

Sincom

ISSUED ON

25 FEB 2005

SINCOM  
INDUCTIVE TECH.

## Approval Specifications

CUSTOMER : Digi Key

PART NAME : CHIP CHOKE COIL

CUSTOMER PART No. : ELL6UH□□□□

MATSUSHITA PART No. : ELL6UH□□□□

MODEL NAME / No. :

MANUFACTURED IN : INDONESIA

### CUSTOMER'S ACKNOWLEDGEMENT

PLEASE RETURN ONE COPY

MATSUSHITA ELECTRONIC COMPONENTS (S) PTE. LTD.

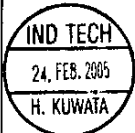


No. 3 BEDOK SOUTH ROAD, SINGAPORE 469269

FAX : 62418954

TEL : 62495176

SPEC SERIAL NO.:

T1S - 05012

Approved	Checked	Prepared
		

21.05.03 (R-1)

TE-F-MP-18

1. この製品の使用材料は、「化学物質の審査及び製造等の規制に関する法律」に基づき、すべて既存化学物質として記載されている材料です。

All the materials used in this product are registered material under the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances.

2. 本製品は、モントリオール議定書で規制されているオゾン層破壊物質(ODC)を製造工程及び購入部品・材料で一切使用していません。

This product has not been manufactured with any ozone depleting chemical controlled under the Montreal Protocol.

3. この製品に使用している全ての材料には、臭素系特定難燃物質「PBBOs、PBBe」を含有していません。

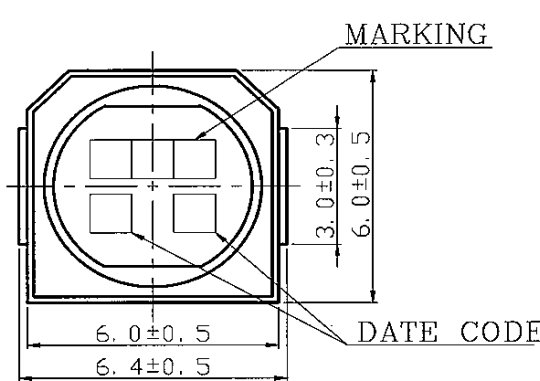
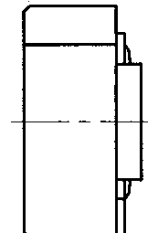
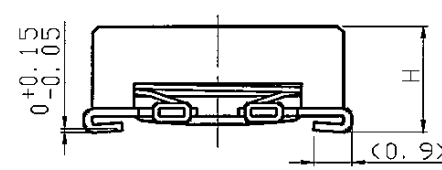
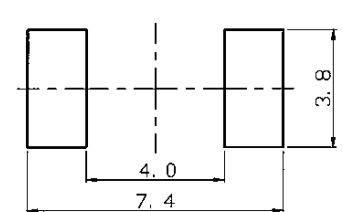
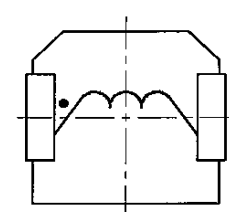
All the materials used in this product contain no brominated materials of PBBOs or PBBs as the flame-retardant.

4. 納入仕様書の「有効期間」について  
有効期間は、特に、申し出のない限り(お客様の要望を含み)自動更新とします。  
その際、連絡書・仕様書は、発行致しません。

"The Term of Validity" of Product Specifications for Information  
Unless otherwise requested ( including from customer), the term of validity shall be renewed automatically.

Then , informations and specifications shall be not issued.

5. Refer to "113-TEC-001" for ERS issues

SPECIFICATION (APPEARANCE)		(R-0)																				
Part Name <div style="text-align: center; font-weight: bold; margin-top: 10px;">CHIP CHOKE COIL (ELL6*H TYPE)</div>	151-ELL6-011  1 - 1																					
<div style="margin-bottom: 10px;"> <b>Apperance &amp; Dimensions (Unit:mm)</b> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  </div> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Type</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>ELL6RH</td> <td>2.5 ± 0.3</td> </tr> <tr> <td>ELL6SH</td> <td>3.0 ± 0.3</td> </tr> <tr> <td>ELL6UH</td> <td>4.7 ± 0.3</td> </tr> </tbody> </table> </div>			Type	H	ELL6RH	2.5 ± 0.3	ELL6SH	3.0 ± 0.3	ELL6UH	4.7 ± 0.3												
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MATSUSHITA'S P/N      E L L 6 □ H □ □ □ M □ <div style="display: flex; justify-content: center; gap: 10px; margin-top: 5px;"> <span>1</span> <span>2</span> <span>3</span> <span>4</span> </div>																						
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Date :      22-Feb-05	INDUCTIVE DEPARTMENT <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">             APPROVE IND TECH 24. FEB. 2005 H. KUWATA           </div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">             CHECK IND TECH 24. FEB. 2005 MICHAEL LIM           </div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">             PREPARED 22. FEB. 2005 STEVE LIM           </div> </div>																					

SPECIFICATION		(R-0)
Part Name		151-ELL6-086
CHIP CHOKE COIL (ELL6UH TYPE)		1 - 1

# Electrical Characteristics

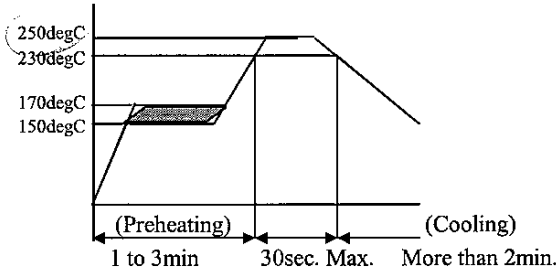
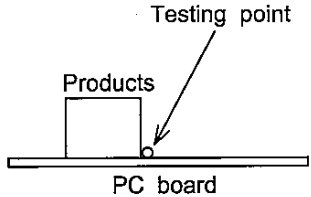
CUSTOMER'S PART NUMBER	MATSUSHITA'S PART NUMBER	INDUCTANCE		DCR(20°C)		*RATED CURRENT [mA]	MARKING
		NOMINAL [μH]	TOL.	NOMINAL [Ω]	TOL.		
ELL6UH100M	ELL6UH100M	10	±20%	0.063	±20%	1800	100
ELL6UH120M	ELL6UH120M	12		0.071		1700	120
ELL6UH150M	ELL6UH150M	15		0.079		1600	150
ELL6UH180M	ELL6UH180M	18		0.088		1400	180
ELL6UH220M	ELL6UH220M	22		0.098		1300	220
ELL6UH270M	ELL6UH270M	27		0.11		1200	270
ELL6UH330M	ELL6UH330M	33		0.13		1100	330
ELL6UH390M	ELL6UH390M	39		0.15		1000	390
ELL6UH470M	ELL6UH470M	47		0.16		900	470
ELL6UH560M	ELL6UH560M	56		0.21		800	560
ELL6UH680M	ELL6UH680M	68		0.23		700	680
ELL6UH820M	ELL6UH820M	82		0.26		650	820
ELL6UH101M	ELL6UH101M	100		0.36		600	101
ELL6UH121M	ELL6UH121M	120		0.48		580	121
ELL6UH151M	ELL6UH151M	150		0.68		500	151
ELL6UH181M	ELL6UH181M	180		0.75		470	181
ELL6UH221M	ELL6UH221M	220		0.84		410	221
ELL6UH271M	ELL6UH271M	270		1.20		370	271
ELL6UH331M	ELL6UH331M	330		1.36		330	331
ELL6UH391M	ELL6UH391M	390		1.50		300	391
ELL6UH471M	ELL6UH471M	470		1.68		270	471
ELL6UH561M	ELL6UH561M	560		2.53		260	561
ELL6UH681M	ELL6UH681M	680		2.83		240	681
ELL6UH821M	ELL6UH821M	820		3.14		200	821
ELL6UH102M	ELL6UH102M	1000		3.67		180	102

## \*RATED CURRENT

This indicates the value of current when the inductance is 70% more than nominal value and temperature rising  $\Delta t=45^{\circ}\text{C}$  lower at D.C superposition.(at 20°C)

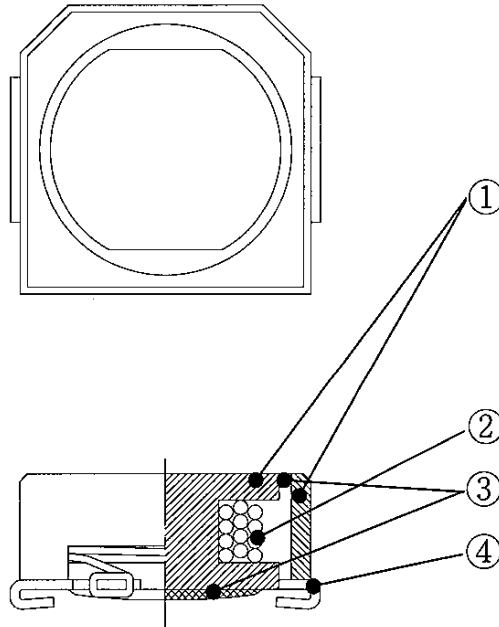
TEST CONDITION (INDUCTANCE)  
100kHz, 0.3Vrms

SPECIFICATION			(R-1)
CHIP CHOKE COIL RELIABILITY CHARACTERISTICS			151-ELL6-013
			1 - 1
ITEM	SPECIFICATION	TEST METHOD / CONDITION	
Appearance And Structure	(1)The appearance shall be no damage practically harmful. (2)Other items shall be in accordance with the appearance and the structure in the individual specification.		
Insulation Resistance	More than 100 [MΩ] .	After applying DC 100 [V] .	
Withstand Voltage	There shall be no abnormal.	After applying DC 100V for 60 [s] . Between core and coil.	
Operating temp. range	-40~105 [°C] ( Including self - temperature rise )		
ENVIRONMENTAL CHARACTERISTICS	Moisture Life	(1)There shall not be case deformation or change in appearance. (2)There shall be no shorting or disconnection.	With rated current applied, coil shall be subjected to 90~95% [RH] at 60±2°C for 500±8 [h] . Measurements shall be made after 1 [h] stabilization at room temperature.
	High Temp. Life	(1)There shall not be case deformation or change in appearance. (2)There shall be no shorting or disconnection.	With rated current applied, coil shall be stored at 85±2 [°C] for 500±8 [h] . Measurements shall be made after 1 [h] stabilization at room temperature.
	Cold Resistance	Inductance shall not change more than ±10%	Coil shall be stored at -40±2 [°C] for 500±8 [h] . Measurements shall be made after 1 [h] stabilization at room temperature.
	Heat Resistance	Inductance shall not change more than ±10%	Coil shall be stored at 85±2 [°C] for 500±8 [h] . Measurements shall be made after 1 [h] stabilization at room temperature.
	Moisture Resistance	(1)Inductance shall not change more than ±10% (2)There shall be no abnormal in withstand voltage.	Coil shall be subjected to 95~95%RH at 60±2 [°C] for 500±8 [h] . Measurements shall be made after 1 [h] stabilization at room temperature.
	Thermal Shock	(1)There shall not be case deformation or change in appearance. (2)Inductance shall not change more than ±10%	-40±2°C (for 0.5h) . 85±2°C (for 0.5h) 10 cycles. Measurements shall be made after 1 [h] stabilization at room temperature.
	Temp. Char.	Inductance shall not change more than ±15%	-25~85 [°C] Standard: Values at 20 [°C] (at Idc=0 [A] )
PHYSICAL CHARACTERISTICS	Vibration Resistance	(1)There shall not be case deformation or change in appearance. (2)Inductance shall not change more than ± 10%	After vibrating at frequencies ranging from 10 to 55 [Hz] (10~55~10/min.) with amplitude for 1.5 [mm] for 2±0.1 [h] each X-Y-Z axis.
	Terminal Strength	Terminal shall not come out.	Pulling strength of terminal: 0.98 [N] { 0.1kgf } for 30 [s]
	Solderability	Solder shall be attached more than 90 % around the dipped portion.	After fluxing, coil shall be dipped in a melted solder bath(M705) at 255±5 [°C] for 3±0.5 [s]
	Soldering Heat Resistance	(1)There shall not be case deformation or change in appearance. (2)Inductance shall not change more than ± 10%	The coil shall be subjected to reflow soldering 2times. Measurements shall be made after 1 [h] stabilization at room temperature. Reflow soldering: Preheating:150±10 [°C] , 3 [min] . Solder dipping:250±10 [°C] , 10±0.5 [s]

SPECIFICATION(COMMON)		(R-1) 151-ELL6-014
CHIP CHOKE COIL (ELL6*H TYPE) PRECAUTION FOR USE OF THE COIL		1 - 1
ITEM	CONTENTS	REMARKS
REFLOW SOLDERING	<p>HOT BLAST REFLOW FURNACE.</p>  <p>Peak Temperature: 250degC max Time above 200degC: 80 sec max</p>	 <p>Testing point Products PC board</p> <p>( Reflow soldering should be limited to 2times. )</p>
WASHING OF BOARD	When the soldered PC board washed by flean or others, you are requested to contact engineering department as for washer and washing conditions advance.	
RESOLDERING WITH ASOLDERING IRON	The temperature of the tip of the soldering iron should be 300°C or less, 3 seconds. And resoldering with a soldering iron should be limited to 1 time, and after that should be cooling these.	
MOUNTING SIDE	External force must be less than 5.0 [N] : while mounting.	
OTHERS	The customer is requested to store the products at the normal temperature (-5°C to 35°C) and the normal humidity (85%RH max.) in the packages we supplied. The package shall not be exposed to direct sunlight and harmful gas, and care should be taken so as not cause dew.	
Date : 22-Feb-2005	INDUCTIVE DEPARTMENT	

SPECIFICATION (MATERIAL)		(R-0)
151-ELL6-015		
Part Name	CHIP CHOKE COIL (ELL6*H TYPE)	1 - 1

Structure

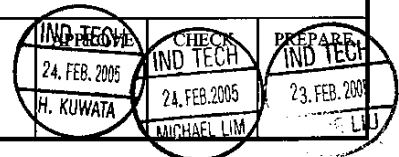


Material List

ITEM	PART NAME	MATERIALS	MANUFACTURE
1	Core	Ferrite	TDK CO.,LTD. HITACHI METALS LTD. FDK CO.,LTD. ZHEJIANG Tiantong Elect. Co.,LTD HUOH YOW ENTERPRISE CO.,LTD
2	Coil	Polyurethane Enameled Copper Wire	RIKEN ELECTRIC WIRE CO.,LTD. TOUTOKU ELECTRIC CO.,LTD. DAIICHI DENKO CO.,LTD. HITACHI DENNSEN LTD.
3	Adhesive	Epoxy Resin	OPTIONAL
4	Terminal	Phosphor Bronze	OPTIONAL

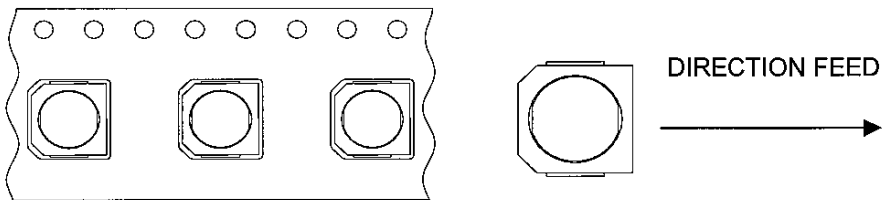
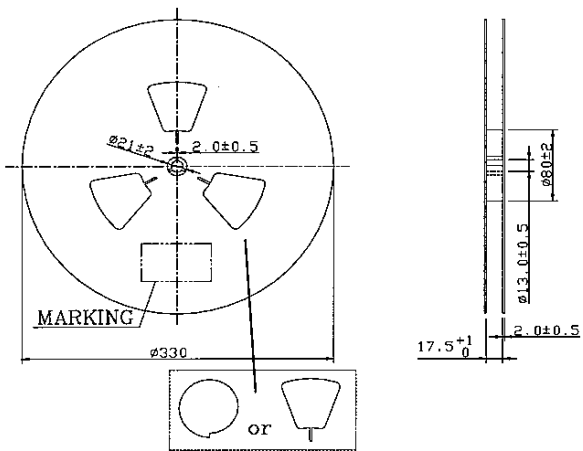
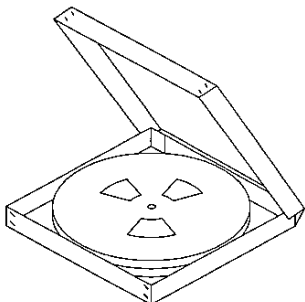
Date : 24-Feb-05

INDUCTIVE DEPARTMENT







SPECIFICATION (PACKAGING)		(R-0) 151-ELL6-087
Part Name CHIP CHOKE COIL (ELL6UH TYPE)		2 - 2
<p><u>Taping</u></p>  <p>DIRECTION FEED</p> <p>There shall not be more empty pockets than two and those pockets shall not be consecutive.</p> <p><u>Reel Dimensions</u></p>  <p>(1) QUANTITY PER REEL: 1000pcs. (2) MARKING: CUSTOMER'S P/N, OUR P/N, QUANTITY AND Lot No.</p> <p><u>Packed Form</u></p>  <p>(1) MARKING: CUSTOMER'S P/N, OUR P/N, QUANTITY AND Lot No.</p> <p><u>Material Use</u></p> <p>Corrugated Card Board.</p>		
Date : 22-Feb-05	INDUCTIVE DEPARTMENT	