

SPECIFICATION FOR APPROVAL

<p>CUSTOMER'S APPROVAL CHOP</p> <p>Approval's condition: _____</p> <p>Approved date: _____</p>
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KINDLY RETURN A SET WITH YOUR COMPANY'S OFFICIAL
STAMP ON APPROVAL OF THIS ITEM

CUSTOMER'S NAME: _____

CUSTOMER'S MODEL NO. : _____

CUSTOMER'S PART NO. : _____

DESCRIPTION: _____
EFD20

Semitel'S MODEL NO. : _____
EFD20-457

VERSION: _____
A

DATE: _____
2020/8/4

Attachments:

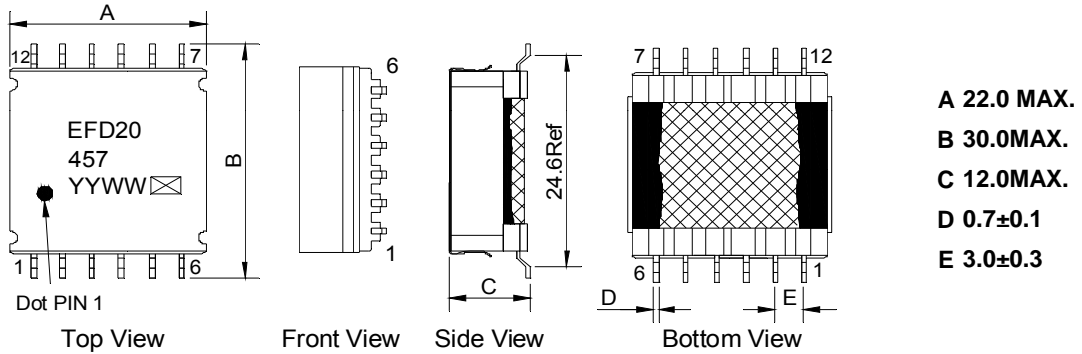
- Product specification
- Sample Qty.:
- Test data

Prepared By	Checked By	Approved By
Hebe Deng 2020/8/4	Pensee 2020/8/4	Alan Wong 2020/8/4

Semitel International Ltd.,	TEL: 886-2-86922121 FAX: 886-2-26483379
www.semitelint.com	12F, No.183, Sec.1, Datong Rd., Xizhi Dist., New Taipei City 22145, Taiwan

Product Specification

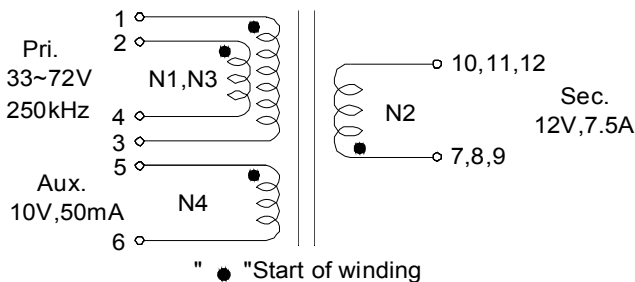
1. Physical Dimensions (Unit:mm)



Notes:

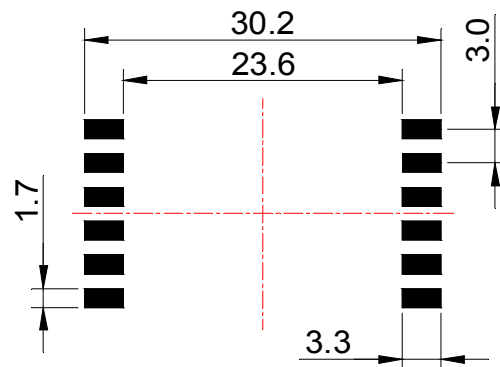
- *Marking type is laser printing
- *YY: Year Code; WW: Week Code
- * :When making samples, S is used to represent the product is a sample.
- * :Use different letters or numbers to represent the products are produced from different production lines .
- *Size B not including soldering tags
- *Coplanarity Requirement: Less than 0.15mm

2. Connection

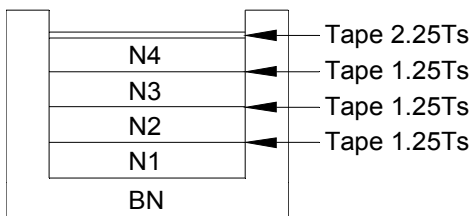


- *Customer to tie terminals 1&2,3&4,7&8&9 and 10&11&12 on PC board.
- *Application of the transformer allows for the leadwires between terminals 1&2,3&4,7&8&9 and 10&11&12 to solder bridge.

3.Recommended Pad Layout (Unit:mm)



4.Structure of Products



5.No of Turns & Wire Spec

No	No of Pin	Turns	Wire Spec
N1	1--3	11 Ts	ø0.28mm*4P P180
N2	7,8,9-10,11,12	8 Ts	ø0.30mm*9P P180
N3	2--4	11 Ts	ø0.28mm*4P P180
N4	5--6	7 Ts	ø0.20mm*2P P180

Semitel'S MODEL NO. :	EFD20-457	CUSTOMER'S MODEL NO.:	
VERSION :	A	CUSTOMER'S PART NO. :	
DATE :	2020/8/4		

Product Specification

6. Electrical Characteristics

*Operating temperature:-40°C to +125°C.

*Storage temperature range: -40°C to +125°C .

Items	Winding	Specifications	Test Conditions
Inductance	L(1,2-3,4)	180uH+35%/-30% (No Gap)	at 100kHz,0.1Vrms
LK-Inductance	LK(1,2-3,4) Tie other	0.45uH MAX.	at 100kHz,0.1Vrms
DCR	R(1,2-3,4)	20mΩ MAX.	at 25°C
	R(5-6)	200mΩ MAX.	
	R(7,8,9-10,11,12)	10mΩ MAX.	
Turns Ratio	(1,2-3,4):(5-6):(7,8,9-10,11,12)	11:7:8;±3%	at 200kHz,0.1Vrms
Hi-Pot	Pri.To Sec.	1500VAC	5mA.3Sec
	Pri.To Aux.	500VAC	5mA.3Sec
	Win.To Core	750VAC	5mA.3Sec

7.Bill of Material

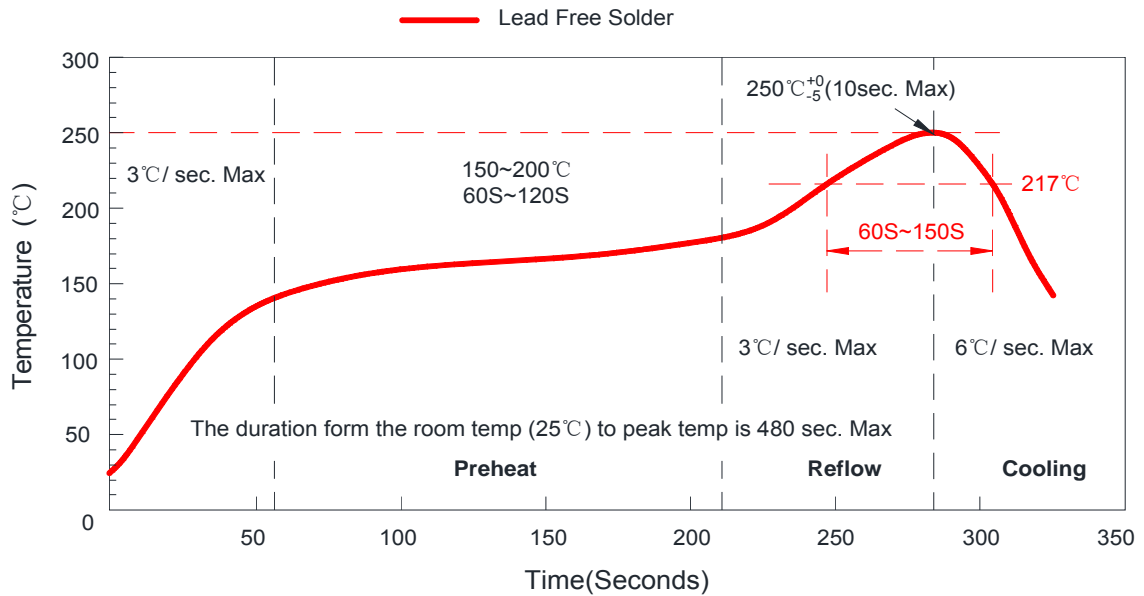
No	Items	Material Name	Manufacturer	UL File No	SGS File No
1	Core	FERRITE CORE P47	ACME ELECTRONIC CORPORATION	NIL	CE/2019/63232
2	Bobbin	PM-9630	SUMITOMO (SumiDurez) or Equivalent	E41429	SHAEC2002442505
3	CLIP	SUS301	TONG FENG or Equivalent	NIL	SZXEC1901434601
4	Copper Wire	Polyurethane bare wire (Cu) Polysol 180	ELEKTRISOLA or Equivalent	E258243	CE/2020/34972
OR	Copper Wire	Polyurethane wire UEWH/U	PACIFIC or Equivalent	E201757	A219029024010101E
5	Polyimide Tape	Brown adhesive plastic HN NC 0.025mm V-0	RUNSEA (RAYITEK)or Equivalent	E339977	SZXEC1900617511
6	EPOXY	TH320	TIAN HUAN or Equivalent	E257593	SZXEC1902353001
7	EPOXY	EB-360	CHANGFENG or Equivalent	NIL	SHAEC1925290501
8	Varnish	ZS-NJ-D938XX	ZHAOSHUN or Equivalent	E329120	CANEC1903703503
9	Solder	Lead free solder	HONGTAIZHOU or Equivalent	NIL	SZXEC2001415205

Semitel'S MODEL NO. :	EFD20-457	CUSToMER'S MODEL NO.:	
VERSION :	A	CUSToMER'S PART NO. :	
DATE :	2020/8/4		

Product Specification

8.Recommended Temperature Conditions of Air Reflow Soldering

Test Solderability Temperature Profile



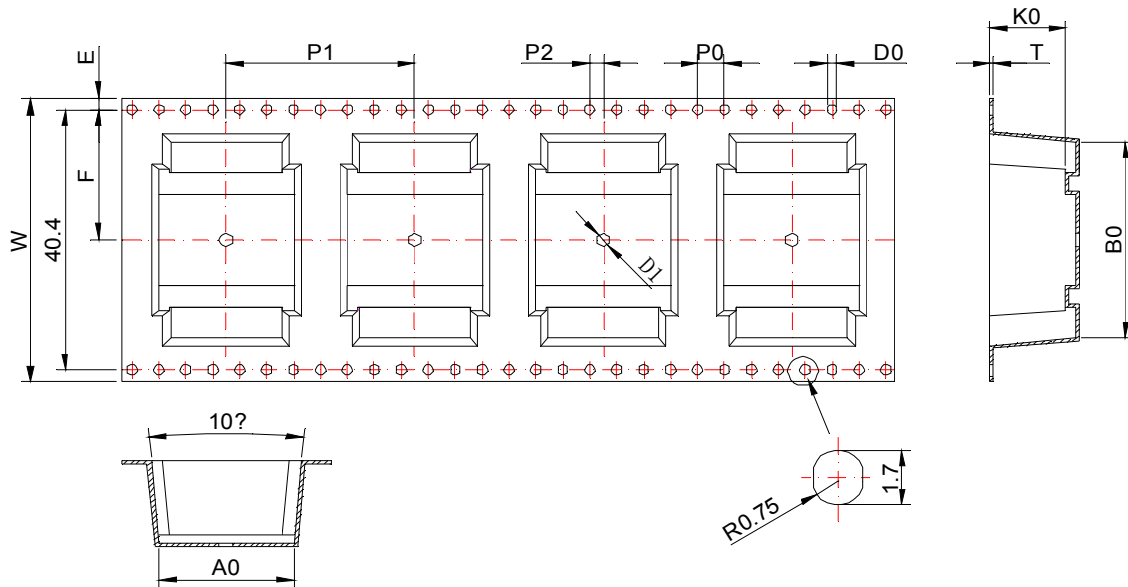
Profile Feature	
Average Ramp-Up Rate (T _{smax} to T _p)	3°C/Second Max.
Preheat	
-Temperature Min. (T _{smin})	150°C
-Temperature Max. (T _{smax})	200°C
-Time (T _{smin} to T _{smax})	60-120 Seconds
Time maintained above:	
-Temperature (TL)	217°C
-Time (TL)	60-150 Seconds
Peak/Classification Temperature (T _p)	250°C
Time within 5°C of actual PeakTemperature (T _p)	10 Seconds Max.
Ramp-Down Rate	6°C/Second Max.
Time 25°C to Peak Temperature	8 Minutes Max.

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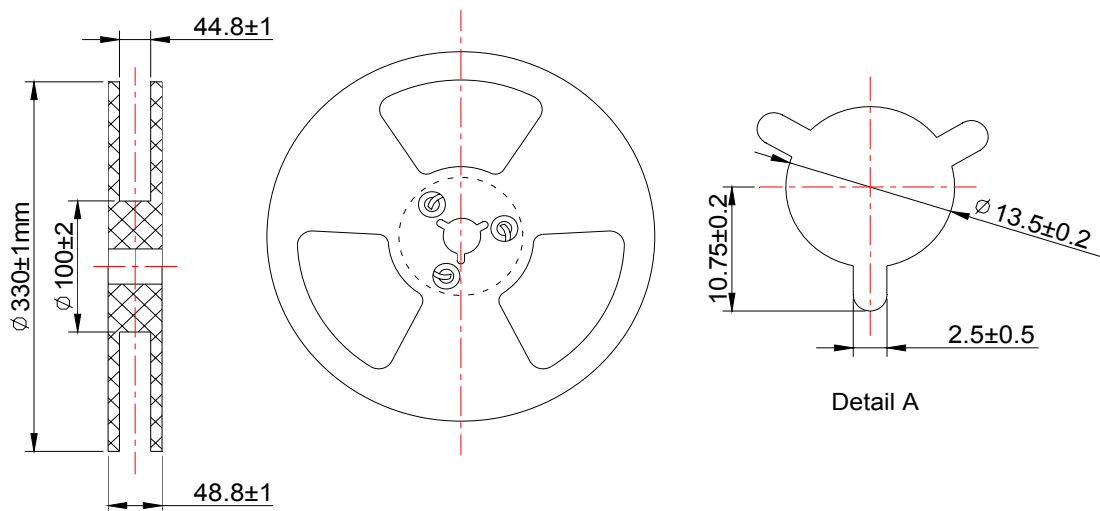
Product Specification

9. Tape and Reel Dimensions (Unit: mm)

*Packing information is according with EIA-841 standard, When W=32mm and other wider tapes that should have elongated sprocket holds on the other side.



ITEM	A0	B0	K0	P0	P1	P2
DIM	21.5 ± 0.3	30.5 ± 0.3	11.3 ± 0.3	4.0 ± 0.1	28.0 ± 0.1	2.0 ± 0.15
ITEM	W	T	E	F	D0	D1
DIM	44.0 ± 0.3	0.5 ± 0.05	1.75 ± 0.1	20.2 ± 0.15	∅ 1.5 ₀ ^{+0.1}	∅ 2.0 ₀ ^{+0.1}

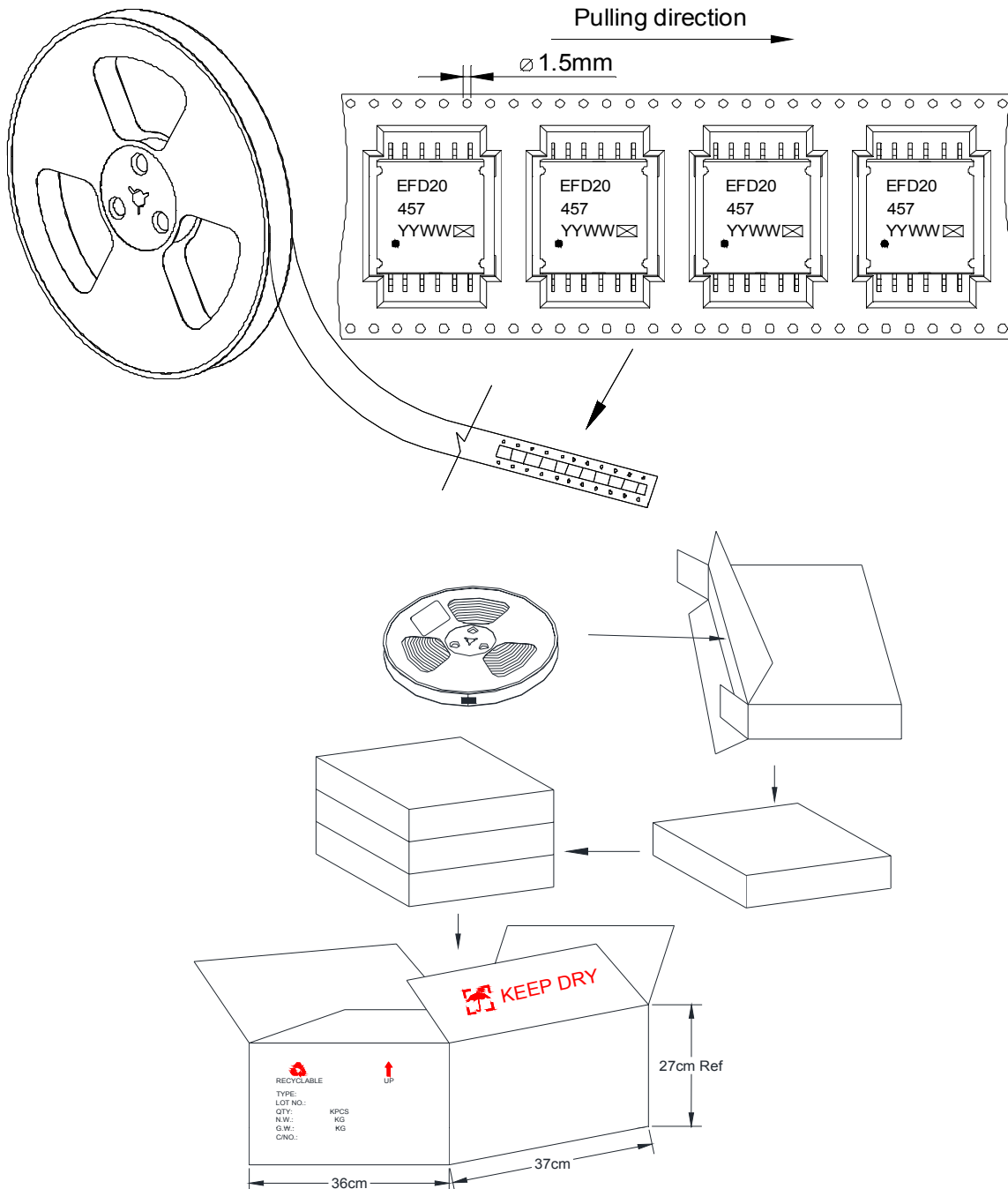


Semitel'S MODEL NO. :	EFD20-457	CUSTOMER'S MODEL NO.:	
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10.Packing Request

- (1), Every roll of the carrier tape can contain 125pcs products.
- (2), Every small packing box contains one rolls of carrier tape. Total quantity: 125pcs.
- (3), Every cartoon box contains 3 small packing boxes. Total quantity: 375pcs.



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Test Report

Test Instruments									
	HP4284A	HP4284A	DCR METER 131			HP4284A	CS2670A		
NO	Inductance	LK-Inductance	DCR			Turns Ratio	Hi-Pot		
	at 100kHz,0.1Vrms	at 100kHz,0.1Vrms	at 25°C			at 200kHz,0.1Vrms	5mA.3Sec		
	L(1,2-3,4)	LK(1,2-3,4) Tie other	R(1,2-3,4)	R(5-6)	R(7,8,9- 10,11,12)	(1,2-3,4):(5- 6):(7,8,9-10,11,12)	Pri.To Sec.	Pri.To Aux.	Win.To Core
	180uH+35%/- 30% (No Gap)	0.45uH MAX.	20mΩ MAX.	200mΩ MAX.	10mΩ MAX.	11:7:8;±3%	1500VAC	500VAC	750VAC
1									
2									
3									
4									
5									
MIN.	0.00	0.00	0.00	0.00	0.00				
MAX.	0.00	0.00	0.00	0.00	0.00				
AVG.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
Result	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Overall Dimensions Test						Measurement tools: Caliper (Unit:mm)			
NO	A	B	C	D	E				
	22.0 MAX.	30.0MAX.	12.0MAX.	0.7±0.1	3.0±0.3				
1									
2									
3									
4									
5									
MIN.	0.00	0.00	0.00	0.00	0.00				
MAX.	0.00	0.00	0.00	0.00	0.00				
AVG.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
Result	Passed	Passed	Passed	Passed	Passed				

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