

## 1. Part No. Expression

**WD3216F550A-RB-10**

(a) (b) (c) (d) (e)(f) (g)

(a) Series Code

(b) Dimension Code

(c) Material Code

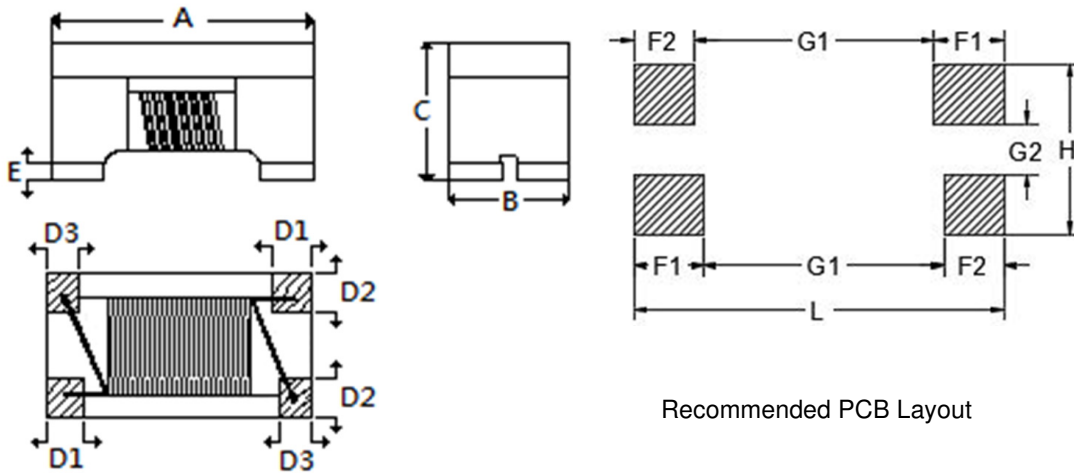
(d) Inductance Code

(e) Packaging Code

(f) Current Code

(g) Special Code

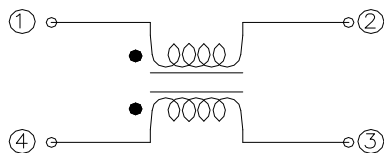
## 2. Configuration & Dimensions: (Unit:- mm)



Recommended PCB Layout

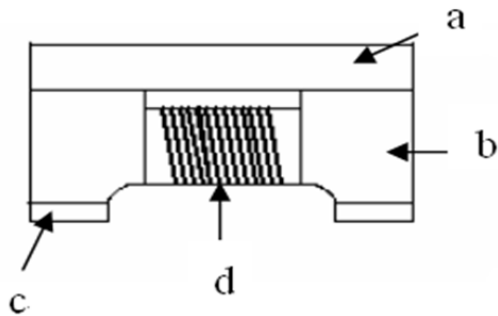
A	B	C	D1	D2	D3	E
3.4±0.2	1.6±0.2	2.0±0.2	0.64±0.1	0.58±0.1	0.54±0.1	0.12 Ref
L	H	G1	G2	F1	F2	
3.7 Ref	1.7 Ref	2.4 Ref	0.5 Ref	0.7 Ref	0.6 Ref	

## 3. Schematic



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

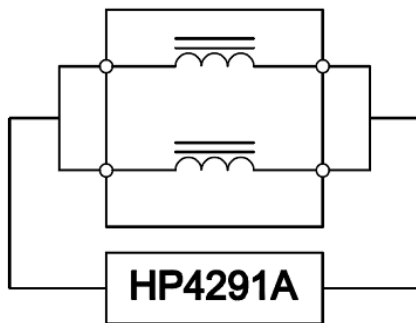
4. Material List



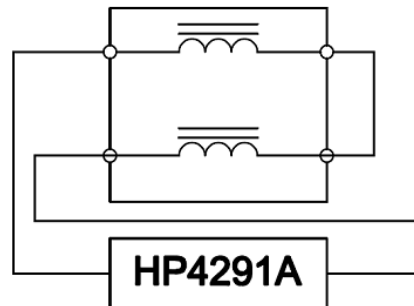
a)	Upper Plate
b)	Core
c)	Terminal
d)	Wire

5. Measuring Circuits 2 Lines

Common mode



Differential mode



6. General Specifications

- (a) Operating Temp. : -40°C to +85°C (Including self - temperature rise).
- (b) Storage Temp. : -40°C to +85°C (On board).
- (c) Irms: Based on temperature rise  $\Delta T$  40°C Max at rated current.
- (d) Storage Condition (Component in its packaging)
  - i) Temperature: Less than 40°C
  - ii) Humidity: 60% RH

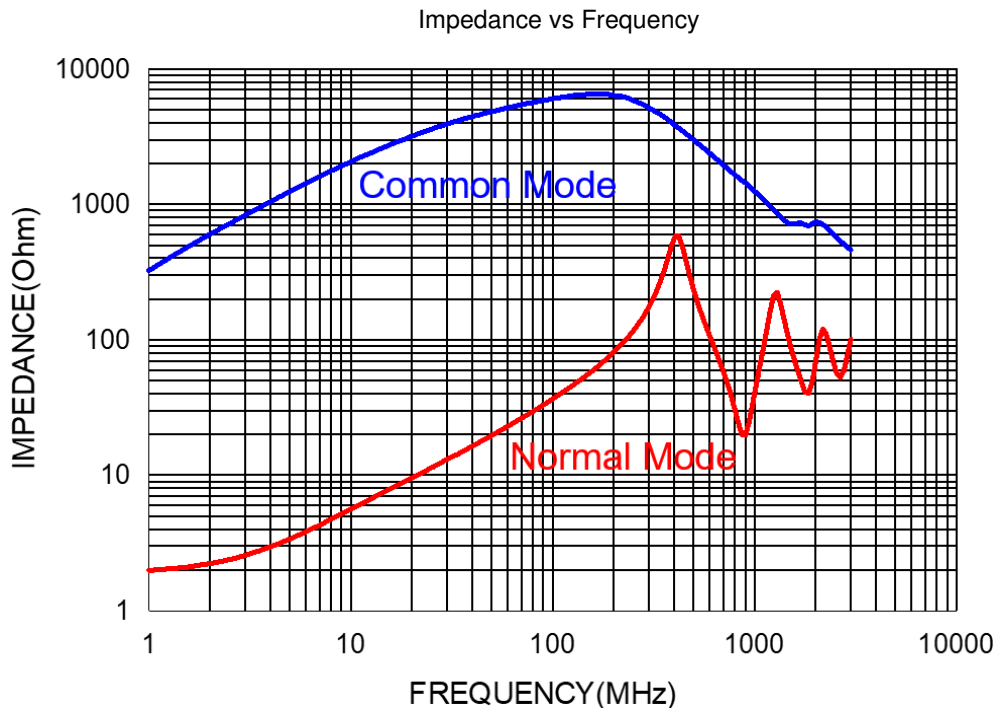
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**7. Electrical Characteristics**

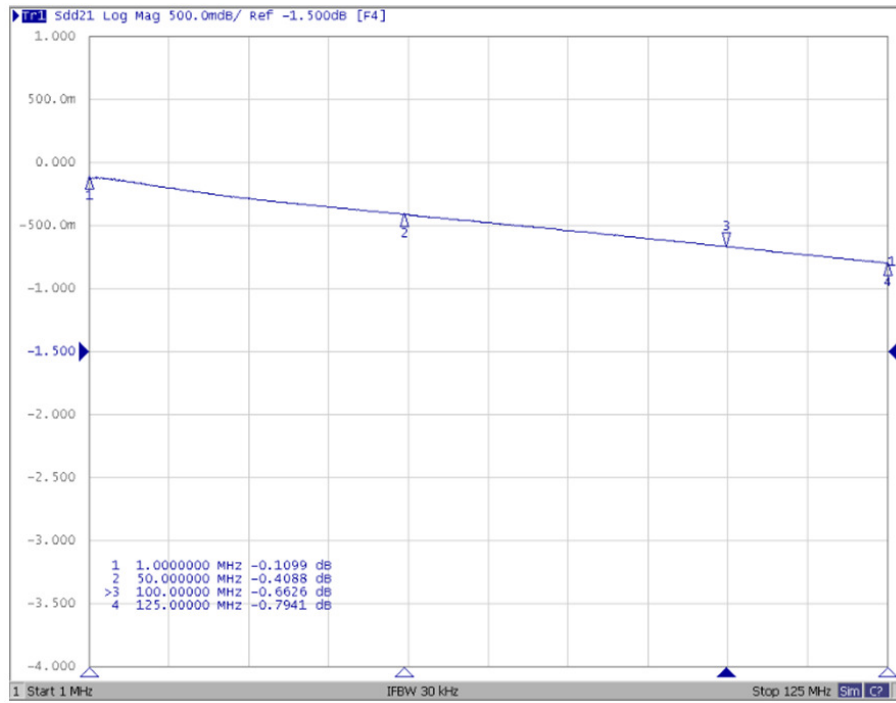
Part Number	Inductance (uH) @0.1V/100kHz Min	DCR (Ω) Max	Capacitance (pF) Max	Insertion Loss 1~125MHz (dB)	Return Loss 1~125MHz (dB)
	55	1.7	8	-1.0 Typ -1.2 Min	-15 Typ -20 Max
WD3216F550A-RB-10	Rated Current (mA)	Rated Volt. (Vdc)	Withstand Volt. (Vdc) Max	IR (MΩ) Min	
	200	50	125	10	

**8. Characteristics Curves**

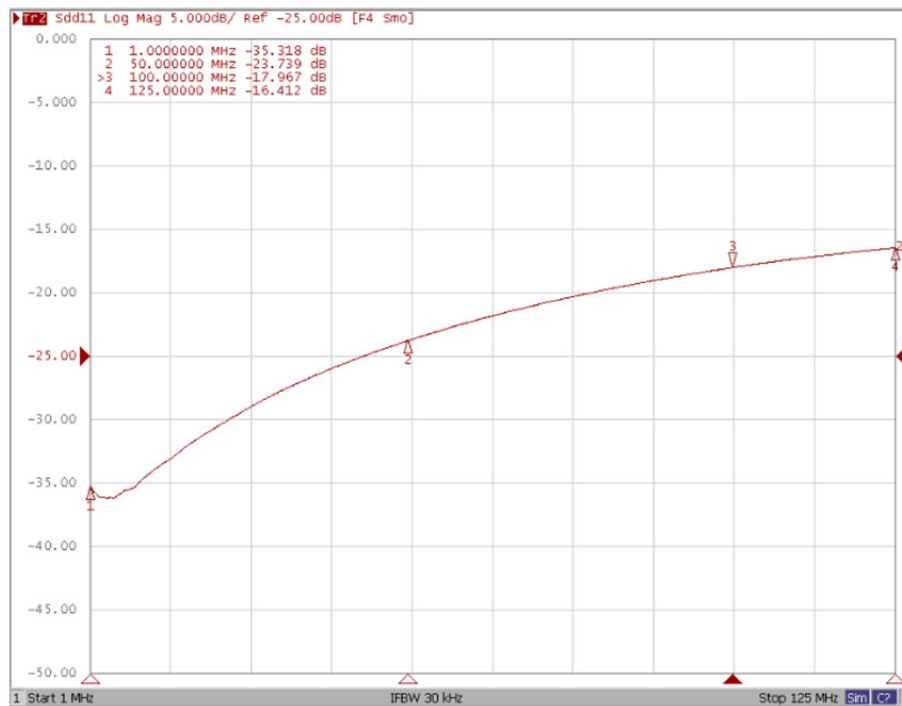


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Insertion Loss



Return Loss



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### 9. Soldering and Mounting

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.

#### 9-1 IR Soldering Reflow

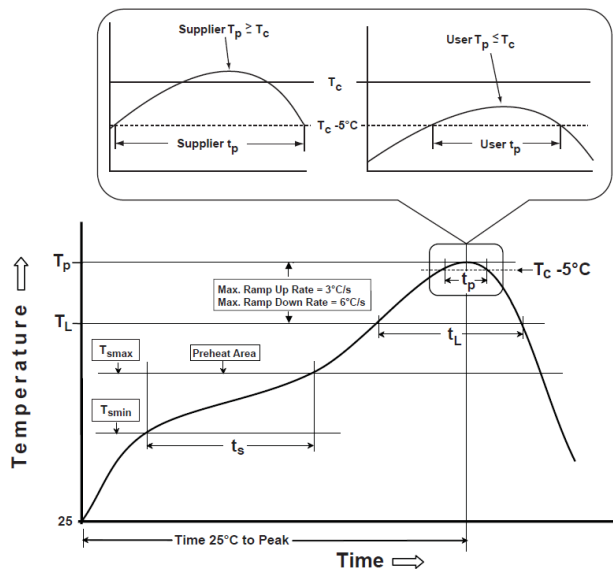
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

#### 9-2 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).

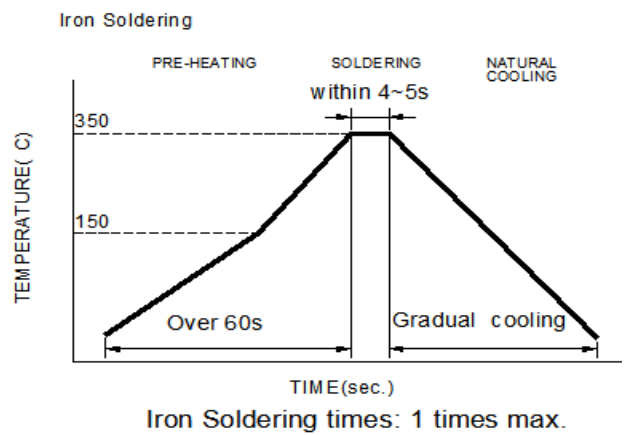
Note:

- a) Preheat circuit and products to 150°C.
- b) 355°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



Soldering iron method: 350± 5°C 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.
Liquidus 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<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

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

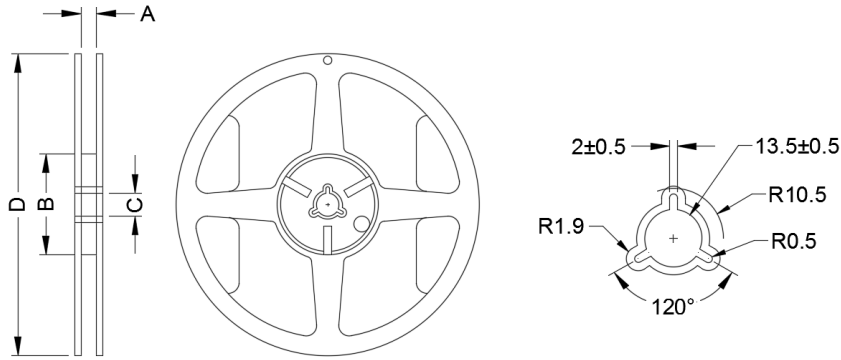
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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10. Packaging Information

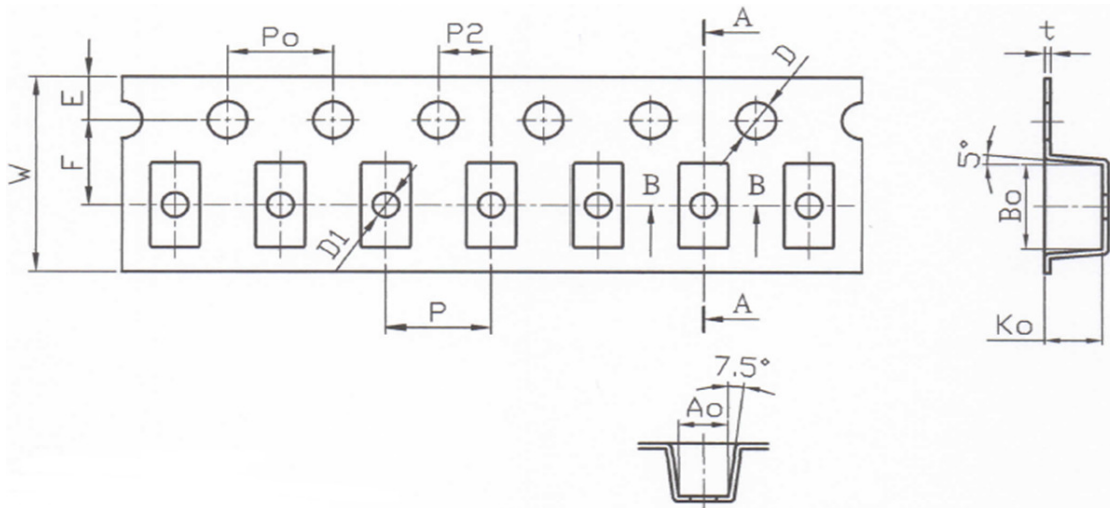
10-1 Reel Dimension



7" x 8mm

Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60±2	13.5±0.5	178±2

10-2 Tape Dimension / 8mm



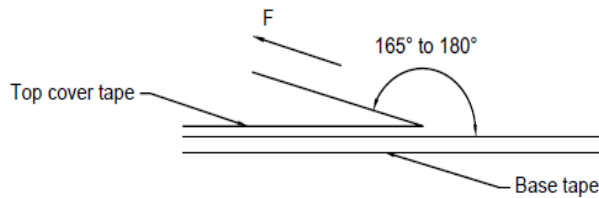
Series	P(mm)	Po(mm)	P2(mm)	Bo(mm)	Ao(mm)	Ko(mm)
	4.00±0.10	4.00±0.10	2.00±0.05	3.50±0.10	1.88±0.10	2.20±0.10
WD3216F	W(mm)	t(mm)	E(mm)	F(mm)	D(mm)	D1(mm)
	8.00±0.10	0.26±0.05	1.75±0.10	3.50±0.05	1.50+0.10/-0	1.00±0.10

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## 10-3 Packaging Quantity

Chip Size	WD3216F
Chip / Reel	2000
Inner Box	10000
Middle Box	50000
Carton	100000

## 10-4 Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

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

## Application Notice:

### 1. Storage Conditions:

To maintain the solderability of terminal electrodes:

- Recommended products should be used within 12 months from the time of delivery.
- The packaging material should be kept where no chlorine or sulfur exists in the air.

### 2. Transportation:

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

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