18.5 (.728)	±3.0 (±.118)	
Abscissa to plane (kinked lead)	H ₀	H ₀	16 (.63)	±0.5 (±.02)	
Abscissa to top: MF-RHT050 ~ MF-RHT450	H ₁	H ₁	32.2 (1.268)	max.	
Abscissa to top: MF-RHT500 ~ MF-RHT1300	H ₁	H ₁	45.0 (1.837)	max.	
Overall width w/lead protrusion: MF-RHT050 ~ MF-RHT450		C ₁	42.5 (1.673)	max.	
Overall width w/lead protrusion: MF-RHT500 ~ MF-RHT1300		C ₁	<u>55.0</u> (2.165)	max.	
Overall width w/o lead protrusion: MF-RHT050 ~ MF-RHT450		C ₂	42.5 (1.673)	max.	
Overall width w/o lead protrusion: MF-RHT500 ~ MF-RHT1300		C ₂	54.0 (2.126)	max.	
Lead protrusion	11	L ₁	1.0 (.039)	max.	
Protrusion of cutout	L	L	11 (.433)	max.	
Protrusion beyond hold-down tape	12	12	Not specified		
Sprocket hole pitch	P ₀	P ₀	12.7 (0.5)	±0.3 (±.012)	
Pitch tolerance			20 consecutive	±1 (±.039)	
Device pitch			<u>25.4</u> (1.0)	±0.6 (±.024)	
Tape thickness	t	t	0.9 (.035)	max.	
Tape thickness with splice: MF-RHT050 ~ MF-RHT200		t ₁	1.5 (.059)	max.	
Tape thickness with splice: MF-RHT300 ~ MF-RHT1300		t ₁	2.3 (.091)	max.	
Splice sprocket hole alignment			4.0 (.157)	±0.2 (±.008)	
Body lateral deviation	Δ_h	Δ_h	0	±1 (±.039)	
Body tape plane deviation	$\Delta_{\mathcal{p}}$	$\Delta_{\mathcal{p}}$	0	±0.3 (±.012)	
Ordinate to adjacent component lead	P ₁	P ₁	3.81 (.015)	±0.07 (±.028)	

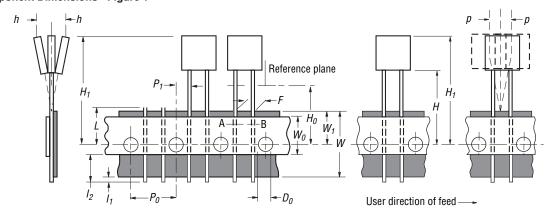
MM (INCHES) DIMENSIONS:

MF-RHT Series Tape and Reel Specifications

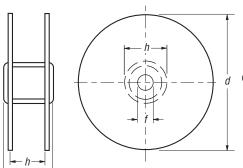
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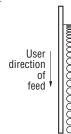
	IEC	EIA	Dimensions		
Dimension Description	Mark	Mark	Dimensions	Tolerance	
Lead spacing: MF-RHT050 ~ MF-RHT900	F	F	<u>5.08</u> (0.2)	-0.2/+0.8 (-0.006/+0.031)	
Lead spacing: MF-RHT1000 ~ MF-RHT1300	F	F	10.2 (0.402)	-0.2/+0.8 (-0.006/+0.031)	
Reel width: MF-RHT050 ~ MF-RHT450	w	W ₂	<u>56</u> (2.20)	max.	
Reel width: MF-RHT500 ~ MF-RHT1300	W	W_2	<u>63.5</u> (2.50)	max.	
Reel diameter	d	а	370.0 (14.57)	max.	
Space between flanges less device	W ₁	h	4.75 (.187)	±3.25 (±.128)	
Arbor hole diameter	f	С	<u>26.0</u> (1.02)	±12.0 (±.472)	
Core diameter	h	n	80.0 (3.15)	max.	
Вох			$\frac{62}{(2.44)} \frac{355}{(14.0)} \frac{345}{(13.6)}$		
Consecutive missing places			3	max.	
Empty places per reel			Not specified		

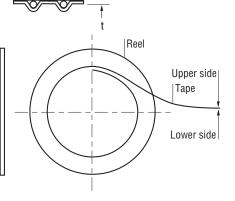
Taped Component Dimensions - Figure 1











MM (INCHES)

DIMENSIONS:

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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MF-RHT070-0 MF-RHT070-2 MF-RHT070-AP MF-RHT1300-0 MF-RHT1300-2 MF-RHT1300-AP MF-RHT200-0 MF-RHT200-0 MF-RHT200-2 MF-RHT200-AP MF-RHT450-0 MF-RHT450-2 MF-RHT450-AP MF-RHT650-0 MF-RHT650-2 MF-RHT650-AP MF-RHT750-0 MF-RHT750-AP MF-RHT050-2 MF-RHT050-0 MF-RHT600-2 MF-RHT550-AP MF-RHT600-AP MF-RHT500-AP MF-RHT800-AP MF-RHT1000-AP MF-RHT1000-AP MF-RHT1000-AP MF-RHT1000-AP MF-RHT1000-AP MF-RHT1000-AP MF-RHT100-AP MF-RHT100-A