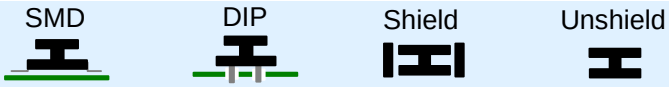
Product Series Code	**GSTC**	Brand	GOTREND
File Version	GSTC-V6R5	Editor	Teddy
Established Date	2009.09.01	Description	High Current Inductor
Latest Edit Date	2016.06.28	Pages	Page : 2

Features & Application :

* High performance (Isat) realized by metal dust core.
* Low profile : 4.5mm x 4.3mm x 2.0mm
* Low loss realized with low DCR
* Capable of corresponing high frequency (1MHz)
  100% lead (Pb) free meet RoHS standard
  DC/DC converter for CPU in Notebook PC

Product Structure

SMD DIP Shield Unshield



2005 RoHS Compliant - SGS Certified Result

鉛 Pb	鎘 Cd	汞 Hg	六價鉻 Cr+6	溴化聯苯 PBB	溴化聯苯醚 PBDE
<1000ppm	ND	ND	ND	ND	ND

Part No Example :

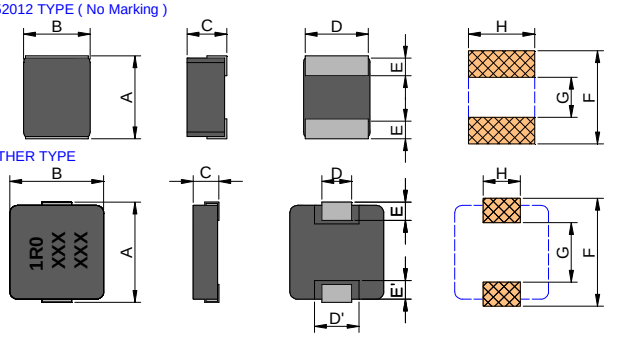
GSTC 061 P - R10 M S
1 2 3 4 5 6

1.GOTREND Series : GSTC
2.Type Size Code : 061=7.4 X 6.8 X 1.8
3. P=Pb free < 1000ppm
4. [L] Value : Inductance R10=0.10uH
5. [L] Tolerance: M=+/-20%
6. Materials : [N] [S] [F] type

DIMENSION : [mm]

RECOMMEND PAD LAYOUT

252012 TYPE (No Marking)



OTHER TYPE

TYPE	A[Max.]	B[Max.]	C[Max.]	D	D'	E	E'	F[Ref.]	G[Ref.]	H[Ref.]
252012	2.7	2.2	1.2	2.0+/-0.2	----------	0.6+/-0.2	----------	2.8	1.2	2.0
042	4.5	4.3	2.0	1.5+/-0.3	2.2+/-0.2	0.8+/-0.3	1.0+/-0.1	5.2	2.2	2.5
053	5.2	4.9	3.0	1.5+/-0.3	2.2+/-0.2	1.0+/-0.3	1.5+/-0.1	7.0	3.0	2.5
061	7.4	6.8	1.8	3.0+/-0.3	3.6+/-0.2	1.6+/-0.3	2.0+/-0.1	8.4	3.7	3.5
063	7.3	6.8	3.0	3.0+/-0.3	3.6+/-0.2	1.6+/-0.3	2.0+/-0.1	8.4	3.7	3.5
104	11.5	10.3	4.0	3.0+/-0.5	5.0+/-0.2	2.0+/-0.5	2.5+/-0.1	13.6	5.4	4.1
133	13.8	12.8	3.5	BY ITEM	6.0+/-0.2	2.0+/-0.5	2.5+-/0.1	14.5	8.5	5.0
135	14.0	12.8	5.2	BY ITEM	6.0+/-0.2	2.0+/-0.5	2.5+/-0.1	14.5	8.0	5.0

GSTC133P TYPE " D " Dimension : L < 1R0 : 4.0 mm +/-0.5 ; L >= 1R0 : 3.0 mm +/-0.5
GSTC135P TYPE " D " Dimension : L < 2R2 : 4.0 mm +/-0.5 ; L >= 2R2 : 3.0 mm +/-0.5

Test Equipment :

* Wayne kerr 3260B/G LCR Meter
* Wayne kerr 3265B Bias Current Source

Standard Atmospheric 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%

Marking and Date Code :

Marking

The inductor is marked with a 3-digit code
Example : 4.7uH ⟶ 4R7

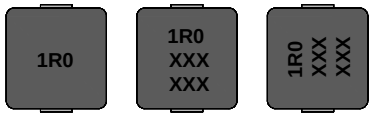
Date Code

X XX (1) Year Ex : 2005 = 5
(1) (2) (2) Weekly Serial number : 01 ~ 52

Taping No.

Serial number : 000~ZZZ

Marking Direction :



GSTC042 GSTC053 GSTC06X GSTC104 GSTC133 GSTC135

Operatiing & Storage Condition :

OPERATING TEMP : -55 ~ +125ºC

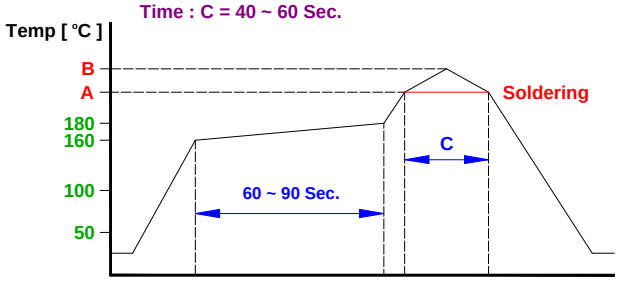
STORAGE TEMP : -25 ~ +35ºC
STORAGE LIFE TIME : 12 MONTH @25ºC , RH 70%

Attention & Caution :

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

Recommend IR Reflow Curve :

Lead Free Solder : A = 217 ˚C B = 245 +/- 5 ˚C
Time : C = 40 ~ 60 Sec.



Notice : Iron Soldering , Solder < 30 Watt , Direct touch the terminal x 3 Sec. Max. @ 350 ˚C

Electrical Characteristics :

Part No.	Inductance L(uH) +/- 20%	RDC (m Ohm) [Typ.] / [Max.]	Irms (Amp) Typ.	Isat (Amp) Typ.
GSTC252012PA-R33MS	0.33	14.0 / 17.0	5.60	4.30
GSTC252012PA-R47MS	0.47	20.0 / 25.0	4.50	3.80
GSTC252012PA-1R0MS	1.00	43.0 / 53.0	3.10	2.80
GSTC252012PA-2R2MS	2.20	84.0 / 98.0	2.30	1.80
GSTC252012PB-R22MS	0.22	8.0 / 10.0	7.30	7.00
GSTC252012PB-R33MS	0.33	14.0 / 17.0	5.50	5.80
GSTC252012PB-R47MS	0.47	23.0 / 28.0	4.50	5.00
GSTC252012PB-R50MS	0.50	25.0 / 30.0	4.30	4.80
GSTC252012PB-1R0MS	1.00	45.0 / 55.0	3.10	3.80
GSTC252012PB-1R5MS	1.50	58.0 / 70.0	2.70	2.90
GSTC252012PB-2R2MS	2.20	86.0 / 105.0	2.30	2.50
GSTC252012PB-3R3MS	3.30	120.0 / 144.0	1.75	2.00

*Test Condition@1MHz,1.0Vrms, 25ºC Ambient
* Isat: Saturated Current measured at the point of L drop approximately 30% [S TYPE]
* Irms: Rated Current Loading when temperature rise approximately 40ºC
* The parts final operating temperature (Ambient+The parts temperature rise) should not exceed 125ºC if under worst case of operating conditions.
Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the end application.
* All test data is referenced to 25º C Ambient.

Electrical Characteristics :

Part No.	Inductance L(uH) +/- 20%	RDC (m Ohm) [Typ.] / [Max.]	Irms (Amp) Typ.	Isat (Amp) Typ.
GSTC042 P-R10MN	0.10	4.50 / 5.00	11.0	30.0
GSTC042 P-R22MN	0.22	7.30 / 8.00	9.0	17.0
GSTC042 P-R47MN	0.47	14.00 /15.50	6.0	11.5
GSTC042 P-1R0MN	1.00	32.00 / 36.00	3.8	8.5
GSTC042 P-R10MS	0.10	3.50 / 4.00	12.0	22.0
GSTC042 P-R22MS	0.22	6.00 / 6.60	9.0	12.5
GSTC042 P-R47MS	0.47	12.50 /14.00	7.0	9.5
GSTC042 P-1R0MS	1.00	24.00 / 27.00	4.5	7.0
GSTC042 P-1R5MS	1.50	38.00 / 46.00	4.0	6.0
GSTC042 P-2R2MS	2.20	52.00 / 58.00	3.0	5.0
GSTC042 P-3R3MS	3.30	74.00 / 87.00	2.5	4.0
GSTC053 P-R68MN	0.68	11.0 / 12.00	8.5	14.0
GSTC053 P-1R0MN	1.00	13.0 / 14.00	7.0	11.0
GSTC053 P-1R2MN	1.20	15.0 / 16.00	6.5	11.0
GSTC053 P-1R5MN	1.50	20.0 / 25.00	6.0	10.0
GSTC053 P-2R2MN	2.20	29.0 / 35.00	5.5	9.0
GSTC053 P-3R3MN	3.30	32.0 / 38.00	5.0	7.0
GSTC053 P-R56MS	0.56	8.20 / 9.50	11.0	10.0
GSTC053 P-4R7MS	4.70	50.0 / 60.00	3.0	5.0
GSTC061 P-R10MS	0.10	2.00 / 2.50	18.0	45.0
GSTC061 P-R33MS	0.33	5.20 / 6.80	12.0	22.0
GSTC061 P-R47MS	0.47	7.30 / 8.40	11.0	18.0
GSTC061 P-R68MS	0.68	10.80 / 12.70	9.0	17.0
GSTC061 P-1R0MS	1.00	14.50 / 17.00	7.0	14.0
GSTC061 P-2R0MS	2.00	28.00 / 32.00	6.0	13.0
GSTC061 P-2R2MS	2.20	31.00 / 35.00	6.0	13.0
GSTC061 P-3R3MS	3.30	56.00 / 60.00	3.5	10.0
GSTC061 P-4R7MS	4.70	68.00 / 70.00	3.5	5.0
GSTC063 P-1R5MS	1.50	10.80 / 12.00	9.0	11.5
GSTC063 P-2R2MS	2.20	18.00 / 20.00	8.0	10.0
GSTC063 P-4R7MS	4.70	32.50 / 35.00	5.5	6.5
GSTC063 P-8R2MS	8.20	54.00 / 60.00	4.5	6.0
GSTC063 P-100MS	10.00	62.00 / 68.00	4.0	5.5
GSTC063 P-R10MN	0.10	1.50 / 1.70	32.5	60.0
GSTC063 P-R20MN	0.20	2.40 / 3.00	24.0	41.0
GSTC063 P-R22MN	0.22	2.50 / 2.80	23.0	40.0
GSTC063 P-R25MN	0.25	3.00 / 3.50	21.0	39.0
GSTC063 P-R33MN	0.33	3.50 / 3.90	20.0	30.0
GSTC063 P-R47MN	0.47	4.00 / 4.20	17.5	26.0
GSTC063 P-R56MN	0.56	4.70 / 5.00	16.5	25.5
GSTC063 P-R68MN	0.68	5.00 / 5.50	15.5	25.0
GSTC063 P-R82MN	0.82	6.70 / 8.00	13.0	24.0
GSTC063 P-R90MN	0.90	9.00 / 10.00	11.0	22.0
GSTC063 P-1R0MN	1.00	9.00 / 10.00	11.0	22.0
GSTC063 P-1R2MN	1.20	10.00 / 12.00	10.0	20.0
GSTC063 P-1R5MN	1.50	14.00 / 15.00	9.0	18.0
GSTC063 P-2R2MN	2.20	18.00 / 20.00	8.0	14.0
GSTC063 P-2R5MN	2.50	20.00 / 22.00	7.0	14.0
GSTC063 P-3R3MN	3.30	28.00 / 30.00	6.0	13.5
GSTC063 P-4R7MN	4.70	37.00 / 40.00	5.5	10.0
GSTC063 P-6R8MN	6.80	54.00 / 60.00	4.5	8.0

*Test Condition@100KHz,1.0Vrms, 25°C Ambient
* Isat: Saturated Current measured at the point of L drop approximately 20% [N / F TYPE]
Saturated Current measured at the point of L drop approximately 30% [S TYPE]
* Irms: Rated Current Loading when temperature rise approximately 40°C
* The parts final operating temperature (Ambient+The parts temperature rise) should not exceed 125°C if under worst case of operating conditions.
Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the end application.
* All test data is referenced to 25° C Ambient.

Electrical Characteristics :

Part No.	Inductance L(uH) +/- 20%	RDC (m ohm) [Typ] / [Max]	Irms (Amp) Typ.	Isat (Amp) Typ.
GSTC104 P-R15MN	0.15	0.50 / 0.65	40.0	75.0
GSTC104 P-R19MN	0.19	0.70 / 0.80	38.0	60.0
GSTC104 P-R36MN	0.36	1.05 / 1.20	30.0	60.0
GSTC104 P-R22MN	0.22	0.90 / 1.00	35.0	60.0
GSTC104 P-R39MN	0.39	1.10/1.30	30.0	60.0
GSTC104 P-R41MN	0.41	1.10 / 1.30	30.0	60.0
GSTC104 P-R45MN	0.45	1.10 / 1.30	29.0	45.0
GSTC104 P-R47MN	0.47	1.60 / 1.80	26.0	40.0
GSTC104 P-R56MN	0.56	1.60 / 1.80	25.0	40.0
GSTC104 P-R68MN	0.68	2.40 / 2.70	22.0	39.0
GSTC104 P-R88MN	0.88	2.70 / 3.00	20.0	38.0
GSTC104 P-1R0MN	1.00	3.00 / 3.30	18.0	36.0
GSTC104 P-1R5MN	1.50	3.80 / 4.20	16.0	33.0
GSTC104 P-2R2MN	2.20	6.70 / 7.00	12.0	27.0
GSTC104 P-4R7MN	4.70	15.00 / 16.50	9.5	17.0
GSTC104 P-3R3MS	3.30	10.80 / 11.80	10.0	16.0
GSTC133 P-R22MF	0.22	1.10 / 1.30	38.0	65.0
GSTC133 P-R33MF	0.33	1.30 / 1.50	36.5	62.0
GSTC133 P-R39MF	0.39	1.10 / 1.30	38.0	65.0
GSTC133 P-R47MF	0.47	1.70 / 2.00	32.0	55.0
GSTC133 P-R56MF	0.56	1.80 / 2.20	29.0	51.0
GSTC133 P-R62MF	0.62	1.80 / 2.20	29.0	51.0
GSTC133 P-R68MF	0.68	2.30 / 2.50	28.0	49.0
GSTC133 P-1R0MF	1.00	3.30 / 3.50	24.0	40.0
GSTC133 P-1R5MF	1.50	5.10 / 5.50	19.0	35.0
GSTC133 P-2R2MF	2.20	7.20 / 8.0	16.0	29.0
GSTC133 P-3R3MF	3.30	10.0 / 12.0	12.0	27.0
GSTC133 P-4R7MF	4.70	16.0 / 18.0	9.0	22.0
GSTC135 P-R15MF	0.15	0.55 / 0.70	45.0	110.0
GSTC135 P-R36MF	0.36	0.77 / 1.10	41.0	75.0
GSTC135 P-R47MF	0.47	1.10 / 1.30	38.0	65.0
GSTC135 P-R50MF	0.50	1.20 / 1.50	36.0	55.0
GSTC135 P-R56MF	0.56	1.20 / 1.50	36.0	55.0
GSTC135 P-R62MF	0.62	1.50 / 1.70	34.0	54.0
GSTC135 P-R68MF	0.68	1.50 / 1.70	34.0	54.0
GSTC135 P-R82MF	0.82	1.80 / 2.10	31.0	53.0
GSTC135 P-1R0MF	1.00	2.10 / 2.50	29.0	50.0
GSTC135 P-1R2MF	1.20	2.60 / 3.00	25.0	49.0
GSTC135 P-1R5MF	1.50	3.40 / 4.10	23.0	48.0
GSTC135 P-2R2MF	2.20	4.60 / 5.50	20.0	32.0
GSTC135 P-3R3MF	3.30	7.70 / 9.20	15.0	32.0
GSTC135 P-4R7MF	4.70	12.8 / 15.0	12.0	27.0
GSTC135 P-6R3MF	6.30	15.4 / 18.5	11.0	21.0
GSTC135 P-6R8MF	6.80	15.4 / 18.5	11.0	21.0

*Test Condition@100KHz,1.0Vrms, 25°C Ambient
* Isat : Saturated Current measured at the point of L drop approximately 20% [N / F TYPE]
Saturated Current measured at the point of L drop approximately 30% [S TYPE]
* Irms : Rated Current Loading when temperature rise approximately 40°C
* The parts final operating temperature (Ambient+The parts temperature rise) should not exceed 125°C if under worst case of operating conditions.
Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the end application.
* All test data is referenced to 25° C Ambient.

Care note :

Care note for Use :

(1) Storage Condition :
Temperature 25 to 35^{0}C, Humidity 45 to 85% RH

(2) Use Temperature :
a. Minimum Temperature : -55^{0}C Ambient temperature of power choke coil.
b. Maximum Temperature : +125^{0}C The value of temperature including ambient of the transformer and temperature rise of power choke coil.
c. There is not a problem from -55^{0}C ~ +125^{0}C in a reliability test.
d. However, this is not meant a temperature grade guarantee of UL.

(3) Model :
When this power choke coil was used in a similar or new product to the original one, sometimes it might be unable to satisfy the specifications due to difference of condition of usage.

(4) Drop :
If the power choke coil suffered mechanical stress such as drop, characteristics may become poor (due to damage on coil bobbin, etc.).
Never use such stressed power choke coil.

Care note for Safety :

(1) Provision to Abnormal Condition :
This power choke coil itself does not have any protective function in abnormal condition such as overload, short-circuit and open-circuit conditions, etc.
Therefore, it shall be confirmed as the end product that there is no risk of smoking, fire, dielectric withstand voltage, insulation resistance, etc. in abnormal conditions to provide protective devices and /or protection circuit in the end product.

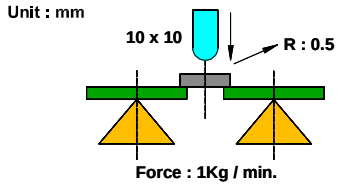
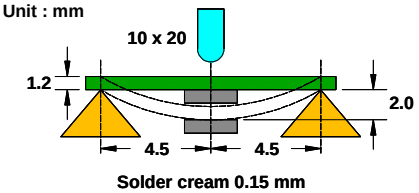
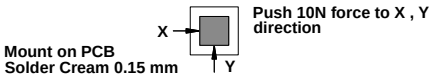
(2) Temperature Rise :
Temperature rise of power choke coil depends on the installation condition on end products.
It shall be confirmed on the actual end product that temperature rise of power choke coil is in the limit of specified temperature class.

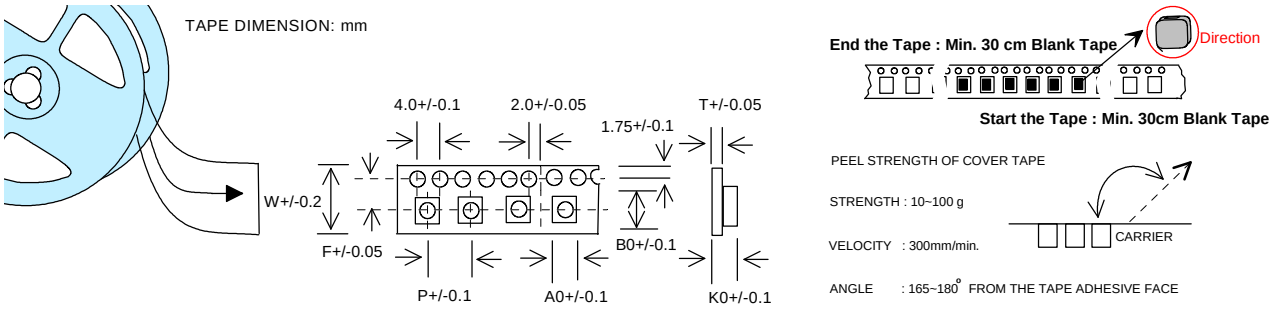
(3) Dielectric Strength :
Dielectric withstanding test with higher voltage than specific value will damage insulating material and shorten its life.

(4) Water :
This power choke coil must not be used in wet condition by water, coffee or any liquid because insulation strength becomes very low on the condition.

(5) Potting :
If this power choke coil is potted in some compound, coating material of magnet wire might be occasionally damaged. Please ask us if you intend to pot this power choke coil.

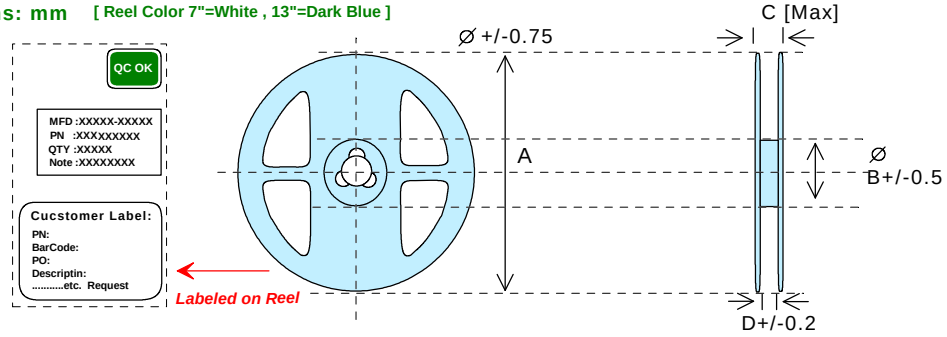
(6) Detergent :
Please consult our company once in case of this because the confirmation of reliability etc. is needed when the washing medicine is used for the power choke coil.

NO	ITEM	TEST CONDITIONS	Sample Qty/pcs	Specification	Result
1	Dimension 本體相關呎吋	Actual Size ...	10	Meet Spec	ok
2	Thermal Shock (Temperature Cycle) 溫度循環試驗	Temperature : -40 ° C~+125 ° C kept stabilized for 30 minutes each Cycle : 100 Cycle (Power off)	10	Elec. no variation Appearance no deformation	ok
3	Humidity Resistance 耐濕試驗	Humidity: 90%~ 95% RH Temperature: 40± 2 ° C Test Time: 96± 2 Hours	10	Elec. no variation Appearance no deformation	ok
4	HighTemperature 耐熱試驗	Temperature: 85± 2 ° C Testing Time: 96± 2 Hours	10	Elec. no variation Appearance no deformation	ok
5	Low Temperature 耐寒試驗	Temperature: -40 ± 2 ° C Time: 96± 2 Hours	10	Elec. no variation Appearance	ok
6	Temperature and Humidity Cycle 溫/濕度循環試驗	Step / Temp / Humidity / Time 1 / 25± 2 ° C / 90~95%RH / 3.0Hr 2 / 55± 2 ° C / 95~96%RH / 5.0Hr 3 / 25± 2 ° C / 90~95%RH / 3.0Hr Cycle: 20 Cycles	10	Elec. no variation Appearance no deformation	ok
7	Vibration 振動性試驗	Frequency: 10Hz~50Hz Amplitude: 1.5mm Direction: X,Y,Z Time: 2 Hours each	10	Elec. no variation Appearance no deformation	ok
8	Solderability 焊錫性試驗	Go through real SMT IR-Reflow.... The profile like our suggest profile. Preheat : 160 ± 10 ° C (90 sec.) Peak : 245 ± 5 ° C Peak Time : 50 Sec. / up 217 ° C	10	Elec. no variation Appearance no deformation	ok
9	Soldering Heat Resistance 耐熱 焊性試驗	Preheat:160 ± 10 ° C (90 sec) Solder:Sn/Ag/Cu(Pb Free) Solder Temp.: 260 ± 5 ° C Time: 3± 1 seconds	10	Elec. no variation Appearance no deformation	ok
10	Iron Solder Heat Resistance 手焊耐熱試驗	Solder Temp. 350 ± 5 ° C Flux : Rosin Time : 3± 1 seconds	10	Elec. no variation Appearance no deformation	ok
11	Bending Strength 折斷力試驗		10	Elec. no variation Appearance no deformation	ok
12	Flexure Strength 彎曲試驗		10	Elec. no variation Appearance no deformation	ok
13	Terminal Strength 推/ 拉力試驗		10	Must no crack and damage	ok
14	High-Voltage 高壓電擊試驗	100 V DC Between core & winding	10	Elec. no variation Appearance no deformation	ok
15	ORT:on going reliability test 負載電氣試驗	Temperature. : 25 ± 3 ° C Load : Allowed DC Current Test Time : 96 ± 2 Hr	10	There should be no evidence of short or open circle	ok



SIZE/mm	W	P	A_o	B_o	K_o	T	F
252012	8.00	4.00	2.27	2.74	1.40	0.23	3.50
042	12.00	8.00	4.20	4.50	2.50	0.30	5.50
053	16.00	12.00	5.20	5.50	3.75	0.30	7.50
061	16.00	12.00	7.00	7.50	2.55	0.30	7.50
063	16.00	12.00	7.00	7.50	3.60	0.30	7.50
104	24.00	16.00	10.60	12.00	4.50	0.35	11.50
133	24.00	16.00	13.50	14.20	3.85	0.35	11.50
135	24.00	16.00	13.50	14.20	5.20	0.35	11.50

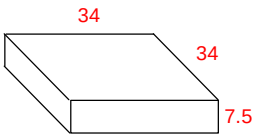
Reel Dimensions: mm [Reel Color 7"=White , 13"=Dark Blue]



SIZE / mm	A	B	C	D	REEL SIZE	QTY/REEL
252012	180	60	12	9	7”	3000 PCS
042	330	100	21	16.5	13”	2000 PCS
053	330	100	21	16.5	13”	1000 PCS
061	330	100	21	16.5	13”	1000 PCS
063	330	100	21	16.5	13”	1000 PCS
104	330	100	28	25	13”	500 PCS
133	330	100	28	25	13”	500 PCS
135	330	100	28	25	13”	500 PCS

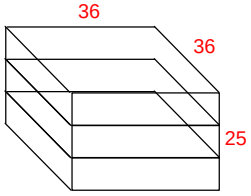
BOX Package: Unit: cm

4 Reel in



Inner Small Box

3 Inner Small Box in



Outter Large Box

Size / Box	Reels in Small Box	Small Box in Large Box
ALL SIZE	2	5

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