



●FEATURE

1. Molding Wound Chip Inductor.
2. Fit for power line & signal line circuit
3. To help you go pass the CE/FCC standard.
4. Operating Temperature -40 ~ 85°C



●APPLICATION

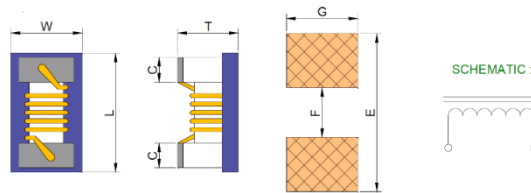
Mobil Device, Handheld Device, LowProfile Device, Panel.

●ORDERING INFORMATION

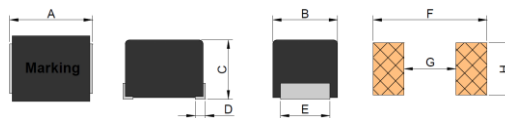
<u>WCF</u>	<u>2520</u>	<u>U</u>	<u>-5N0</u>	<u>T</u>
Series	Dimension (L*W*H)	Material code	Impedance (Ω)	Tolerance J=±5%, K=±10%

●SHAPE AND DIMENSION

2520 TYPE:



3225 TYPE:



2520F/4532 TYPE:



●SPECIFICATION

Unit: mm

TYPE	A	B	C	D	E	F	G	H
2520	2.70±0.30	2.50±0.30	2.00±0.30	0.50±0.15	3.30 Ref.	1.25 Ref.	2.60 Ref.	N/A
2520F	2.50±0.30	2.00±0.30	1.80±0.30	0.50±0.10	1.20±0.10	3.50 Ref.	1.50 Ref.	1.50 Ref.
3225	3.20±0.30	2.50±0.30	2.20±0.30	0.50±0.10	1.90±0.10	3.50 Ref.	1.00 Ref.	3.00 Ref.
4532	4.50±0.30	3.20±0.30	3.20±0.30	1.00±0.10	1.20±0.10	5.50 Ref.	2.00 Ref.	4.00 Ref.

**•ELECTRICAL CHARACTERISTICS**

Part Number	L – Value (μH)	Tolerance (T)	Q value (Min)	L&Q Test Freq. (MHz)	S.R.F (MHz) (Min)	DCR (Ohm) (Max)	IDC (mA) (Max)
WCF2520-5N0T	0.005	K	10	100	3000	0.25	2000
WCF2520-10NT	0.010	K	10	100	2500	0.25	1800
WCF2520-12NT	0.012	K	15	100	2400	0.26	1700
WCF2520-15NT	0.015	K	15	100	2300	0.28	1600
WCF2520-18NT	0.018	K	15	100	2200	0.30	1550
WCF2520-22NT	0.022	J,K	20	100	2100	0.35	1500
WCF2520-27NT	0.027	J,K	20	100	2000	0.40	1450
WCF2520-33NT	0.033	J,K	30	100	1600	0.42	1400
WCF2520-39NT	0.039	J,K	35	100	1500	0.45	1350
WCF2520-47NT	0.047	J,K	35	100	1400	0.50	1300
WCF2520-56NT	0.056	J,K	35	100	1300	0.60	1250
WCF2520-68NT	0.068	J,K	35	100	1200	0.65	1240
WCF2520-82NT	0.082	J,K	35	100	1100	0.75	1230
WCF2520-R10T	0.100	J,K	35	100	800	0.80	1220
WCF2520-R12T	0.120	J,K	30	25.200	700	0.30	900
WCF2520-R15T	0.150	J,K	30	25.200	550	0.35	900
WCF2520-R18T	0.180	J,K	30	25.200	500	0.40	850
WCF2520-R22T	0.220	J,K	30	25.200	450	0.50	840
WCF2520-R27T	0.270	J,K	30	25.200	425	0.55	830
WCF2520-R33T	0.330	J,K	30	25.200	400	0.60	820
WCF2520-R39T	0.390	J,K	30	25.200	375	0.65	810
WCF2520-R47T	0.470	J,K	30	25.200	350	0.68	800
WCF2520-R56T	0.560	J,K	30	25.200	325	0.75	800
WCF2520-R68T	0.680	J,K	30	25.200	300	0.85	800
WCF2520-R82T	0.820	J,K	30	25.200	260	1.00	800
WCF2520-1R0T	1.000	J,K	25	7.960	245	1.10	800
WCF2520-1R2T	1.200	J,K	25	7.960	230	1.20	790
WCF2520-1R5T	1.500	J,K	25	7.960	182	1.30	750
WCF2520-1R8T	1.800	J,K	25	7.960	135	1.45	750
WCF2520-2R2T	2.200	J,K	25	7.960	105	1.55	750
WCF2520-2R7T	2.700	J,K	25	7.960	70	1.70	740
WCF2520-3R3T	3.300	J,K	25	7.960	55	1.90	730
WCF2520-3R9T	3.900	J,K	25	7.960	48	2.10	700
WCF2520-4R7T	4.700	J,K	25	7.960	43	2.30	650
WCF2520-5R6T	5.600	J,K	20	7.960	42	2.50	640
WCF2520-6R8T	6.800	J,K	20	7.960	39	2.70	630
WCF2520-8R2T	8.200	J,K	20	7.960	36	3.05	600
WCF2520-100T	10.000	J,K	15	2.520	33	3.50	680
WCF2520-120T	12.000	J,K	15	2.520	30	3.80	650
WCF2520-150T	15.000	J,K	15	2.520	26	4.40	500
WCF2520-180T	18.000	J,K	15	2.520	24	4.80	450
WCF2520-220T	22.000	J,K	15	2.520	22	5.50	450
WCF2520-270T	27.000	J,K	15	2.520	21	6.30	430
WCF2520-330T	33.000	J,K	15	2.520	20	7.10	380
WCF2520-390T	39.000	J,K	10	2.520	18	9.50	330



WCF2520-470T	47.000	J,K	10	2.520	17	11.10	300
WCF2520-560T	56.000	J,K	10	2.520	16	12.10	270
WCF2520-680T	68.000	J,K	10	2.520	15	16.60	250
WCF2520-820T	82.000	J,K	10	2.520	13	19.00	200
WCF2520-101T	100.000	J,K	8	0.796	12	21.00	120

T=Tolerance: J=±5%, K=±10%

Part Number	L – Value (uH)	Tolerance (T)	Q value (Min)	L&Q Test Freq. (MHz)	S.R.F (MHz) (Min)	DCR (Ohm) (Max)	IDC (mA) (Max)
WCF2520F-R22T	0.220	J,K	25	25.200	230	0.50	430
WCF2520F-R27T	0.220	J,K	25	25.200	210	0.55	420
WCF2520F-R33T	0.330	J,K	25	25.200	190	0.60	400
WCF2520F-R39T	0.390	J,K	25	25.200	175	0.65	375
WCF2520F-R47T	0.470	J,K	25	25.200	160	0.68	350
WCF2520F-R56T	0.560	J,K	25	25.200	150	0.75	325
WCF2520F-R68T	0.680	J,K	25	25.200	135	0.85	300
WCF2520F-R82T	0.820	J,K	25	25.200	125	1.00	260
WCF2520F-1R0T	1.000	J,K	30	7.960	115	1.10	245
WCF2520F-1R2T	1.200	J,K	30	7.960	100	1.20	230
WCF2520F-1R5T	1.500	J,K	30	7.960	90	1.30	220
WCF2520F-1R8T	1.800	J,K	30	7.960	85	1.45	210
WCF2520F-2R2T	2.200	J,K	30	7.960	75	1.55	200
WCF2520F-2R7T	2.700	J,K	30	7.960	55	1.70	195
WCF2520F-3R3T	3.300	J,K	30	7.960	48	1.90	185
WCF2520F-3R9T	3.900	J,K	30	7.960	43	2.10	180
WCF2520F-4R7T	4.700	J,K	30	7.960	40	2.30	175
WCF2520F-5R6T	5.600	J,K	25	7.960	36	2.50	170
WCF2520F-6R8T	6.800	J,K	25	7.960	33	2.70	165
WCF2520F-8R2T	8.200	J,K	25	7.960	30	3.05	160
WCF2520F-100T	10.000	J,K	25	2.520	27	3.50	155
WCF2520F-120T	12.000	J,K	25	2.520	23	3.80	150
WCF2520F-150T	15.000	J,K	25	2.520	20	4.40	140
WCF2520F-180T	18.000	J,K	25	2.520	18	4.80	130
WCF2520F-220T	22.000	J,K	25	2.520	17	5.50	125
WCF2520F-270T	27.000	J,K	25	2.520	16	6.30	115
WCF2520F-330T	33.000	J,K	25	2.520	15	7.10	110
WCF2520F-390T	39.000	J,K	20	2.520	14	9.50	90
WCF2520F-470T	47.000	J,K	20	2.520	13	11.00	80
WCF2520F-560T	56.000	J,K	20	2.520	12	12.10	75
WCF2520F-680T	68.000	J,K	20	2.520	11	16.60	70
WCF2520F-820T	82.000	J,K	20	2.520	10	19.00	66
WCF2520F-101T	100.000	J,K	15	0.796	9	21.00	60

T=Tolerance: J=±5%, K=±10%



Part Number	L – Value (μ H)	Tolerance (T)	Q value (Min)	L&Q Test Freq. (MHz)	S.R.F (MHz) (Min)	DCR (Ohm) (Max)	IDC (mA) (Max)
WCF3225-R12T	0.12	J,K	30	25.200	500	0.22	450
WCF3225-R22T	0.22	J,K	30	25.200	350	0.32	450
WCF3225-R33T	0.33	J,K	30	25.200	300	0.40	450
WCF3225-R39T	0.39	J,K	30	25.200	250	0.45	450
WCF3225-R47T	0.47	J,K	30	25.200	250	0.50	450
WCF3225-R56T	0.56	J,K	30	25.200	180	0.55	450
WCF3225-R68T	0.68	J,K	30	25.200	160	0.60	450
WCF3225-R82T	0.82	J,K	30	25.200	140	0.65	450
WCF3225-1R0T	1.00	J,K	30	7.960	120	0.70	400
WCF3225-1R2T	1.20	J,K	30	7.960	100	0.75	390
WCF3225-1R5T	1.50	J,K	30	7.960	85	0.85	370
WCF3225-1R8T	1.80	J,K	30	7.960	80	0.90	350
WCF3225-2R2T	2.20	J,K	30	7.960	75	1.00	320
WCF3225-2R7T	2.70	J,K	30	7.960	70	1.10	290
WCF3225-3R3T	3.30	J,K	30	7.960	60	1.20	260
WCF3225-3R9T	3.90	J,K	30	7.960	55	1.30	250
WCF3225-4R7T	4.70	J,K	30	7.960	50	1.50	220
WCF3225-5R6T	5.60	J,K	30	7.960	45	1.60	200
WCF3225-6R8T	6.80	J,K	30	7.960	40	1.80	180
WCF3225-8R2T	8.20	J,K	30	7.960	35	2.00	170
WCF3225-100T	10.00	J,K	30	2.520	30	2.10	150
WCF3225-120T	12.00	J,K	30	2.520	20	2.50	140
WCF3225-150T	15.00	J,K	30	2.520	20	2.80	130
WCF3225-180T	18.00	J,K	30	2.520	20	3.30	120
WCF3225-220T	22.00	J,K	30	2.520	20	3.70	110
WCF3225-270T	27.00	J,K	30	2.520	20	5.00	80
WCF3225-330T	33.00	J,K	30	2.520	17	5.60	70
WCF3225-390T	39.00	J,K	30	2.520	16	6.40	65
WCF3225-470T	47.00	J,K	30	2.520	15	7.00	60
WCF3225-560T	56.00	J,K	30	2.520	13	8.00	55
WCF3225-680T	68.00	J,K	30	2.520	12	9.00	50
WCF3225-820T	82.00	J,K	30	2.520	11	10.00	45
WCF3225-101T	100.00	J,K	20	0.796	10	11.00	40
WCF3225-121T	120.00	J,K	20	0.796	10	11.00	70
WCF3225-151T	150.00	J,K	20	0.796	8	15.00	65
WCF3225-181T	180.00	J,K	20	0.796	7	17.00	60
WCF3225-221T	220.00	J,K	20	0.796	7	21.00	50

T=Tolerance: J= \pm 5%, K= \pm 10%



Part Number	L – Value (μ H)	Tolerance (T)	Q value (Min)	L&Q Test Freq. (MHz)	S.R.F (MHz) (Min)	DCR (Ohm) (Max)	IDC (mA) (Max)
WCF4532-R10T	0.10	J,K	35	25.200	300	0.18	800
WCF4532-R12T	0.12	J,K	35	25.200	280	0.20	770
WCF4532-R15T	0.15	J,K	35	25.200	250	0.22	730
WCF4532-R18T	0.18	J,K	35	25.200	220	0.24	700
WCF4532-R22T	0.22	J,K	40	25.200	200	0.25	665
WCF4532-R27T	0.27	J,K	40	25.200	180	0.26	635
WCF4532-R33T	0.33	J,K	40	25.200	165	0.28	605
WCF4532-R39T	0.39	J,K	40	25.200	150	0.30	575
WCF4532-R47T	0.47	J,K	40	25.200	145	0.32	545
WCF4532-R56T	0.56	J,K	40	25.200	140	0.36	520
WCF4532-R68T	0.68	J,K	40	25.200	135	0.40	500
WCF4532-R82T	0.82	J,K	40	25.200	130	0.45	475
WCF4532-1R0T	1.00	J,K	50	7.960	100	0.50	450
WCF4532-1R2T	1.20	J,K	50	7.960	80	0.55	430
WCF4532-1R5T	1.50	J,K	50	7.960	70	0.60	410
WCF4532-1R8T	1.80	J,K	50	7.960	60	0.65	390
WCF4532-2R2T	2.20	J,K	50	7.960	55	0.70	380
WCF4532-2R7T	2.70	J,K	50	7.960	50	0.75	370
WCF4532-3R3T	3.30	J,K	50	7.960	45	0.80	355
WCF4532-3R9T	3.90	J,K	50	7.960	40	0.90	330
WCF4532-4R7T	4.70	J,K	50	7.960	35	1.00	315
WCF4532-5R6T	5.60	J,K	50	7.960	33	1.10	300
WCF4532-6R8T	6.80	J,K	50	7.960	27	1.20	285
WCF4532-8R2T	8.20	J,K	50	7.960	25	1.40	270
WCF4532-100T	10.00	J,K	50	2.520	20	1.60	250
WCF4532-120T	12.00	J,K	50	2.520	18	2.00	225
WCF4532-150T	15.00	J,K	50	2.520	17	2.50	200
WCF4532-180T	18.00	J,K	50	2.520	15	2.80	190
WCF4532-220T	22.00	J,K	50	2.520	13	3.20	180
WCF4532-270T	27.00	J,K	50	2.520	12	3.60	170
WCF4532-330T	33.00	J,K	50	2.520	11	4.00	160
WCF4532-390T	39.00	J,K	50	2.520	10	4.50	150
WCF4532-470T	47.00	J,K	50	2.520	10	5.00	140
WCF4532-560T	56.00	J,K	50	2.520	9	5.50	135
WCF4532-680T	68.00	J,K	50	2.520	9	6.00	130
WCF4532-820T	82.00	J,K	50	2.520	8	7.00	120
WCF4532-101T	100.00	J,K	40	0.796	8	8.00	110
WCF4532-121T	120.00	J,K	40	0.796	6	8.00	110
WCF4532-151T	150.00	J,K	40	0.796	5	9.00	105
WCF4532-181T	180.00	J,K	40	0.796	5	9.50	102
WCF4532-221T	220.00	J,K	40	0.796	4	10.00	100
WCF4532-271T	270.00	J,K	40	0.796	4	12.00	92
WCF4532-331T	330.00	J,K	40	0.796	3.5	14.00	85
WCF4532-391T	390.00	J,K	40	0.796	3	18.00	80
WCF4532-471T	470.00	J,K	40	0.796	3	26.00	62
WCF4532-561T	560.00	J,K	30	0.796	3	30.00	50
WCF4532-681T	680.00	J,K	30	0.796	3	30.00	50
WCF4532-821T	820.00	J,K	30	0.796	2.5	35.00	30
WCF4532-102T	1000.00	J,K	30	0.252	2.5	40.00	30

T=Tolerance: J=±5%, K=±10%



●RELIABILITY

ITEM	TEST CONDITIONS	REMARKS																
Thermal Shock (Temperature Cycle)	Temperature : -40°C/ +85°C kept stabilized for 30 minutes each Cycle: 100 Cycles	Inductance value shall be within $\pm 10\%$ of the initial value.																
Humidity Resistance	Humidity: 90%~ 95% RH Temperature : 40 \pm 2°C Test Time: 1000 \pm 12 Hours	Q-factor shall be within $\pm 30\%$ of the initial value.																
High Temperature	Temperature : 85 \pm 2°C Humidity: 20% Testing Time: 1000 \pm 12 Hours	Impedance shall be within $\pm 20\%$ of the initial value.																
Low Temperature	Temperature : -40 \pm 2°C Time: 1000 \pm 12 Hours	DCR value shall be within $\pm 20\%$ of the initial value.																
Temperature and Humidity Cycle	<table border="1"> <thead> <tr> <th>Step</th> <th>Temp</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25 \pm 2°C</td> <td>95~100%RH</td> <td>3.0Hr</td> </tr> <tr> <td>2</td> <td>55 \pm 2°C</td> <td>95~96%RH</td> <td>9.5Hr</td> </tr> <tr> <td>3</td> <td>25 \pm 2°C</td> <td>95~100%RH</td> <td>9.5Hr</td> </tr> </tbody> </table>	Step	Temp	Humidity	Time	1	25 \pm 2°C	95~100%RH	3.0Hr	2	55 \pm 2°C	95~96%RH	9.5Hr	3	25 \pm 2°C	95~100%RH	9.5Hr	■NO.1~4 Measurement: After placing for 24 hours (min.) ■NO.2~3 Applied current(spec): Rated current (maximum value) ■NO.5 Cycle: 5 cycles
	Step	Temp	Humidity	Time														
	1	25 \pm 2°C	95~100%RH	3.0Hr														
2	55 \pm 2°C	95~96%RH	9.5Hr															
3	25 \pm 2°C	95~100%RH	9.5Hr															
Vibration	Frequency: 10Hz~55Hz Amplitude: 1.5mm Direction: X, Y, Z Time: 2 Hours each																	
IR Reflow Soldering	Solder: H63A (eutectic solder) Solder Temp.: 230 \pm 5°C Time: 6 minutes Cycles: x 1																	
Soldering Heat Resistance	Preheat : 120 ~ 150°C(60 sec) Solder: H63A (eutectic solder) Solder Temp.: 260 \pm 5°C Flux: Rosin Dip time: 10 \pm 1 seconds	The chip must have no cracks. More than 75% of the terminal electrode must be covered with solder.																
Bending Strength		The terminal electrode and the ferrite must not be damaged by the forces applied on the test conditions. 2520: ≥ 3.0 kg 3225: ≥ 4.0 kg 4532: ≥ 5.0 kg																
Flexure Strength		No mechanical damage shall be noticed even when the board is bent 2 mm																
Terminal Strength		After solder between copper plate and terminals of coil, push in two directions of X,Y with 2.0kg must no crack !																



● **TEST EQUIPMENT**

1. HP4284A, HP42841A – L, IDC, Q.RDC
2. HP8753D Network analyzer - SRF

● **Operating & Storage Condition**

1. Operating Temp : -40~+85°C
2. Storage Temp : -40~+85°C
3. Storage Life Time : 12 MONTH @25°C , RH 65%

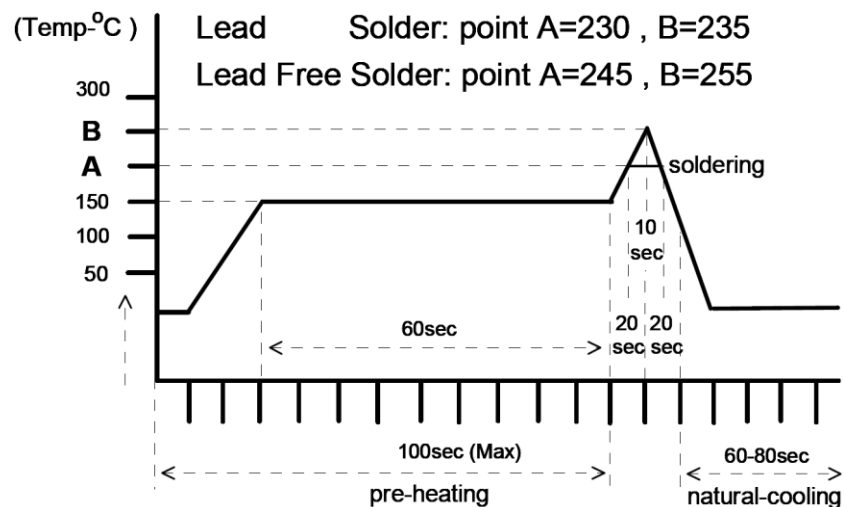
Standard Atmosphere Conditions:

Ambient Temp : 20 ± 15°C; Relative Humidity: 65 ± 20%

If there may be any doubt on the result, measurement shall be made within the following limits:

Ambient Temp : 25 ± 5°C; Relative Humidity: 75 ± 10%

● **RECOMMEND IR REFLOW CURVE : (TIME: Second)**



Notice: Iron Soldering: 3 Seconds Max. @260°C

● **ATTENTION & CAUTION**

Please avoid following matters:

- * Splashing water or salt water
- * Toxic Gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- * Vibrations or shocks which exceed the specified condition
- * Dew condensates
- * Please be careful for the stress to this product by board flexure or something after the mounting.



●CURVE

Fig.1 3225 L v.s Frequency Curve

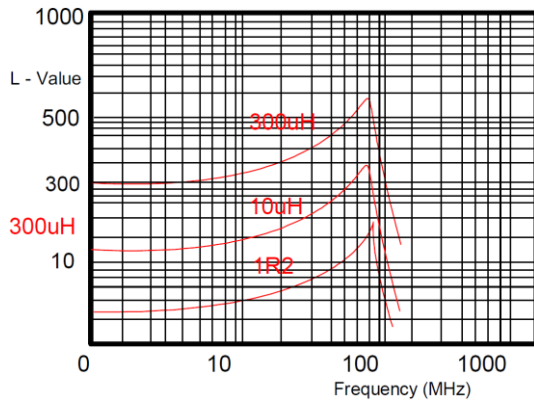
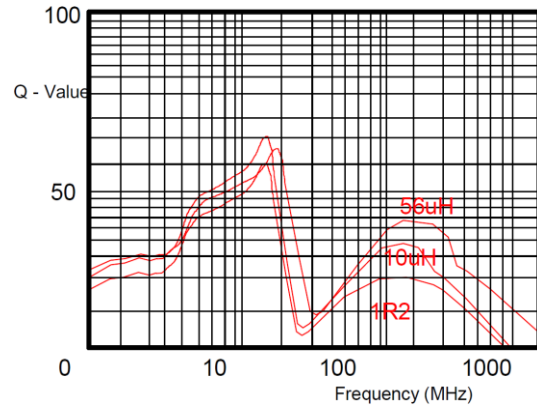
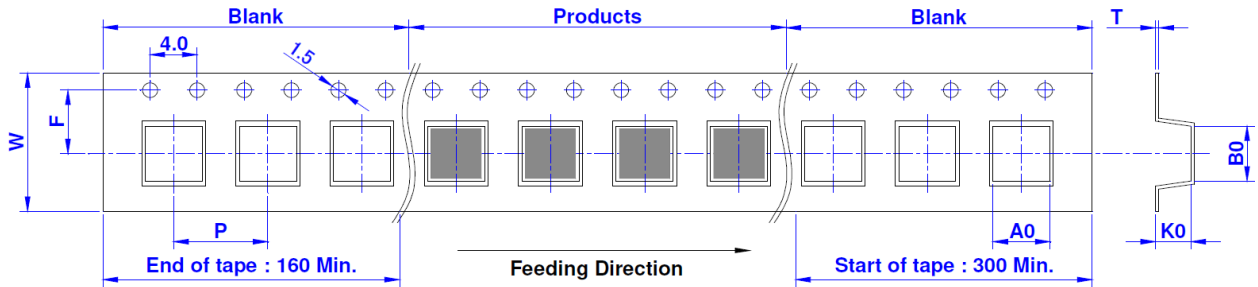


Fig.2 3225 Q v.s Frequency Curve



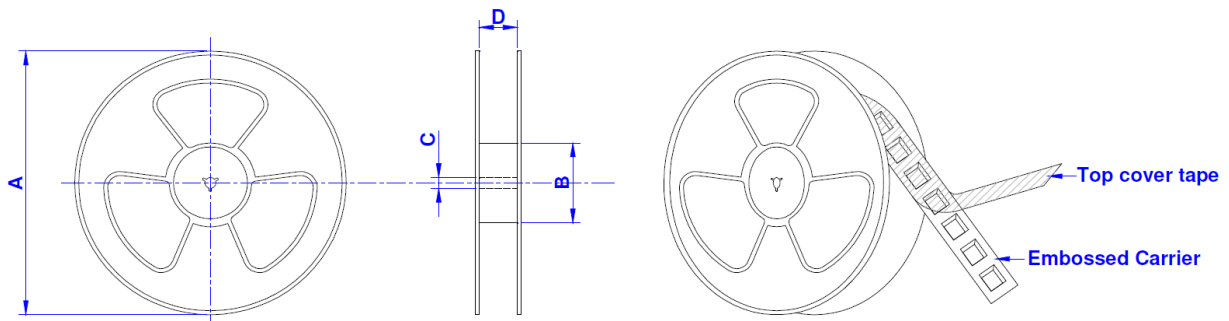


●TAPE DIMENSION: mm



SIZE/mm	W	P	A0	B0	K0	T	F
2520	8.00	4.00	2.80	2.95	2.20	0.23	3.50
2520F	8.00	4.00	2.40	2.90	2.00	0.23	3.50
3225	8.00	4.00	2.96	3.60	2.40	0.23	3.50
4532	12.00	8.00	3.30	5.00	3.50	0.30	5.50

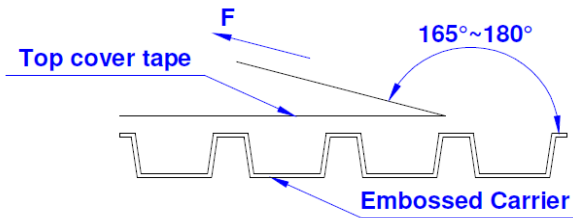
●REEL DIMENSION: mm



SIZE / mm	REEL SIZE	A	B	C	D	QTY/REEL
2520	7" x 8 mm	178	60	12	8.5	2000 PCS
2520F	7" x 8 mm	178	60	12	8.5	2000 PCS
3225	7" x 8 mm	178	60	12	8.5	2000 PCS
4532	7" x 12 mm	178	60	16	12.5	500 PCS



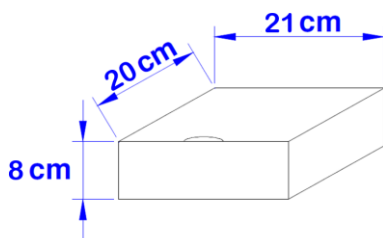
● **TEARING OFF FORCE:**



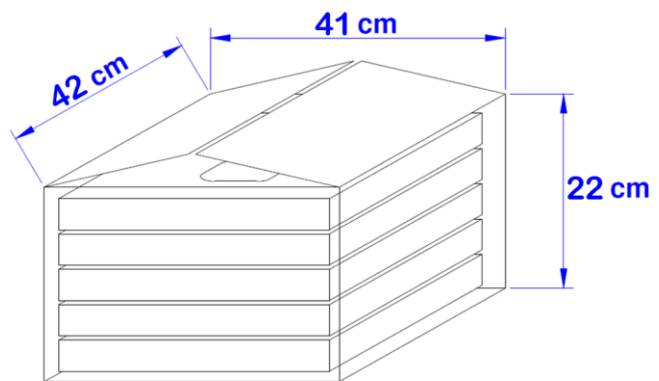
The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions (referenced ANSI/EIA - 481 - D - 2008 of 4.11 standard).

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

● **BOX PACKAGE: cm**



7" Small Box



Large Box

SIZE/mm	Reels in Small Box	Small Box in Large Box
2520	5	8
2520F	5	8
3225	5	8
4532	4	8



IMPORTANT NOTICE

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