SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	Wound Chip Inductor	ABC'S DWG NO.	CM4532□□□□S□-□□□		
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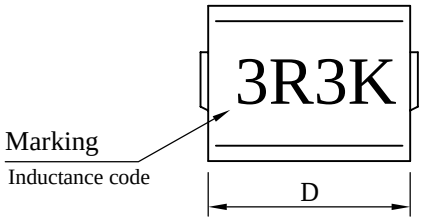
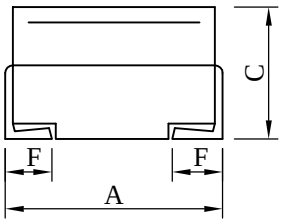
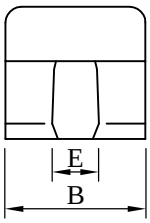
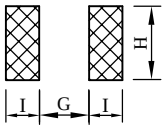
I．Configuration and dimensions：









（ PCB Pattern ）

Unit：mm

A	B	C	D	E	F	G	H	I
4.50 ±0.3	3.20 ±0.2	3.20 ±0.2	4.20 ±0.2	1.20	$1.00^{+0.3}_{-0.0}$	2.20	1.60	1.50

II．Description：

a．Ferrite drum core construction.

b．Enamelled copper wire：H class

c．Product weight： 0.110 g（ref.）

d．Moisture sensitivity Level 1

e．Products comply with RoHS' requirements

III．General specification：

a．Temp. rise ：20℃ max.

b．Ambient temp.：100℃ max.

c．Operating temp.：-40℃----+125℃
(Temp. rise included)

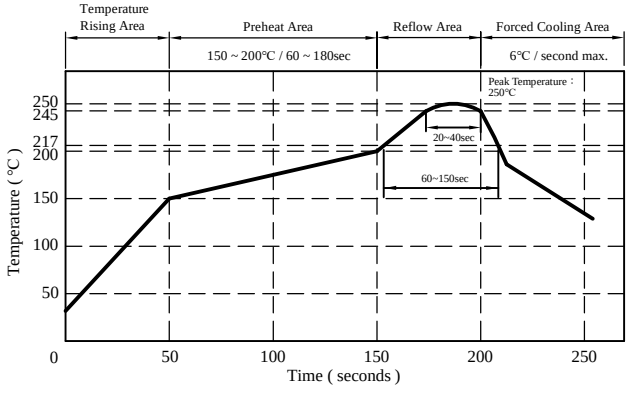
d．Terminal pull strength：1.5 kg min.

e．Rated current：Current cause
inductance drop within 10%

f．Resistance to solder heat：260℃.10 secs.

g．Resistance to solvent：Per MIL-STD-202F

Reflow profile
Peak Temp：250℃ max.
Max time above 245℃ ：20~40sec max.
Max time above 217℃ ：60~150sec max.
200℃~250℃ Average Ramp-up Rate：3℃/second max.



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SPECIFICATION FOR APPROVAL

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IV . Electrical characteristics：

DWG. No.	Inductance (μH)	Tolerance	Q min.	Test Freq. (MHz)	SRF (MHz) typ.	RDC (Ω) max.	IDC (mA) max.
CM4532R10□S□ -□□□	0.10	K , M	35	25.200	780.0	0.18	800
CM4532R12□S□ -□□□	0.12	K , M	35	25.200	735.0	0.20	770
CM4532R15□S□ -□□□	0.15	K , M	35	25.200	615.0	0.22	730
CM4532R18□S□ -□□□	0.18	K , M	35	25.200	570.0	0.24	700
CM4532R22□S□ -□□□	0.22	K , M	40	25.200	505.0	0.25	665
CM4532R27□S□ -□□□	0.27	K , M	40	25.200	450.0	0.26	635
CM4532R33□S□ -□□□	0.33	K , M	40	25.200	425.0	0.28	605
CM4532R39□S□ -□□□	0.39	K , M	40	25.200	390.0	0.30	575
CM4532R47□S□ -□□□	0.47	K , M	40	25.200	350.0	0.32	545
CM4532R56□S□ -□□□	0.56	K , M	40	25.200	325.0	0.36	520
CM4532R68□S□ -□□□	0.68	K , M	40	25.200	300.0	0.40	500
CM4532R82□S□ -□□□	0.82	K , M	40	25.200	275.0	0.45	475
CM45321R0□S□ -□□□	1.00	J , K , M	50	7.960	250.0	0.50	450
CM45321R2□S□ -□□□	1.20	J , K , M	50	7.960	240.0	0.55	430
CM45321R5□S□ -□□□	1.50	J , K , M	50	7.960	210.0	0.60	410
CM45321R8□S□ -□□□	1.80	J , K , M	50	7.960	190.0	0.65	390
CM45322R2□S□ -□□□	2.20	J , K , M	50	7.960	160.0	0.70	380
CM45322R7□S□ -□□□	2.70	J , K , M	50	7.960	150.0	0.75	370
CM45323R3□S□ -□□□	3.30	J , K , M	50	7.960	110.0	0.80	355
CM45323R9□S□ -□□□	3.90	J , K , M	50	7.960	100.0	0.90	330
CM45324R7□S□ -□□□	4.70	J , K , M	50	7.960	80.0	1.00	315
CM45325R6□S□ -□□□	5.60	J , K , M	50	7.960	50.0	1.10	300
CM45326R8□S□ -□□□	6.80	J , K , M	50	7.960	35.0	1.20	285
CM45328R2□S□ -□□□	8.20	J , K , M	50	7.960	28.0	1.40	270
CM4532100□S□ -□□□	10.00	J , K , M	50	2.520	22.0	1.60	250
CM4532120□S□ -□□□	12.00	J , K , M	50	2.520	20.0	2.00	225
CM4532150□S□ -□□□	15.00	J , K , M	50	2.520	18.0	2.50	200
CM4532180□S□ -□□□	18.00	J , K , M	50	2.520	16.0	2.80	190
CM4532220□S□ -□□□	22.00	J , K , M	50	2.520	14.0	3.20	180
CM4532270□S□ -□□□	27.00	J , K , M	50	2.520	13.0	3.60	170
CM4532330□S□ -□□□	33.00	J , K , M	50	2.520	12.0	4.00	160
CM4532390□S□ -□□□	39.00	J , K , M	50	2.520	11.0	4.50	150
CM4532470□S□ -□□□	47.00	J , K , M	50	2.520	10.5	5.00	140
CM4532560□S□ -□□□	56.00	J , K , M	50	2.520	10.0	5.50	135
CM4532680□S□ -□□□	68.00	J , K , M	50	2.520	9.5	6.00	130
CM4532820□S□ -□□□	82.00	J , K , M	50	2.520	8.5	7.00	120
CM4532101□S□ -□□□	100.00	J , K , M	40	0.796	8.0	8.00	110
CM4532121□S□ -□□□	120.00	J , K , M	40	0.796	7.0	8.00	110
CM4532151□S□ -□□□	150.00	J , K , M	40	0.796	6.0	9.00	105
CM4532181□S□ -□□□	180.00	J , K , M	40	0.796	5.5	9.50	102
CM4532221□S□ -□□□	220.00	J , K , M	40	0.796	5.0	10.00	100
CM4532271□S□ -□□□	270.00	J , K , M	40	0.796	4.5	12.00	92
CM4532331□S□ -□□□	330.00	J , K , M	40	0.796	4.0	14.00	85
CM4532391□S□ -□□□	390.00	J , K , M	40	0.796	3.5	18.00	80
CM4532471□S□ -□□□	470.00	J , K , M	40	0.796	3.5	26.00	62
CM4532561□S□ -□□□	560.00	J , K , M	30	0.796	3.0	30.00	50
CM4532681□S□ -□□□	680.00	J , K , M	30	0.796	3.0	30.00	50
CM4532821□S□ -□□□	820.00	J , K , M	30	0.796	2.5	35.00	30
CM4532102□S□ -□□□	1000.00	J , K , M	20	0.252	2.5	40.00	30

1). Electrical specifications at 25℃

2). Tolerance : J = ±5%, K = ±10%, M = ±20%

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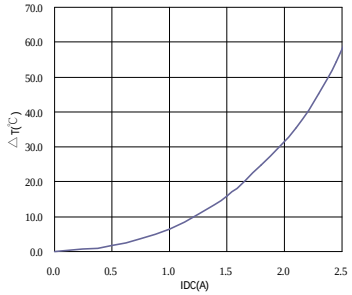
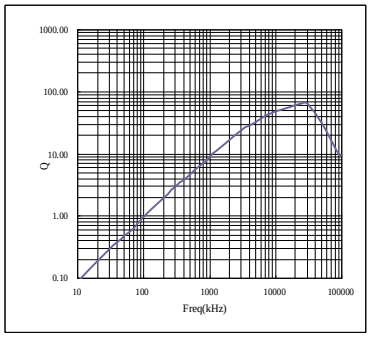
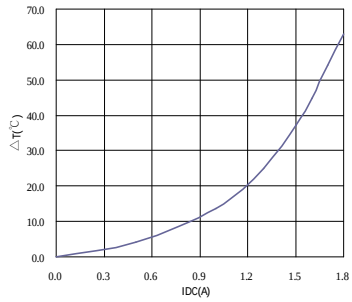
V．Curve：

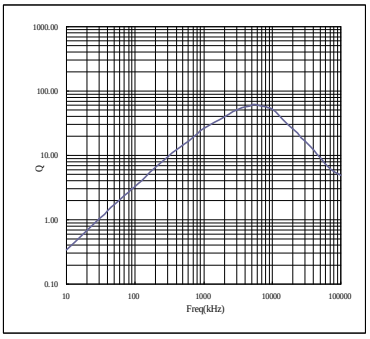
CM4532R10□S□



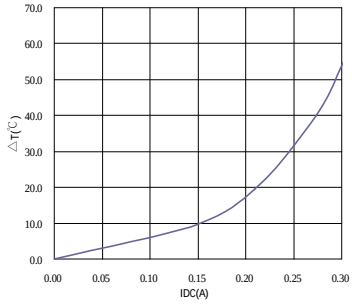


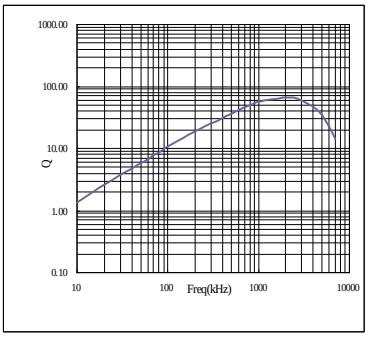
CM45321R0□S□



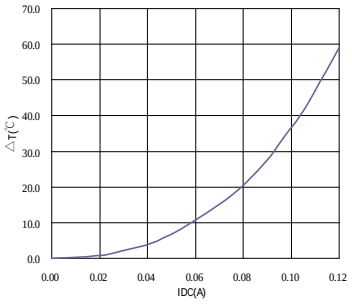


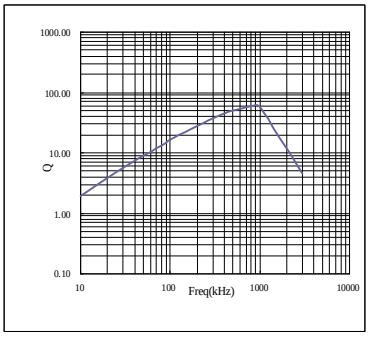
CM4532101□S□





CM4532102□S□





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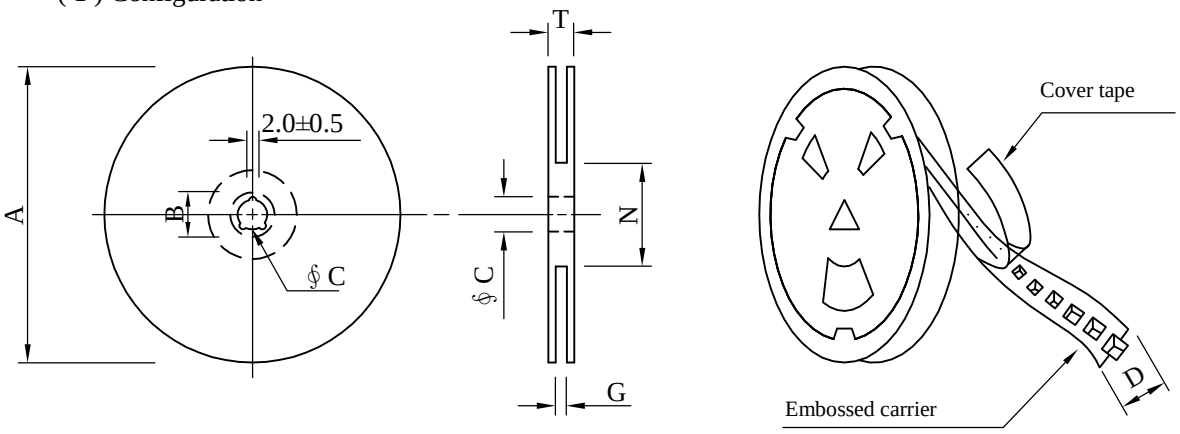
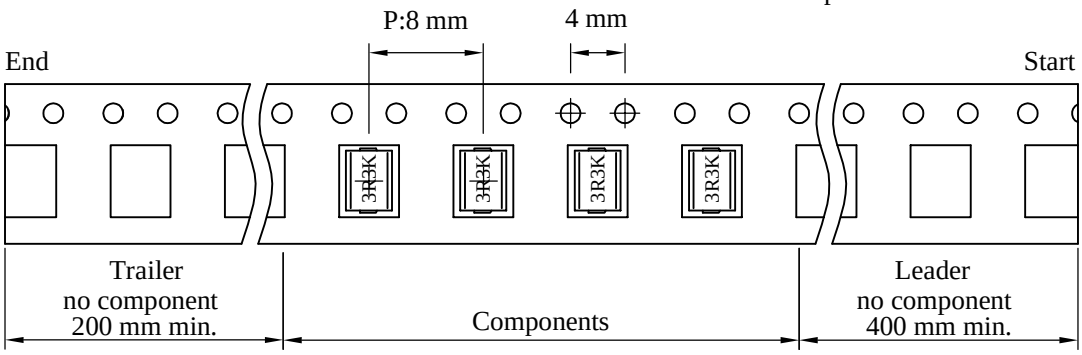
VI．Packaging information：

(1) Configuration



※Carrier tape width : D



User direction of feed

※ There is no differentiation or directions of polarity (marking) in the packaging method.

(2) Dimensions

Unit:mm

Style	A	B	C	D	G	N	T
07 - 12	178	21±0.8	13	12	14^{+0}	50^{-0}	16.5
13 - 12	330	21±0.8	13±0.5	12	14^{+0}	50^{-0}	18.4

(3) Q'TY & G.W. Pe package

Code	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (g)	Style	Q'TY (pcs)	G.W. (kg)	Size (cm)
B、D	500	130	07 - 12	20,000	7.20	39.5 x 39.5 x 23.0
C	2,000	540	13 - 12	12,000	5.60	37.5 x 36.5 x 19.0
F	1,000	270	13 - 12	6,000	2.80	37.5 x 36.5 x 19.0

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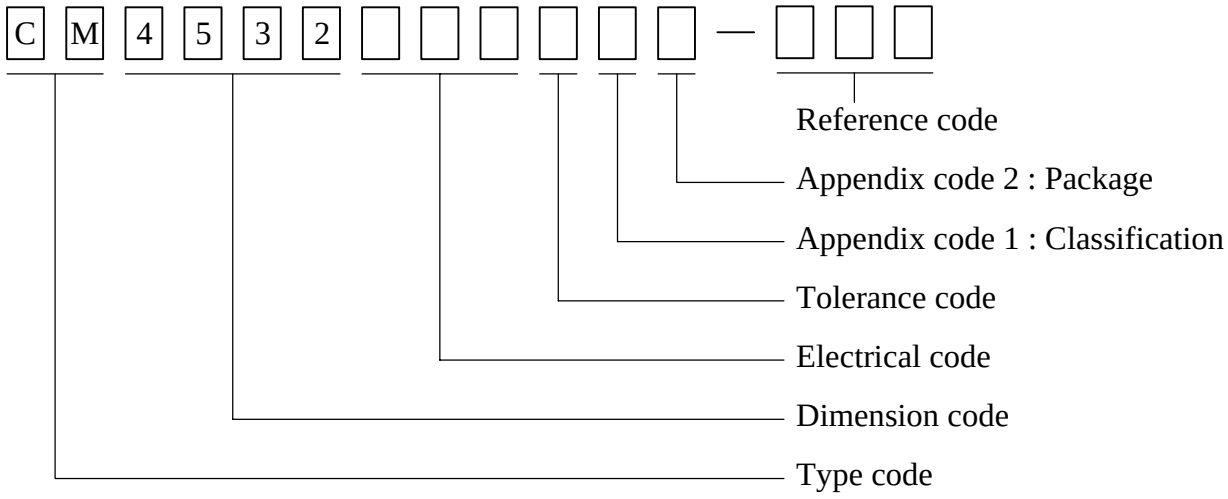
VII．Drawing number expression：



Appendix code 1：Product Classification

Appendix code 2：Package Information

Code	Inner package	Cover tape	Carrier tape	Bag	Package Q'TY	Remark
B	T /R (Reel package)	UCT	Non-antistatic	Antistatic	500 pcs	
C	T /R (Reel package)	UCT	Non-antistatic	Antistatic	2,000 pcs	
D	T /R (Reel package)	UCT	Non-antistatic	Antistatic	500 pcs	
F	T /R (Reel package)	UCT	Non-antistatic	Antistatic	1,000 pcs	

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VIII . Reliability test：

Item	Reference documents	Test Condition	Test Specification
1.High Temperature Exposure	MIL-STD-202 Method 108	1.Temperature: 125±2℃ 2.Time:96±2 hours.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
2.Temperature Cycling	JESD22-A 104	1.Temperature: -40℃ ~ +125℃ 2.Number of cycle:100 cycle 3.Dwell time:30 minutes	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
3.Biased Humidity Test	MIL-STD-202 Method 103	1.Temperature：85±2 ℃ 2.Humidity: 85% RH. 3.Time:96±2 Hours	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
4.Operational Life	JESD22-A 108	1.Temperature: 125℃(Temp. rise included) 2.Time:96±2 hours. 3.Rated current	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
5.External Visual	JESD22-B 101 & MIL-STD-883 Method 2009	Inspect product constructions, marking and workmanship.	1.No pollution on the surface of products. 2.Clear marking. 3.No crack.
6.Physical Dimensions	JESD22-B 100	Verify physical dimensions to the applicable product detail specification.	Per product specification standard
7.Resistance to solvents	MIL-STD-202 Method 215	Immerse into solvent for 3±0.5 minutes & brush 10 times for 3 cycles.	1.No body change in apperarance. 2.No marking blurred. 3.Inductance shall not change more than ±10%.
8.Vibration Test	MIL-STD-202 Method 204	1.Frequency and Amplitued :10-2000-10 Hz 2.Sweep time：20 min 3.Acceleration：5g 4.Direction：X , Y , Z 5.Number of sweep：6 time/axis	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
9.Resistance To Soldering Heat Test	MIL-STD-202 Method 210 & J-STD020	1.Highest temperature：250±5℃. 2.Time（temp.≧ 217℃）：60~150 Second. 3.Reflow times：3 times.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
10.Saturation Current	JIS C 6436 & User SPEC.	1.Applied rated current for 5 second. 2.Rated current	Inductance shall not drop more than 10% max.
11.Over load	JIS C 6436 & User SPEC.	1.Applied one and half rated current for a period of 5 minutes. 2.Rated current	No electrical or mechanical damage
12.Temperature Rise Current	JIS C 6436 & User SPEC.	1.Applied rated current for 10 minutes. 2.Temperature measure by digital surface thermometer. 3.Irms current	Surface temperature rise is less than 20℃ max.
13.Solderability Test	J-STD-002 & JESD22-B 102	1.Baking in pre-testing：150±5℃ / 16Hours±30 min. 2.Peak temperature：240±5℃ 3.Time（temp.≧217℃）：60~150 second. 4.Reflow times：1 time.	More than 95% soldering coverage min on terminations.
14.Electrical Characteriazation	MIL-STD-202 Method 304 & User SPEC.	1.Operating temperature：-40℃~125℃ 2.Room temperature：25℃.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±10%.
15.Withstanding Voltage Test	MIL-STD-202 Method 301 & User SPEC.	1.DC: 500 V (Terminal to Coating) 2.Time：1minute.	1.During the test no breakdown. 2.No mechanical or electrical damage.
16.Insulation Resistance	MIL-STD-202 Method 302	DC voltage 100V applied between inductor terminal and coating for 1 minute.	1.IR = 1000MΩ Min. 2.No mechanical or electrical damage.
17.Drop	CNS-C6354 & GB/T 2423.8	1.Products shall be mounted on SPEC. pcb and dropped down from a heigh of 1m 2.Drop total time：6 time (Every side ofsample drop 2 times)	1. Adhesion on PCB shall be enough. 2. Product appearance shall not break. 3. No electrical damage.
18.Terminal Strength Test	IEC 60068-2-21	1.Apply push force to samples mounted on PCB. 2.Force of 1.8 kg for 60±1 seconds.	After test, inductors shall be no mechanical damage.

SPECIFICATION FOR APPROVAL

REF. :

IX．Safety notes：

1. The risks of using the product are highly relevant to the field of application and need to be evaluated by both user and manufacturer. If the product is used for a purpose that directly affects personal safety or will cause significant impact or loss to the society , please be sure to contact us first for confirmation.
   產品使用的風險與應用領域有高度相關，若您應用於直接影響人身安全系統或對社會會造成重大影響與損失之相關用途，請務必優先與我們聯繫確認。
2. The storage period is less than 12 months. Ensure to follow the storage conditions (Temperature: 5 to 30°C, Humidity: 10 to 60% RH or less). If the storage time is exceeded the limit, the electrodes might be deteriorate of terminal soldering.
   儲存期不超過12個月,務必遵守儲存條件（溫度：5至30℃，濕度：10至60%RH以下）。如果超過了儲存時間，端子電極可能會氧化而影響焊接。
3. Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
   不要在有氣體腐蝕等條件的地方使用或存放（鹽，酸，鹼等）。
4. Soldering corrections after mounting should be within the range of the conditions determined in the specifications. If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
   安裝時的焊接條件應在規格範圍內。如果超過要求，可能會發生短路，性能下降或壽命縮短。
5. When using, it should try to avoid excessive mechanical impact on the product, such as collision / drop ... and other reasons.
   使用時，應盡量避免產品受到過度機械衝擊，如碰撞/掉落...等原因。
6. When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
   將已安裝新片的電路板組裝到裝置時，請注意應盡量避免電路板受到組裝變形...等，導致產品受到應力。
7. Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
   產品會因通電而自我發熱(溫度上升)，因此在熱影響設計方面，需保留適當公差。
8. Do not expose the products to magnets or magnetic fields.
   請勿將產品暴露於磁鐵或是磁場中。
9. If you would like to use this products to performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property, or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.
   如果您希望將此產品用於性能和/或質量要求更嚴格的安全性或可靠性，或其失敗、故障或麻煩可能對社會、個人或財產造成嚴重損害，或者您有特殊情況要求超出目錄中規定的範圍或條件，請與我們聯繫。