

SPECIFICATION FOR APPROVAL

CUSTOMER'S APPROVAL CHOP
Approval's condition: _____
Approved date: _____

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. : _____

EFD20-419

VERSION: _____

A

DATE: _____

2020/3/13

Attachments:

- Product specification
- Sample Qty.:
- Test data

Prepared By	Checked By	Approved By
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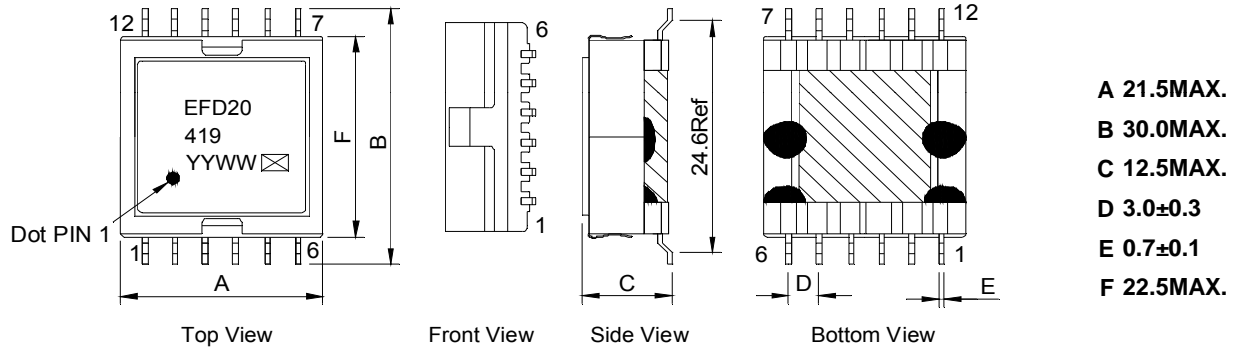
Revision Record

Version	Revision Date	Revision For Items	Reason For Revision
A	2020/3/13	New Revision	-

Semitel'S MODEL NO. :	EFD20-419	CUSTOMER'S MODEL NO.:	
VERSION :	A	CUSTOMER'S PART NO. :	
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Product Specification

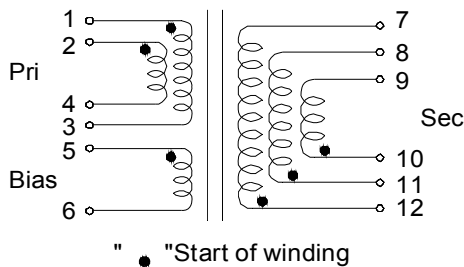
1.Physical Dimensions (Unit:mm)



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

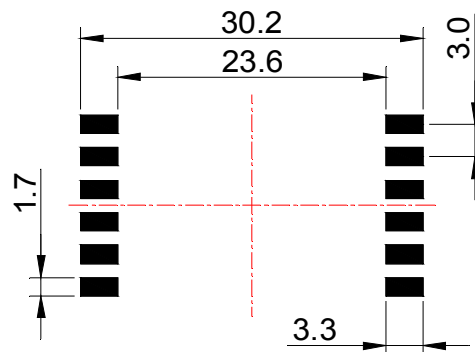
2. Connection



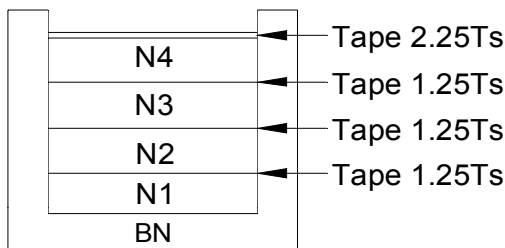
*Customer to tie terminals 1&2,3&4,7&8&9 and 10&11&12 on PC board.

*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	1,2 -- 3,4	22 Ts	ø0.28mm*2P P180
N2	10,11,12 -- 7,8,9	4 Ts	ø0.32mm*9P P180
N3	1,2 -- 3,4	22 Ts	ø0.28mm*2P P180
N4	5 -- 6	9 Ts	ø0.28mm*1P P180

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6. Electrical Characteristics

*Operating temperature:-40°C~+125°C.

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

Items	Winding	Specifications	Test Conditions
Inductance	L(1,2-3,4)	70uH±10%	at 250kHz,0.5Vrms
LK-Inductance	LK(1,2-3,4) Tie5,6,7,9,10,11,12	0.615uH MAX.	at 250kHz,0.5Vrms
DCR	R(1,2-3,4)	70mΩ MAX	at 25°C
	R(5-6)	310mΩ MAX	
	R (10,11,12-7,8,9)	6.5mΩ MAX	
Turn Ratio	(1,2-3,4):(5-6):(12,11,10-7,8,9)	22:9:4;±3%	at 250kHz,0.5Vrms
Hi-Pot	Pri to Sec	1500VAC	5 mA.3Sec
	Pri to Aux	500VAC	5 mA.3Sec
	Win to Core	750VAC	5 mA.3Sec

7.Bill of Material

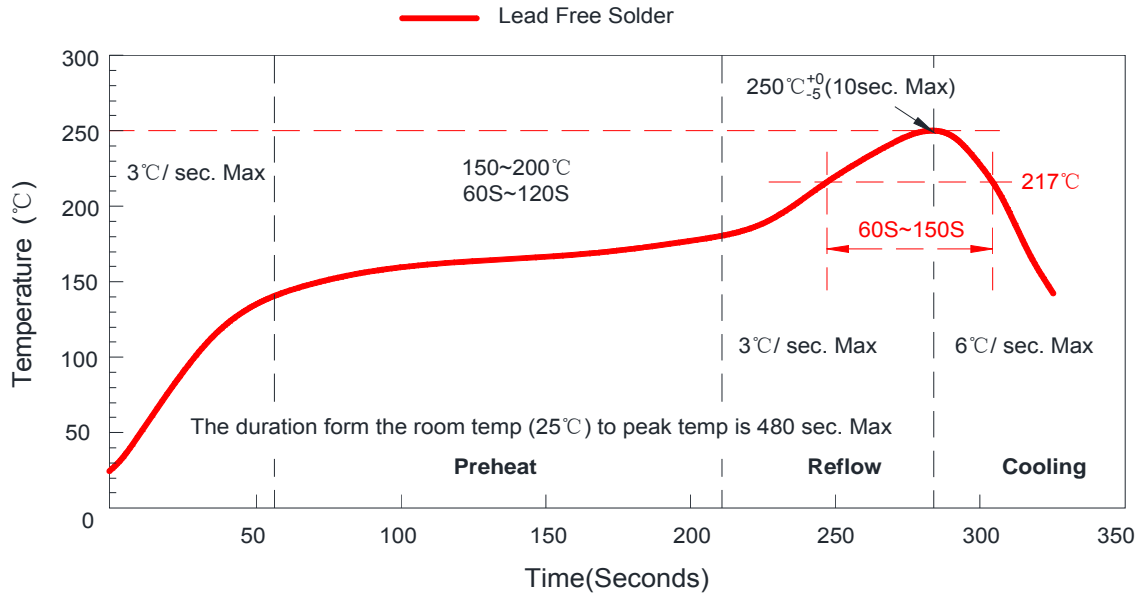
No	Items	Material Name	Manufacturer	UL File No	SGS File No
1	Core	FERRITE CORE JCP-95	FCRI or Equivalent	NIL	CANEC1913430901
2	Bobbin	PM-9630	SUMITOMO (SumiDurez) or Equivalent	E41429	SHAEC1904476901
3	CLIP	SUS301	TONG FENG or Equivalent	NIL	SZXEC1901434601
4	Copper Wire	Polysol 180	ELEKTRISOLA or Equivalent	E258243	CE/2019/37143
OR	Copper Wire	UEWH/U	PACIFIC or Equivalent	E201757	A2180198365101E
5	Polyimide Tape	HN,HV,HL,HE 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	CANEC1911577101

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8.Recommended Temperature Conditions of Air Reflow Soldering

Test Solderability Temperature Profile



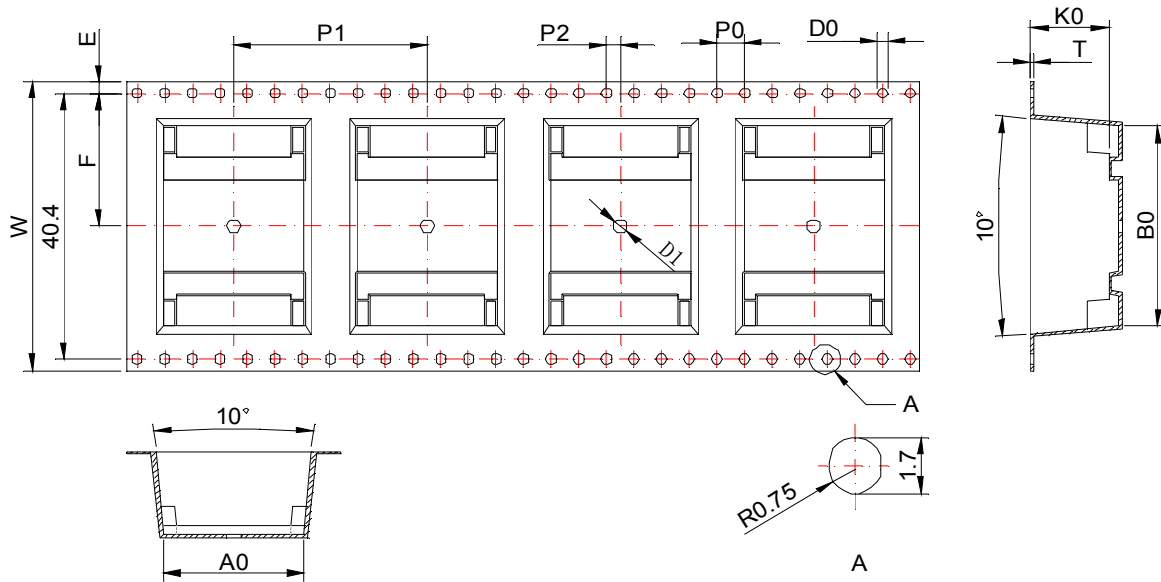
Profile Feature	
Average Ramp-Up Rate (T _{smax} to T _p)	3°C/Second Max.
Preheat	
-Temperature Min. (T _{smin})	150°C
-Temperature Max. (T _{smax})	200°C
-Time (T _{smin} to T _{smax})	60-120 Seconds
Time maintained above:	
-Temperature (T _L)	217°C
-Time (T _L)	60-150 Seconds
Peak/Classification Temperature (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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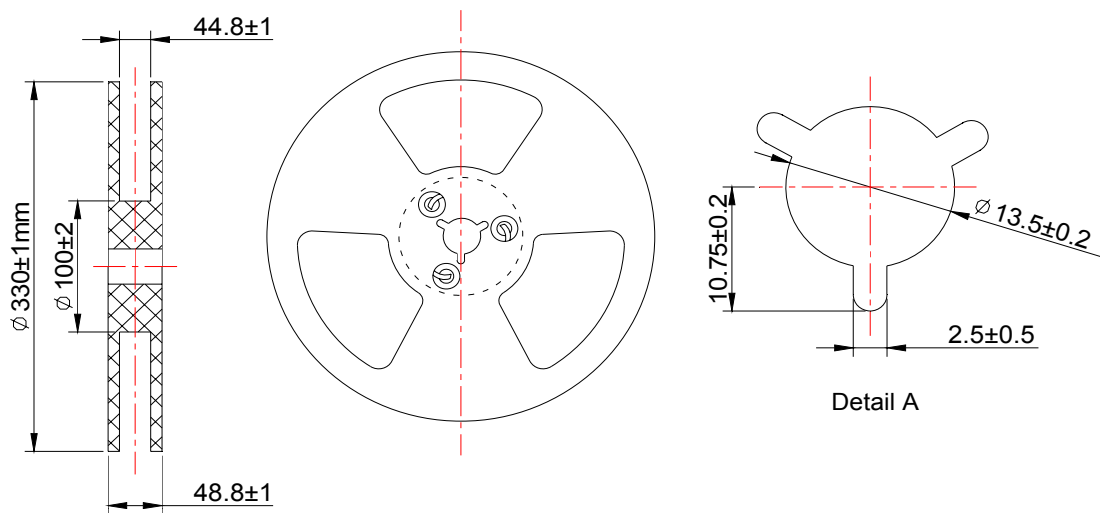
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9. Tape and Reel Dimensions (Unit: mm)

*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	20.3±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±0.1	∅ 2.0±0.1

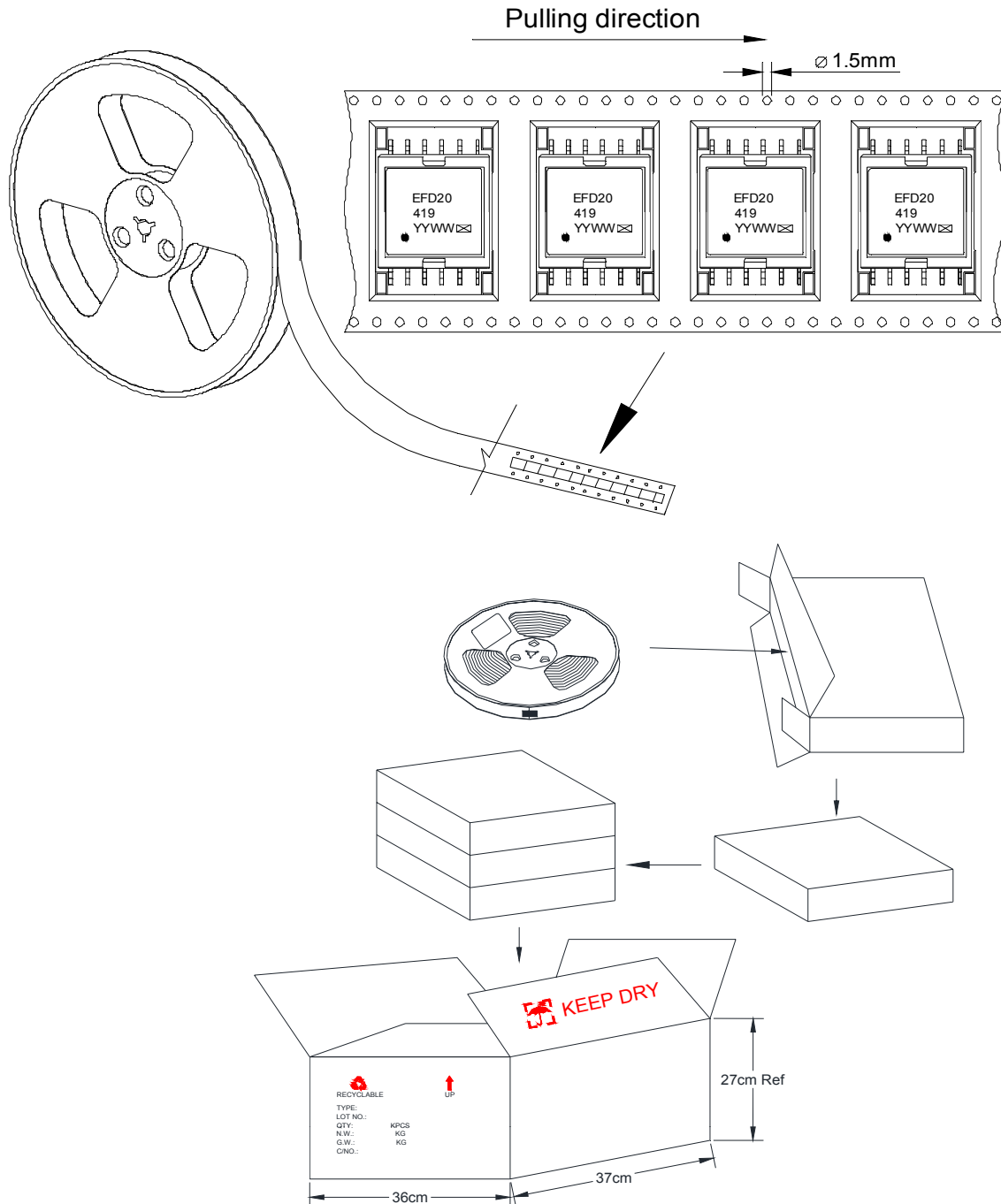


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10.Packing Request

- (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 carton box contains 3 small packing boxes. Total quantity: 375pcs.



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Test Report

Test Instruments									
HP4284A		DCR METER 131			HP4284A	CS2670A			
NO	Inductance	Inductance	DCR			Turn Ratio	Hi-Pot		
	at 250kHz,0.5Vrms	at 250kHz,0.5Vrms	at 25°C	at 25°C	at 25°C	at 250kHz,0.5Vrms	5 mA.3Sec	5 mA.3Sec	5 mA.3Sec
	L(1,2-3,4)	LK(1,2-3,4) Tie5,6,7,9,10,11 ,12	R(1,2-3,4)	R(5-6)	R (10,11,12- 7,8,9)	(1,2-3,4):(5- 6):(12,11,10- 7,8,9)	Pri to Sec	Pri to Aux	Win to Core
	70uH±10%	0.615uH MAX.	70mΩ MAX	310mΩ MAX	6.5mΩ MAX	22:9:4;±3%	1500VAC	500VAC	750VAC
1	70.80	0.509	56.40	108.40	4.70	PASS	PASS	PASS	PASS
2	70.60	0.507	55.70	107.70	4.60	PASS	PASS	PASS	PASS
3	70.80	0.505	56.20	108.20	4.70	PASS	PASS	PASS	PASS
4	70.90	0.507	55.60	106.90	4.80	PASS	PASS	PASS	PASS
5									
MIN.	70.60	0.505	55.60	106.90	4.60				
MAX.	70.90	0.509	56.40	108.40	4.80				
AVG.	70.78	0.507	55.98	107.80	4.70				
Result	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Overall Dimensions Test Measuring Tools:Callipers (Unit:mm)									
NO	A	B	C	D	E	F			
	21.5MAX.	30.0MAX.	12.5MAX.	3.0±0.3	0.7±0.1	22.5MAX.			
1									
2									
3									
4									
5									
MIN.	0.00	0.00	0.00	0.00	0.00	0.00			
MAX.	0.00	0.00	0.00	0.00	0.00	0.00			
AVG.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Result	Passed	Passed	Passed	Passed	Passed	Passed			

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