

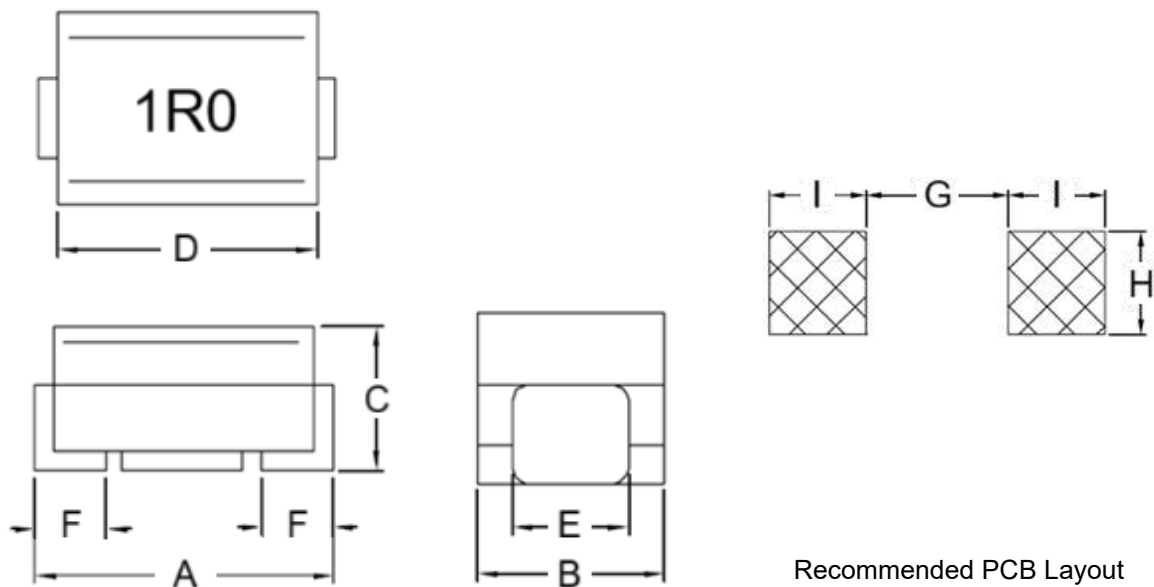
1. Part No. Expression

WI453232 - R10 M F

(a) (b) (c) (d) (e)

- (a) Series Code
- (b) Dimension Code
- (c) Inductance Code
- (d) Tolerance Code
- (e) Packaging Code

2. Configuration & Dimensions (Unit: mm)

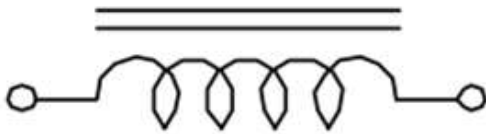


- Note: 1. The above PCB layout reference only.
 2. Marking: Inductance Code

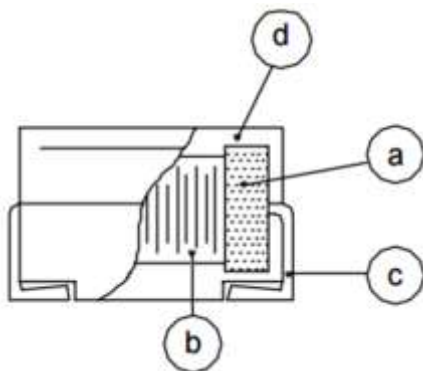
A	B	C	D	E
4.5±0.3	3.2±0.2	3.2±0.2	4.2±0.2	1.2±0.2
F	G	H	I	-
1.0±0.2	2.2 Ref	1.6 Ref	1.5 Ref	-

NOTE: Specifications subject to change without notice. Please check our website for latest information.

3. Schematic



4. Material List



- (a) Core
- (b) Wire
- (c) Terminal
- (d) Capsulate

5. General Specifications

- (a) Operating Temp.: - 40°C to + 125°C (including self-temperature rise)
- (b) Storage Temp.: -40°C to +125°C (on board)
- (c) All test data referenced to 25°C ambient.
- (d) Saturation Current (Isat) will cause inductance L0 to drop approximately 10%.
- (e) Storage Condition (Component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity: Less than 60% RH

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6. Electrical Characteristics

Part Number	Inductance (μH) @0A	Tolerance	Q Min	Test Frequency (MHz)	SRF (MHz) Min	DCR (Ω) Max	IDC (mA) Max
WI453232-R10□F	0.10	M	35	25.200	300.0	0.18	800
WI453232-R12□F	0.12	M	35	25.200	280.0	0.20	770
WI453232-R15□F	0.15	M	35	25.200	250.0	0.22	730
WI453232-R18□F	0.18	M	35	25.200	220.0	0.24	700
WI453232-R22□F	0.22	M	40	25.200	200.0	0.25	665
WI453232-R27□F	0.27	M	40	25.200	180.0	0.26	635
WI453232-R33□F	0.33	M	40	25.200	165.0	0.28	605
WI453232-R39□F	0.39	M	40	25.200	150.0	0.30	575
WI453232-R47□F	0.47	M	40	25.200	145.0	0.32	545
WI453232-R56□F	0.56	M	40	25.200	140.0	0.36	520
WI453232-R68□F	0.68	M	40	25.200	135.0	0.40	500
WI453232-R82□F	0.82	M	40	25.200	130.0	0.45	475
WI453232-1R0□F	1.0	K	50	7.960	100.0	0.50	450
WI453232-1R2□F	1.2	K	50	7.960	80.0	0.55	430
WI453232-1R5□F	1.5	K	50	7.960	70.0	0.60	410
WI453232-1R8□F	1.8	K	50	7.960	60.0	0.65	390
WI453232-2R2□F	2.2	K	50	7.960	55.0	0.70	380
WI453232-2R7□F	2.7	K	50	7.960	50.0	0.75	370
WI453232-3R3□F	3.3	K	50	7.960	45.0	0.80	355
WI453232-3R9□F	3.9	K	50	7.960	40.0	0.90	330

Note:

Tolerance: J=±5%, K=±10%

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Part Number	Inductance (μ H) @0A	Tolerance	Q Min	Test Frequency (MHz)	SRF (MHz) Min	DCR (Ω) Max	IDC (mA) Max
WI453232-4R7□F	4.7	K	50	7.960	35.0	1.00	315
WI453232-5R6□F	5.6	K	50	7.960	33.0	1.10	300
WI453232-6R8□F	6.8	K	50	7.960	27.0	1.20	285
WI453232-8R2□F	8.2	K	50	7.960	25.0	1.40	270
WI453232-100□F	10	K	50	2.520	20.0	1.60	250
WI453232-120□F	12	K	50	2.520	18.0	2.00	225
WI453232-150□F	15	K	50	2.520	17.0	2.50	200
WI453232-180□F	18	K	50	2.520	15.0	2.80	190
WI453232-220□F	22	K	50	2.520	13.0	3.20	180
WI453232-270□F	27	K	50	2.520	12.0	3.60	170
WI453232-330□F	33	K	50	2.520	11.0	4.00	160
WI453232-390□F	39	K	50	2.520	10.0	4.50	150
WI453232-470□F	47	K	50	2.520	10.0	5.00	140
WI453232-560□F	56	K	50	2.520	9.0	5.50	135
WI453232-680□F	68	K	50	2.520	9.0	6.00	130
WI453232-820□F	82	K	50	2.520	8.0	7.00	120
WI453232-101□F	100	K	40	0.796	8.0	8.00	110
WI453232-121□F	120	K	40	0.796	6.0	8.00	110
WI453232-151□F	150	K	40	0.796	5.0	9.00	105
WI453232-181□F	180	K	40	0.796	5.0	9.50	102

Note:

Tolerance: K= \pm 10%, M= \pm 20%

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Part Number	Inductance (μH) @0A	Tolerance	Q Min	Test Frequency (MHz)	SRF (MHz) Min	DCR (Ω) Max	IDC (mA) Max
WI453232-221□F	220	K	40	0.796	4.0	10.00	100
WI453232-271□F	270	K	40	0.796	4.0	12.00	92
WI453232-331□F	330	K	40	0.796	3.5	14.00	85
WI453232-391□F	390	K	40	0.796	3.0	18.00	80
WI453232-471□F	470	K	40	0.796	3.0	26.00	62
WI453232-561□F	560	K	30	0.796	3.0	30.00	50
WI453232-681□F	680	K	30	0.796	3.0	30.00	50
WI453232-821□F	820	K	30	0.796	2.5	35.00	30
WI453232-102□F	1000	K	20	2.252	2.5	40.00	30

Note:

Tolerance: K=±10%, M=±20%

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7. Soldering Specification

Mildly activated rosin fluxes are preferred. Our terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

7-1. IR Soldering Reflow

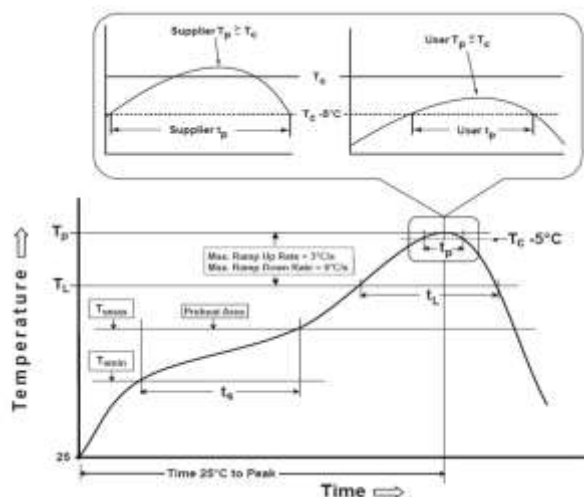
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020F).

7-2. Iron Reflow

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended (Figure 2).

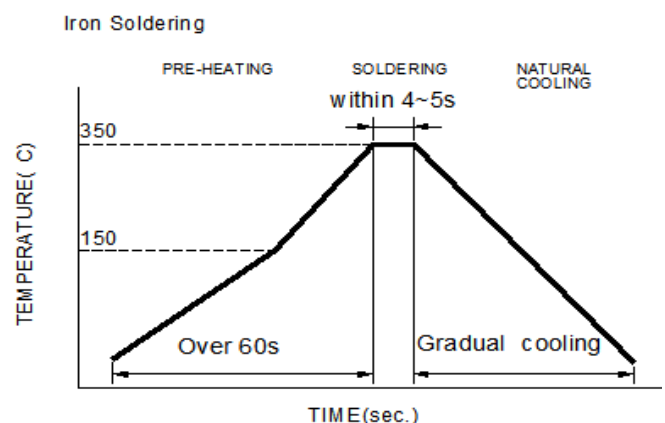
Note:

- (a) Preheat circuit and products to 150°C.
- (b) 350°C tip temperature (Max.)
- (c) Never contact the ceramic with the iron tip
- (d) 1.0mm tip diameter (Max.)
- (e) Use a 20 watt soldering iron with tip diameter of 1.0mm
- (f) Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Iron Soldering times : 1 times max

Figure 2: Iron soldering temperature profiles

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Table (1.1) Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat	
-Temperature Min (T_{smin})	150°C
-Temperature Max (T_{smax})	200°C
-Time (t_s) from (T_{smin} to T_{smax})	60-120seconds
Ramp-up rate (T_L to T_p)	3°C /second max.
Liquids temperature (T_L)	217°C
Time (t_L) maintained above T_L	60-150 seconds
Classification temperature (T_c)	See Table (1.2)
Time (t_p) at $T_c - 5^\circ\text{C}$ (T_p should be equal to or less than T_c .)	< 30 seconds
Ramp-down rate (T_p to T_L)	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

T_p: maximum peak package body temperature, **T_c**: the classification temperature.

For user (customer) **T_p** should be equal to or less than **T_c**.

Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020F.

7-3. Soldering Volume

Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below.

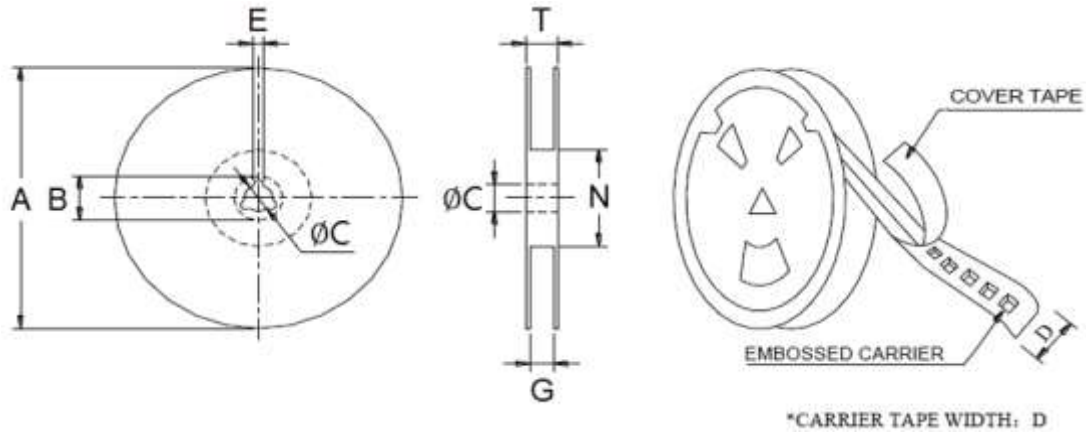
Minimum fillet height = soldering thickness + 25% product height.



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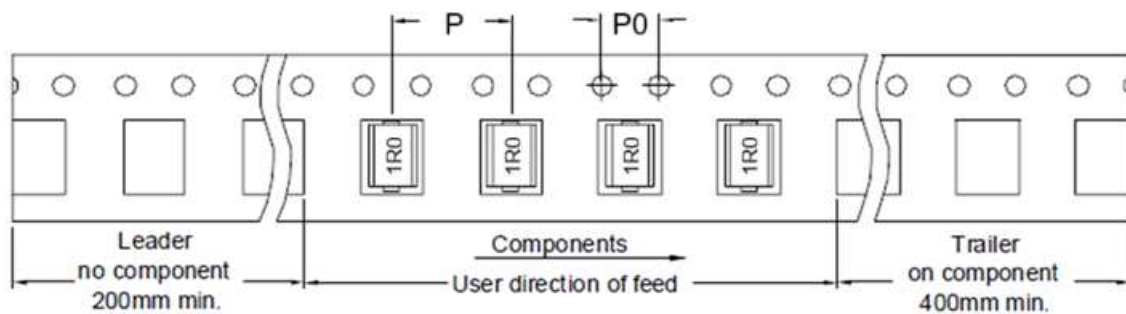
8. Packaging Information

8-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
	178.0 Ref	21.0 Ref	13.0 Ref	12.0 Ref
7"x12mm	E	G	N	T
	2.0 Ref	14.0 Max	50 Min	16.5 Ref

8-2. Tape Dimension (Unit: mm)



* There are no differentiation or directions of polarity (marking) in the packaging method.

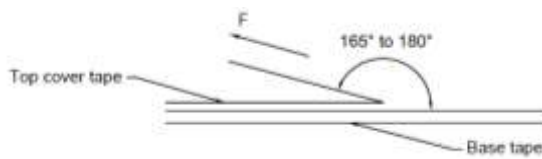
P	P0
8	4

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8-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	500
Carton	20,000

8-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, in the arrow direction under the following conditions.

(Referenced ANSI/EIA-481-D-2008 of 4.11 standard)

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed (mm/min)
5~35	45~85	860~1060	300±10

Tape Size	8 mm	12 to 56 mm	72 mm or Wider
Tearing Off Force (grams)	10~100	10~130	10~150

Application Notice

1. Storage Conditions

To maintain the solderability of terminal electrodes:

- (a) Products meet IPC/JEDEC J-STD-020F standard-MSL, level 1.
- (b) Recommended products should be used within 12 months from the time of delivery.
- (c) The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation

- (a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- (b) Vacuum pick up is strongly recommended for individual components.
- (c) Bulk handling should ensure that abrasion and mechanical shock are minimized.

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