

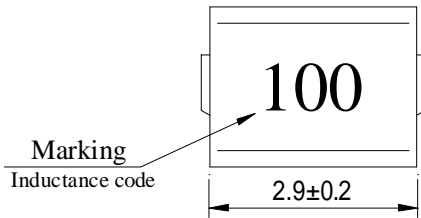
# SPECIFICATION FOR APPROVAL

REF : 20070427-E

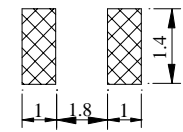
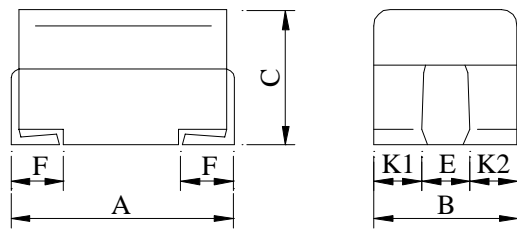
PAGE: 1

PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

**. CONFIGURATION & DIMENSIONS :**



- A : 3.2±0.4 m/m
- B : 2.5±0.2 m/m
- C : 2.2±0.2 m/m
- E : 1.0±0.2 m/m
- F : 0.6<sup>+0.3</sup><sub>-0</sub> m/m
- K = K1-K2 = 0.25<sup>+0</sup> m/m



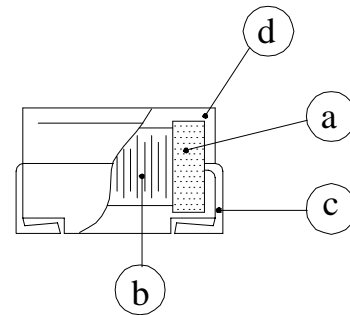
( PCB Pattern )

**. SCHEMATIC DIAGRAM :**



**. MATERIALS :**

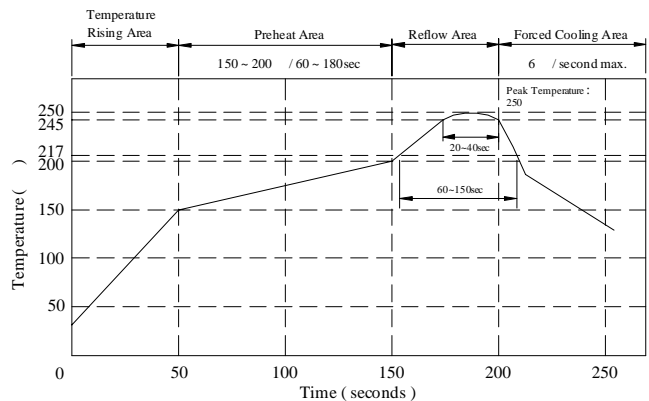
- a . Core : Ferrite DR core
- b . Wire : Enamelled copper wire (class H)
- c . Terminal : Cu/Sn
- d . Encapsulate : Epoxy novolac molding compound
- e . Remark : Products comply with RoHS' requirements



**. GENERAL SPECIFICATION :**

- a . Temp. rise : 20 max.
- b . Ambient temp. : 100 max.
- c . Storage temp. : -40 ----+125
- d . Operating temp. : -40 ----+125
- e . Terminal pull strength : 1.5 kg min.
- f . Rated current : Current cause  
inductance drop within 10%
- g . Resistance to solder heat : 260 .10 secs.
- h . 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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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

**. ELECTRICAL CHARACTERISTICS :**

DWG No.	Inductance ( $\mu$ H)	Q min.	Test Freq (MHz)	SRF (MHz) min.	RDC ( $\Omega$ ) max.	IDC (mA) max
CM3225R10ML□-□□□	0.100±20%	28	100.0	700	0.44	450
CM3225R12ML□-□□□	0.120±20%	30	25.2	500	0.22	450
CM3225R15ML□-□□□	0.150±20%	30	25.2	450	0.25	450
CM3225R18ML□-□□□	0.180±20%	30	25.2	400	0.28	450
CM3225R22ML□-□□□	0.220±20%	30	25.2	350	0.32	450
CM3225R27ML□-□□□	0.270±20%	30	25.2	320	0.36	450
CM3225R33ML□-□□□	0.330±20%	30	25.2	300	0.40	450
CM3225R39ML□-□□□	0.390±20%	30	25.2	250	0.45	450
CM3225R47ML□-□□□	0.470±20%	30	25.2	220	0.50	450
CM3225R56ML□-□□□	0.560±20%	30	25.2	180	0.55	450
CM3225R68ML□-□□□	0.680±20%	30	25.2	160	0.60	450
CM3225R82ML□-□□□	0.820±20%	30	25.2	140	0.65	450
CM32251R0KL□-□□□	1.000±10%	30	7.96	120	0.70	400
CM32251R2KL□-□□□	1.200±10%	30	7.96	100	0.75	390
CM32251R5KL□-□□□	1.500±10%	30	7.96	85	0.85	370
CM32251R8KL□-□□□	1.800±10%	30	7.96	80	0.90	350
CM32252R2KL□-□□□	2.200±10%	30	7.96	75	1.00	320
CM32252R7KL□-□□□	2.700±10%	30	7.96	70	1.10	290
CM32253R3KL□-□□□	3.300±10%	30	7.96	60	1.20	260
CM32253R9KL□-□□□	3.900±10%	30	7.96	55	1.30	250
CM32254R7KL□-□□□	4.700±10%	30	7.96	50	1.50	220
CM32255R6KL□-□□□	5.600±10%	30	7.96	45	1.60	200
CM32256R8KL□-□□□	6.800±10%	30	7.96	40	1.80	180
CM32258R2KL□-□□□	8.200±10%	30	7.96	35	2.00	170
CM3225100KL□-□□□	10.000±10%	30	2.52	30	2.10	150
CM3225120KL□-□□□	12.000±10%	30	2.52	20	2.50	140
CM3225150KL□-□□□	15.000±10%	30	2.52	20	2.80	130
CM3225180KL□-□□□	18.000±10%	30	2.52	20	3.30	120
CM3225220KL□-□□□	22.000±10%	30	2.52	20	3.70	110
CM3225270KL□-□□□	27.000±10%	30	2.52	20	5.00	80
CM3225330KL□-□□□	33.000±10%	30	2.52	17	5.60	70
CM3225390KL□-□□□	39.000±10%	30	2.52	16	6.40	65
CM3225470KL□-□□□	47.000±10%	30	2.52	15	7.00	60
CM3225560KL□-□□□	56.000±10%	30	2.52	13	8.00	55
CM3225680KL□-□□□	68.000±10%	30	2.52	12	9.00	50
CM3225820KL□-□□□	82.000±10%	30	2.52	11	10.00	45
CM3225101KL□-□□□	100.000±10%	20	0.796	10	11.00	40
CM3225121KL□-□□□	120.000±10%	20	0.796	10	11.00	70
CM3225151KL□-□□□	150.000±10%	20	0.796	8	15.00	65

- 1). □: Packaging information . . . [A]: Bulk      [B]: Taping Reel  
 2). "-" □□□ ":Reference code

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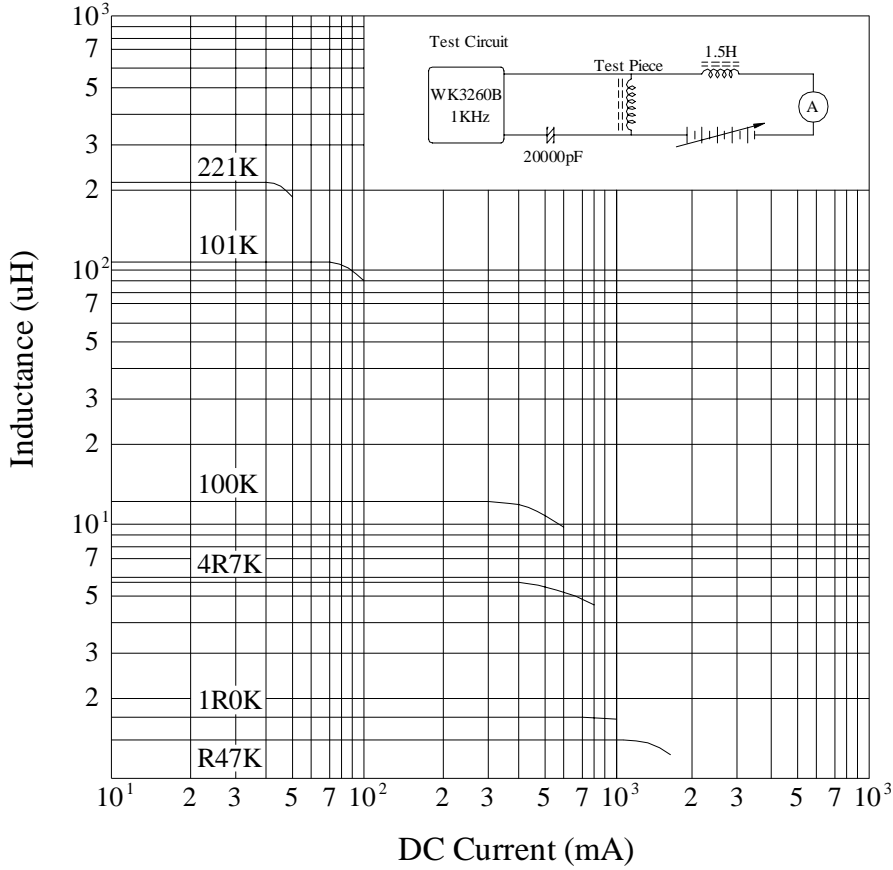
REF : 20070427-E

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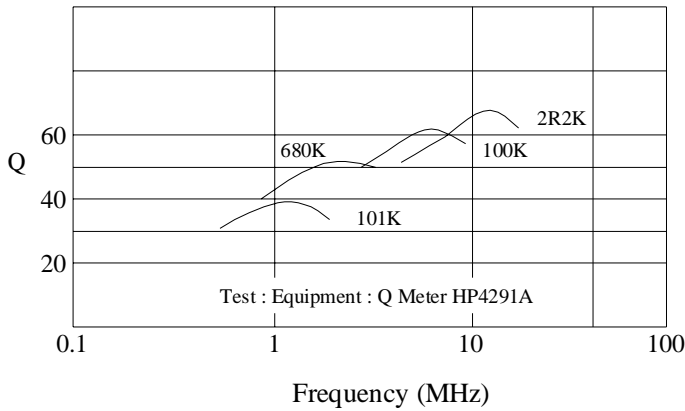
PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

CURVE :

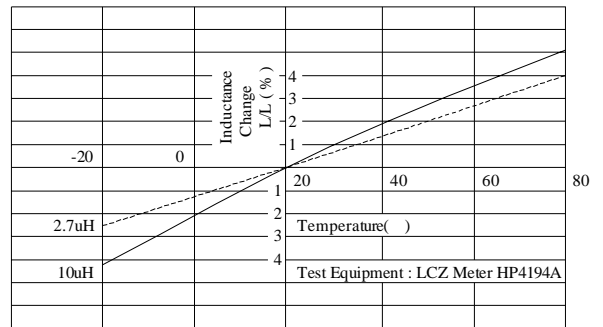
@ Inductance VS. DC Superposition Characteristics



@ Q VS. Frequency Response



@ Inductance Change VS. Temperature Response



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# SPECIFICATION FOR APPROVAL

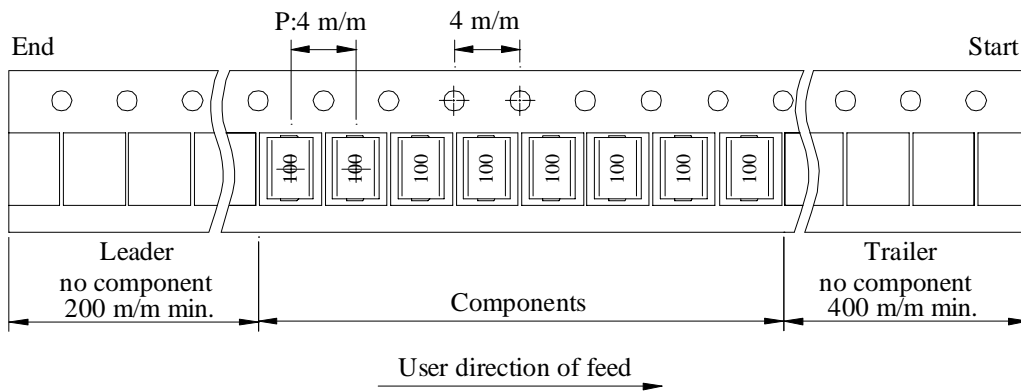
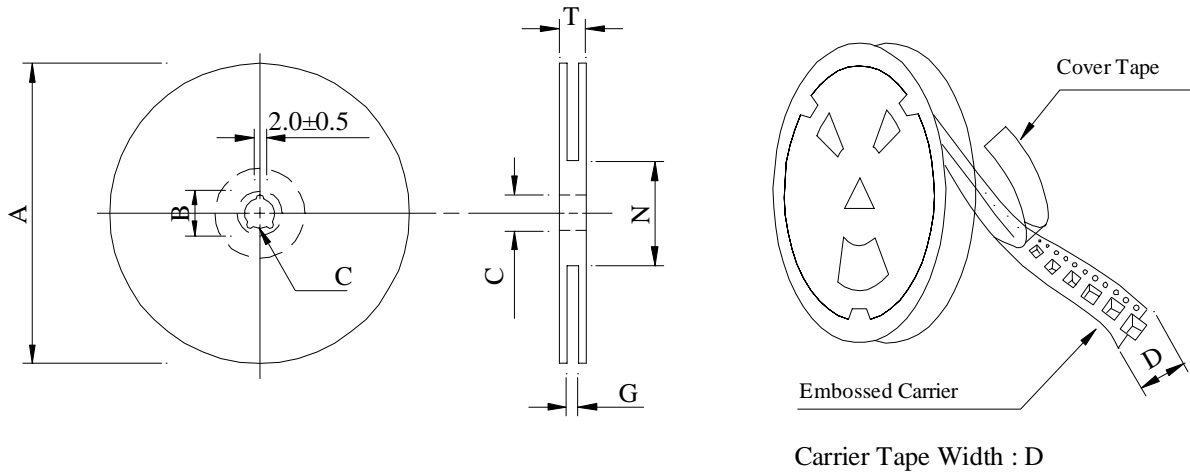
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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

**. PACKAGING INFORMATION :**

( 1 ) Configuration



( 2 ) Dimensions

Unit:m/m

Style	A	B	C	D	G	N	T
07 - 08	178	21±0.8	13	8	10 <sup>+0</sup>	50 <sup>-0</sup>	12.5
07(S) - 08	183	21±0.8	13	8	10 <sup>+0</sup>	50 <sup>-0</sup>	12.5
13 - 08	330	21±0.8	13±0.5	8	10 <sup>+0</sup>	50 <sup>-0</sup>	12.5

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

Series	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (gw)	Style	Q'TY (pcs)	G.W. (Kg)	Size (cm)
CM3225	1,000	110	07 - 08	50,000	7.50	41 x 39 x 22
CM3225	2,000	220	07(S) - 08	100,000	15.00	41 x 39 x 22
CM3225	7,000	770	13 - 08	84,000	9.80	41 x 39 x 22

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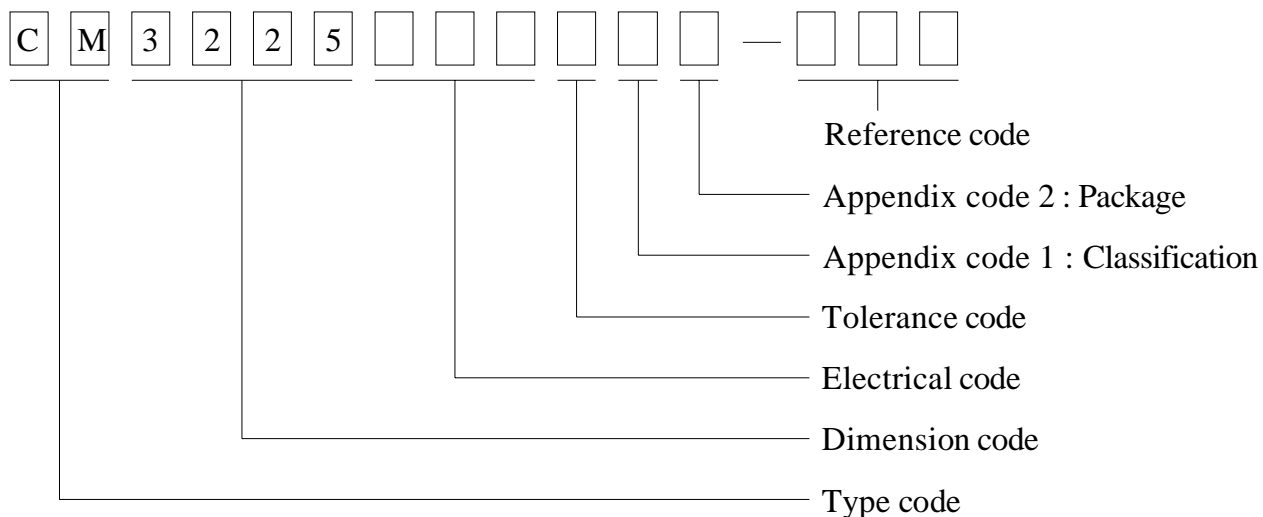
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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

. DWGING NUMBER EXPRESSION :



Appendix code 1 : Product Classification

- L : Lead Free Standard products comply with RoHS' requirements
- 1 ~ 9 : Lead Free Special products comply with RoHS' requirements

Appendix code 2 : Package Information

Code	Inner package	Inner package Q'TY	Remark
A	Bag	1000 pcs	
B	T / R ( Reel package )	1000 pcs	
C	T / R ( Reel package )	2000 pcs	
D	T / R ( Reel package )	7000 pcs	Hot-press

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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

. RELIABILITY TEST :

Test item	Specification	Test condition / Test method
● Electrical performance test		
Inductance L	Refer to standard electrical characteristic list	□HP4194A with HP-16034E test fixture
Q		
Self resonance frequency SRF		□HP4291A with HP-16093A test fixture
DC Resistance RDC		CH-502AC
Rated current IDC		Applied the current to coils , The Inductance change shall be less than 10% to initial value & temperature rise shall not be more than 20
Temperature rise test	20 max.	1 . Applied the allowed DC current for 10 minutes 2 . Temperature measure by digital surface thermometer
Over load test	After test , Inductors shall be no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minutes
Withstanding voltage test	After tset , Inductors shall be no evidence of electrical and mechanical damage	AC voltage of 1000VAC applied between inductors terminal and coating for 5 seconds
Insulation resistance test	1000 MΩ min .	100 VDC applied between inductor terminal and coating
● Mechanical performance test		
Vibration test ( Low frequency )	1 . Inductors shall be no evidence of electrical and mechanical damage  2 . Inductance shall not change more than±5%  3 . Q Shall not change more than ±20%	1 . Amplitude : 1.5 m/m 2 . Frequency : 10 -- 55 -- 10 Hz / 1min. 3 . Direction : X , Y , Z 4 . Duration : 2 hrs / X , Y , Z
Shock test		Inductors shall be dropped 10 times from a height of 1m onto 3cm wooden board
Resistance to soldering heat		Temp : 260±5 Time : 10±1.0 sec.

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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	
Terminal strength-pull test	Terminal shall not be loosened or ruptured	A 0.5kg load shall be applied to both Terminals in the axis direction for 1 minute .	
Solderability test	The terminal shall be at least 90% covered with solder	After fluxing , Inductor shall be dipped in a melted solder bath at 240±5 for 5 seconds .	
Resistance to solvent test	There shall be no case deformation change in appearance or obliteration of marking	MIL-STD-202F , Method 215D	
● Climatic test			
Temperature characteristic	1 . Inductors shall be no evidence of electrical and mechanical damage  2 . Inductance shall not change more than ±10%  3 . Q shall not change more than ±20%	-40 -- +125	
Humidity test		1 . Temp : 40±2 2 . R.H. : 90 -- 95% 3 . Time : 96±2 hours	
Cold test		1 . Temp : -25±2 2 . Time : 96±2 hours	
Thermal shock test		<p style="text-align: center;">Total : 5 cycles</p>	
Dry heat test		1 . Temp : 85±2 2 . Time : 96±2 hours	
High temperature load life test	There shall be no evidence of short or open circuiting	1 . Temp : 85±2 2 . Time : 1000±12 hours 3 . Load : Allowed DC current	
Humidity load life		1 . Temp : 40±2 2 . R.H. : 90 -- 95% 3 . Time : 1000±12 hours 4 . Load : Allowed DC current	
● Note : Unless otherwise specified , Allow the specimen to stand at room temperature for 1 hour or more but not more than 2 hours , Measure the electrical and mechanical performances			

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PROD. NAME	<b>WOUND CHIP INDUCTOR</b>	ABC'S DWG NO.	CM3225□□□□L□-□□□
		ABC'S ITEM NO.	

**. UL CARD :**

**OBMW2** August 27, 1999

Magnet Wire-Component

**ELEKTRISOLA (MALAYSIA) SDN BHD** E143312

IALAN DAMN SATU IANDA BAIK 28750 BENTONG, PAHANG  
DARUL MAKMUR MALAYSIA

Mtl Dsg	Mark Dsg	Coating Type		ANSI Typ	Temp Class
		BC	OC		
Estersol 160	E180	Polyesterimide (solderable)	---	MW-77	180
Amldester 200	A200	Polyesterimide	---	MW-74	200
Polysol-N 155	PN155	Polyurethane	Nylon	MW-80,	155,
				MW-28	100
Polysol 155	P155	Polyurethane	---	MW-79,	155,
				MW-79,	130
Polysol 155g	Pg155	Polyurethane	---	MW-79	130
Polysol 155p	Pp155,Gp155	Polyurethane	---	MW-79	155
Polysol 160	P160	Polyurethane	---	MW-79	155
Polysol 180	P180	Polyurethane	---	MW-79	155
Polysol 170	P170 or G170	Polyurethane	---	MW-79	156
Polysol-N 180	PN180	Polyurethane	Nylon	---	180

Marking : Company name/material designation or marked designation and factory identification on package ok reel

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See General Information preceding These Recognitions  
For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

**OMFZ2** March 4, 1994

Component-Plastics

**CHANG CHUN PLASTICS CO LTD** E59481 (S)

( F1-cont. from F card )

BM-21	ALL	0.79	94HB	50	50	50	—	—	—	—	—
BM-22	ALL	0.79	94HB	50	50	50	—	—	—	—	—
BM-23	ALL	0.79	94V-0	50	50	50	—	—	—	—	—
EME-1100	BK	0.84	94V-0	130	130	130	—	—	—	—	—
	BK	6.4	94V-0	130	130	130	—	—	—	—	—
EME-1200	BK	0.84	94V-0	130	130	130	—	—	—	—	—
	BK	6.4	94V-0	130	130	130	—	—	—	—	—
EME-5961C	BK	0.3	94V-0	130	130	130	—	—	—	—	—
	BK	3.1	94V-0	130	130	130	—	—	—	—	—

Reports: January 19, 1988: January 19, 1988: January 19, 1988: June 2, 1988;  
June 2, 1998; June 2, 1988.

**Replaces E59481C dated February 7, 1989.** (Cont. on C1 card)

262854001 N7047 Underwriters Laboratories Inc.® D11/0018965

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