

台灣雙羽電機集團

FUTABA Group

Power Resistor Specialist Since 1973

2013公司簡介



9001



14000

WWW.FUTABA.COM.TW

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Futaba Belief

雙羽經營理念產業對策

雙羽經營理念

- 產品品質一致是雙羽的基本要求
 - 保證大量生產下中每一顆產品都是合格
 - 客戶服務是雙羽每位同仁的使命
 - 取得客戶的最大信任並做好客戶要求的小細節
 - 流程改善是雙羽的核心競爭力
 - 持續流程改善以提高良率並降低成本
 - 產品研發是提供雙羽未來發展空間
 - 新產品帶來公司永續經營之動力
-

Company Profile

公司簡介

公司概要

- 1973 年成立於台灣新竹
- 員工人數: 563人
- 產品研發部門人數:9 人
- 主要產品為 功率型電阻器 (Power Resistor)
 - 阻值:0.001 to 20 x 10⁹ 歐姆 (1 mili Ohm to 20 Giga)
 - 瓦特:1/4瓦 to 2,000瓦
- 主要轉投資: (均100%持股)
 - 双羽電子 (深圳) 有限公司
 - 双羽電子 (蘇州) 有限公司
 - 双葉電子 (沙井) 有限公司

公司沿革

- 1973年 3月 與日本福島雙羽簽訂技術合作合約。
 - 1973年 10月 台灣雙羽電機股份有限公司正式成立。
 - 1974年 9月 開始量產氧化金屬膜電阻器(Metal Oxide)。
 - 1977年 1月 開始量產保險絲電阻器(Fuse Resistor)。
 - 1977年 9月 開始量產金屬板電阻器(MPC)。
 - 1997年 3月 成立大陸深圳廠，雙羽電子(深圳)有限公司。
 - 1997年 10月 台灣廠取得ISO9001認證。
 - 1998年 1月 開始量產高阻值金屬釉電阻器(Metal Glaze)。
 - 1999年 3月 大陸深圳廠取得ISO9001認證。
 - 2000年 3月 成立大陸雙葉電子廠生產著膜棒與組分品。
 - 2003年 1月 全面導入無鉛製程。
-

公司沿革

2003年 8月 深圳廠開始量產繞線電阻器,水泥電阻器。

2003年 9月 台灣廠取得 SONY GP 認證。

2003年 7月 成立蘇州廠，雙羽電子（蘇州）有限公司。

2004年 8月 蘇州廠取得ISO9001認證。

2005年 6月 生產超高值電阻 10×10^9 (10 giga Ohm)

2005年 9月 UL 認證通過本廠保險絲電阻器

2005年 9月 大陸深圳廠取得ISO14001認證。

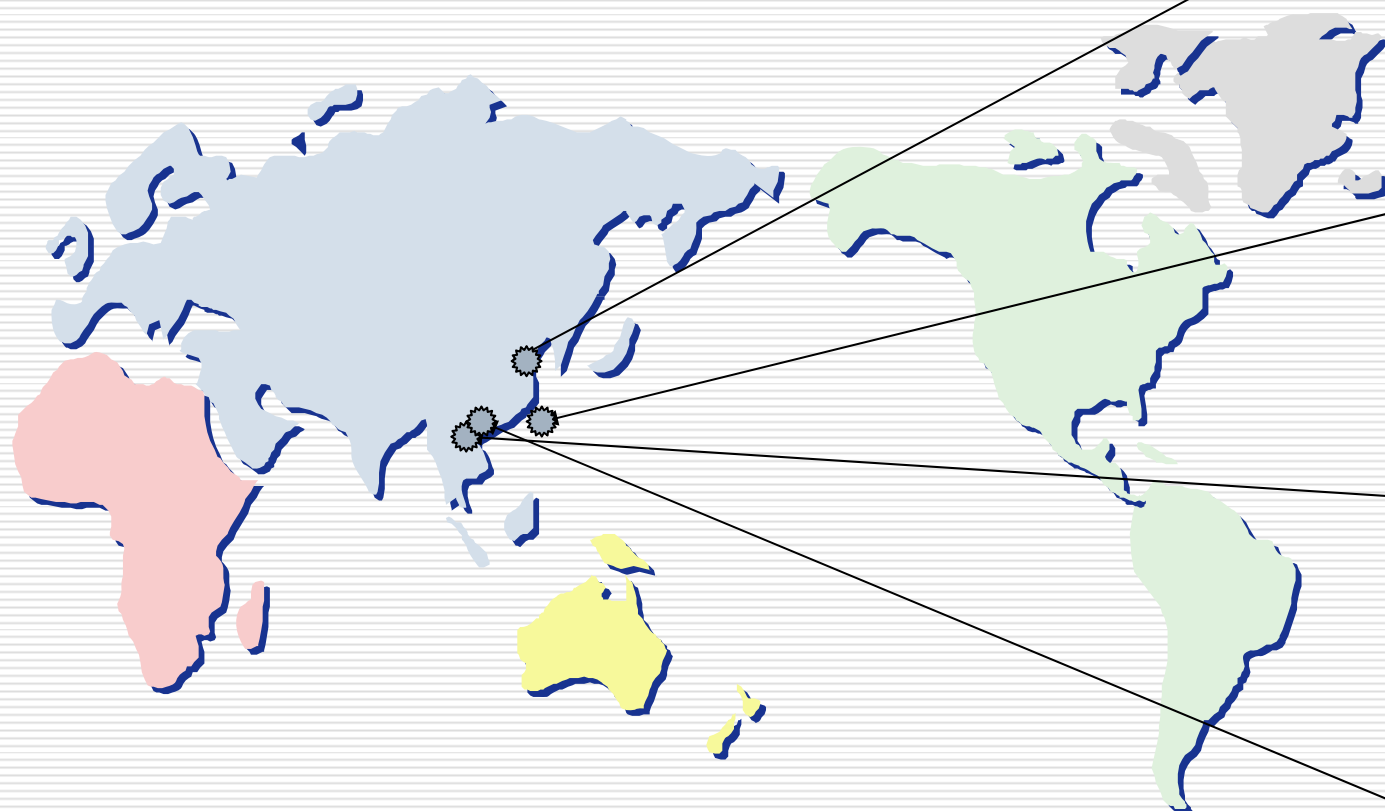
2006年 3月 大陸蘇州廠取得ISO14001認證。

2007年 3月 大陸深圳廠導入QC080000/RoHS

2009年 9月 大陸雙葉電子廠取得ISO19001認證。

2010年 2月 大陸蘇州廠取得TS16949認證。

國內生產及銷售據點



Suzhou China



Taiwan (HQ)



Shajin China



ShenZhen China



海外夥伴

日本據點

福島双羽電機株式会社 東京営業所 営業部

Sales Director 平田 寿男 HISAO HIRATA

〒146-0082 東京都大田区池上8丁目12-14

Tel: +03(5700)3611 FAX 03(5700)3343

hirata@fu-futaba.co.jp

新加坡據點

Fukushima Futaba Electronics (S) Pte Ltd

Sales Director HIROMASA YAMANOI 山野井 宏昌

78 Shenton Way #25-02Lippo Centre (S) 079120

Tel : +65-6324-0595 Fax : +65-6324-5868

yamanoi@fu-futaba.co.jp

集團月產能

主產品項目	產能/月 pcs
氧化金屬膜電阻器	150,000,000
金屬釉電阻器	30,000,000
繞線電阻器	42,000,000
保險絲電阻器	20,000,000
金屬板電阻器	3,000,000
水泥電阻器	6,000,000

廠區 機台	竹東廠T Taiwan(HQ)	石岩廠S1 Shenzhen china	沙井廠S2 Shajin chia	蘇州廠S3 Suzhou china
機台數(RS,RF,RM)	5 lines	14 lines	12 lines	10 lines
產能	1000萬pcs/月	1億pcs/月	3億pcs/月	9000萬pcs/月
機台數(RW)	4 sets	40 sets		48 sets
產能	200萬pcs/月	2000萬pcs/月		2000萬pcs/月
機台數(RG)	1 set	1 set		1 set
產能	50萬pcs/月	250萬pcs/月		350萬pcs/月
機台數(MPC)	3+2 sets自動點焊	N/A		N/A
產能	50萬pcs/月	100萬pcs/月		150萬pcs/月

Production Capability

生產系統

核心技術 (Core Technology)

酸金著膜(Metal Oxide Film Coating)

□ 壓選→切條→熔接→塗裝→造型

(Cap/Sort→Cut→Welding→Coating→Form)

□ 精密電阻 0.05% (Precision resistors)

□ 高阻值電阻 20GΩ (High ohm resistors)

□ 高突波電阻 20kV (High Surge resistor)

□ 低溫飄電阻 10ppm (Low TCR resistors)

□ 高電流電阻 40A (high current resistors)

20 MO Film Kilns (著膜爐)

Capacity: 300 Million PCS/ Month



29 Power Resistor Production Lines

Capacity: 200 Million PCS/Month



Wire Wound Resistors

Capacity: 42 Million PCS



Quality System

品質系統

品保系統

品質資料

內部稽核報告

入料/製程檢驗

供應商稽核

信賴性測試

品質改善專案報告

不良品分析

品質異常/
終檢異常分析

客訴

(品質會議)

高階經理會議

季品質會議

日品質檢討會議

客訴檢討會議

(結論)

品質政策

品質目標

改善計劃

長期改善措施
中期改善措施

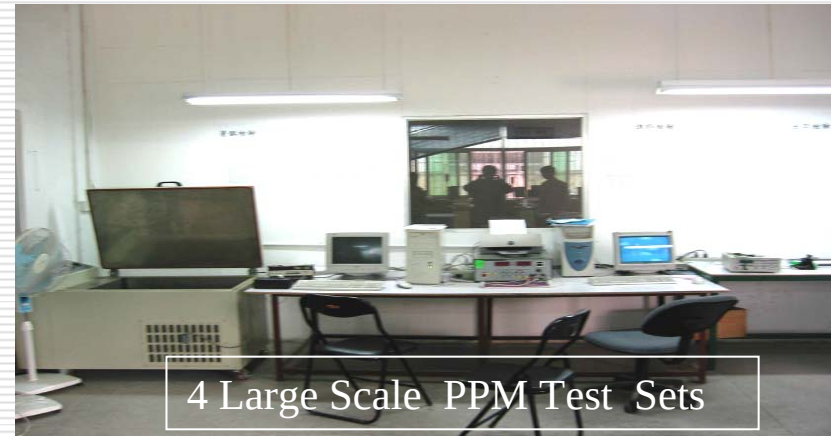
(目標)

品質改善
客戶滿意
成本下降

確實執行**16**項信賴性實驗

	試驗名稱	試驗時間	抽樣方法及抽樣數量
1	短時間過負荷	每週一	隨機抽樣，各10只
2	電阻溫度係數	每週一	隨機抽樣，各10只
3	耐電壓	隔週二	隨機抽樣，各10只
4	耐熱	每週二	隨機抽樣，各10只
5	焊錫效果	隔週三	隨機抽樣，各10只
6	焊錫耐熱	每週三	隨機抽樣，各10只
7	斷續過負荷	每週四	隨機抽樣2種，各10只
8	端子線拉力	隔週四	隨機抽樣，各10只
9	端子線扭轉	隔週四	隨機抽樣，各10只
10	溫度循環	每週五	隨機抽樣，各10只
11	低溫儲存	每週五	隨機抽樣，各10只
12	耐濕	每10天一次	隨機抽樣，各10只
13	不燃性	每月一次	隨機抽樣，各10只
14	絕緣電阻	每月一次	隨機抽樣，各10只
15	耐濕負荷	每45天一次	隨機抽樣，各10只
16	負荷壽命	每45天一次	隨機抽樣，各10只

完整品管實驗室 Well-Equipped QC Lab



Business Data

營業資訊

代表性客戶

Taiwan Division / 台灣廠

Export: 30+ Clients including

SONY, JVC, Philips, Delta(Thailand), Thomson(India), Jabil, FSP Group
索尼, 勝利, 飛利浦, 泰達(泰國), 湯姆遜 (印度), 捷普, 富創碩

Domestic: 100+ Clients including

台達, 東電化, 伊頓飛瑞, 飛宏

China Division / 大陸廠

Export: 群光全球最大Adapter供應商 冠捷全球最大Monitor供應商

LiteOn, AOC, Delta, Philips, Chicony , Bestec, TDK, Flex Power
光寶, 冠捷, 台達, 飛利浦, 群光電能, 聯德, 東電化, 偉創力
Emerson, Foxconn, Wistron, Darfon, PhiPhong, Meanwell, Acbel
艾默生, 富士康, 緯創, 達方, 飛宏, 明緯, 康舒

Domestic: 富士康全球最大EMS 代工廠 台達 全球最大SPS供應商

雙羽競爭力

A. 品質:深耕生產技術，且維持品質一致性

A. 39年來秉持從頭到尾一條龍穩定的生產型態

B. 持續改善品質、材料，提升產品規格

B. 價格:功率電阻市場領導者

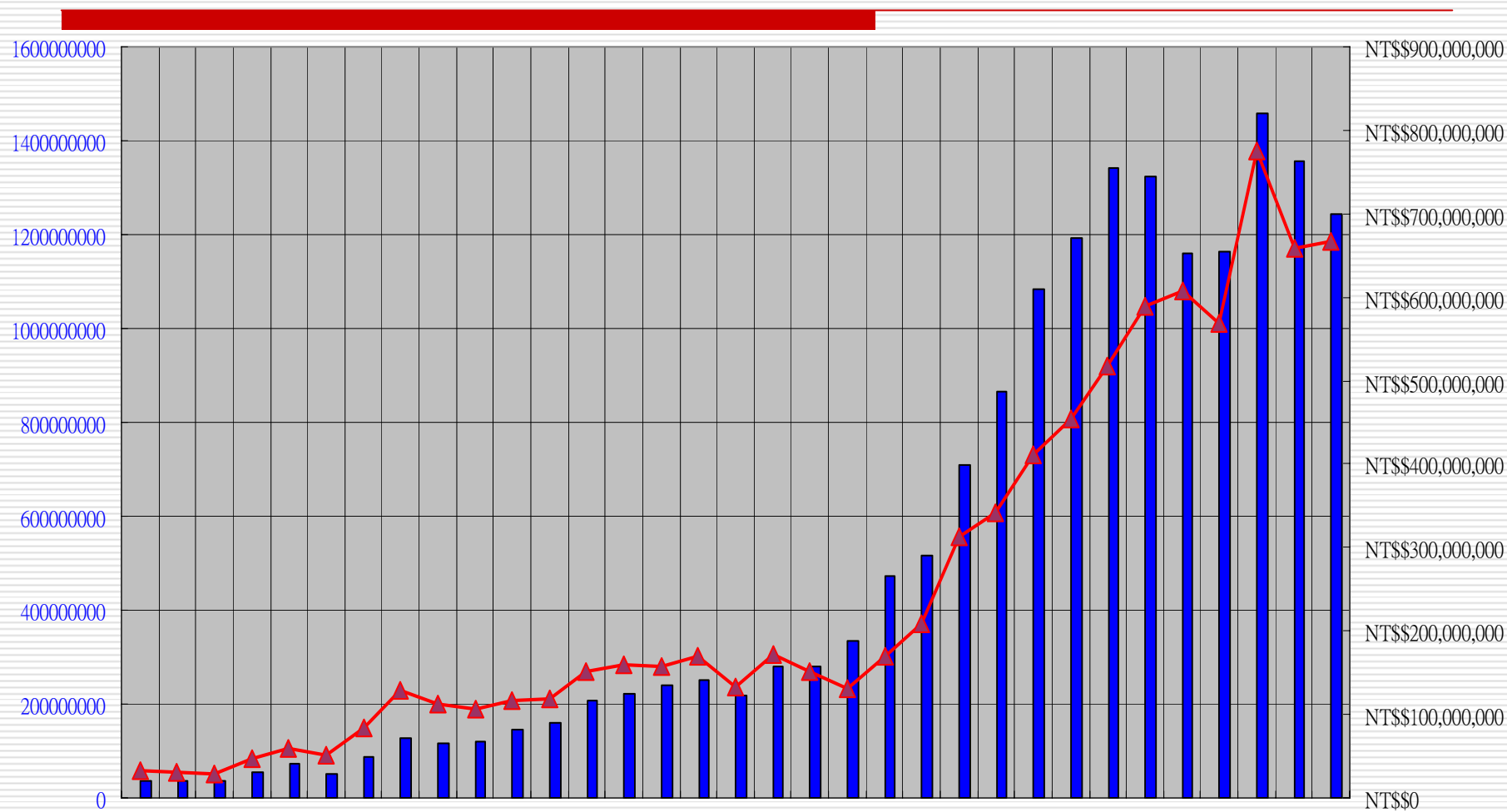
A. 功率電阻(MO, MG, Fuse)月出貨1.5億PCS

B. 國際一流客戶(TV, Monitor, SPS, 3C)

C. 服務:提供完整的電阻技術支援

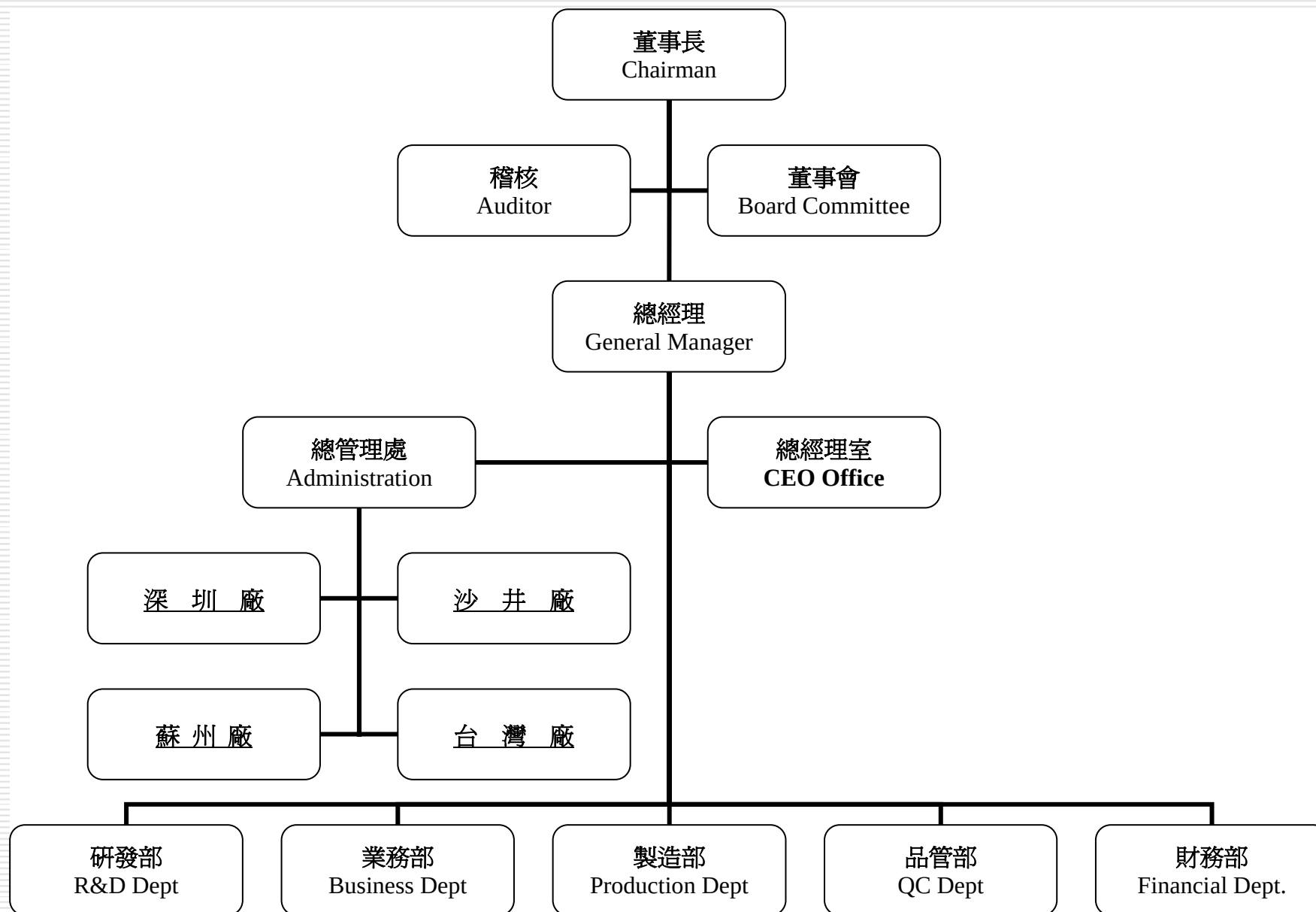
D. 進步:不斷創新的研發團隊，年開發4項新產品

雙羽集團 成長趨勢圖(民國 69-101)
Futaba Group Growthth Chart (1980 to 2012)

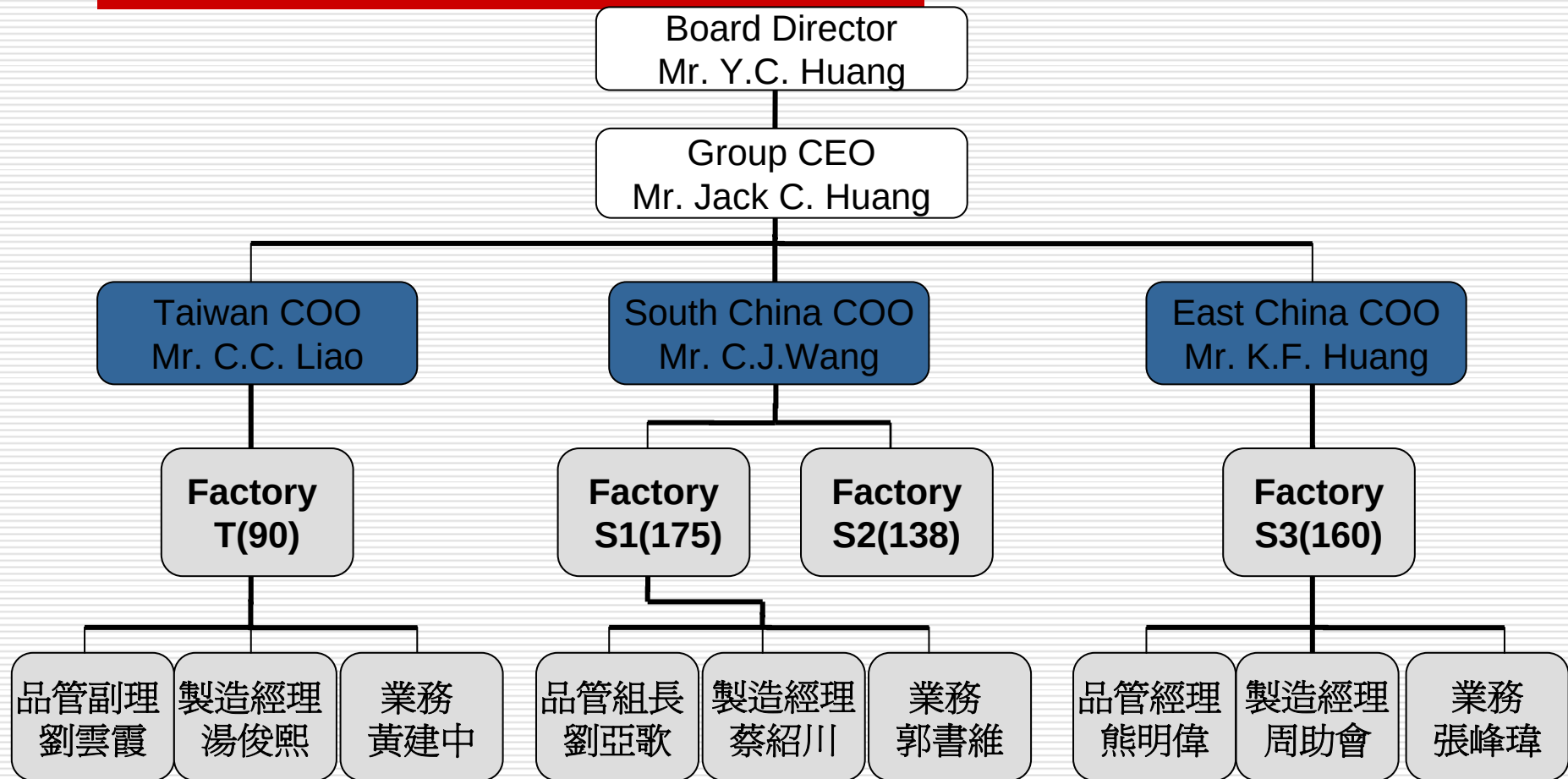


Organization Chart

組織圖



Futaba Groups (Sites)



Product and System Certification

證書

ISO 9001

ISO 14001

TS 16949

UL/ETL/VDE

SONY GP

ISO 9001:2000 Certificate (China)

CERTIFICATE OF REGISTRATION	
Quality Management System	
This is to certify that: Shuang Yu Electronics (Shenzhen) Co., Ltd. No. 3, Tang Tou Ind. Zone Shi Yan Town, Baoan District Shen Zhen City, Kwang Tung China 雙宇電子(深圳)有限公司 宝安区沙井街道沙井社区工业路二二二	
Held Certificate No: FM 45174 and operates a Quality Management System which complies with the requirements of BS EN ISO 9001:2000 for the following scope: The manufacture of metal oxide film resistors.	
For use on behalf of BSI:  Certification Manager	
Originally registered: 03 Mar 1998	Latest issue: 02 Jan 2003 Page: 1 of 2
 BSI	 BSI Management Systems
This certificate is the property of BSI and shall not be used for other purposes without prior request. This certificate may not be used to claim a right of representation. Further conditions applying to the scope of this certificate and the applicability of its provisions shall be determined by consulting the organization. The BSI Standard Institution is incorporated by Royal Charter. Group Registration: 9800 (Shenzhen) Regd. Office: London W1A 0AL, UK.	

CERTIFICATE OF REGISTRATION	
Quality Management System	
Certificate No: FM 45174	
Location	Registered Activities
Shuang Yu Electronics (Shenzhen) Co., Ltd. No. 3, Tang Tou Ind. Zone Shi Yan Town, Baoan District Shen Zhen City, Kwang Tung China 雙宇電子(深圳)有限公司 宝安区沙井街道沙井社区工业路二二二	The manufacture of metal oxide film resistors.
Originally registered: 03 Mar 1998 Latest issue: 02 Jan 2003 Page: 2 of 2	
This certificate is the property of BSI and shall not be used for other purposes without prior request. This certificate may not be used to claim a right of representation. Further conditions applying to the scope of this certificate and the applicability of its provisions shall be determined by consulting the organization. The BSI Standard Institution is incorporated by Royal Charter. Group Registration: 9800 (Shenzhen) Regd. Office: London W1A 0AL, UK.	

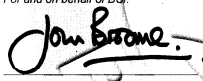
ISO 14001 Certificate (China)



CERTIFICATE OF REGISTRATION
Environmental Management System

This is to certify that:
Shuangyu Electronics (Shenzhen) Co., Ltd.
No. 2, Tangtuo Ind. Zone
Shiyan Town, Bao An District
Shenzhen
Guangdong Province 518108
P. R. China
双羽电子(深圳)有限公司
中国广东省深圳市宝安区石岩镇塘头新村工业厂房二栋
邮编: 518108

Hold Certificate No: EMS 99076
and operate an Environmental Management System which complies with the requirements of
BS EN ISO 14001:2004 for the following scope:
The manufacture of resistors.
电阻器的制造

For and on behalf of BSI:

Certification Manager, Systems Assessment

Originally registered: 22 Dec 2005 Latest issue: 22 Dec 2005 Page: 1 of 2


003

This certificate remains the property of BSI and shall be returned immediately upon request.
This certificate does not expire. To check its validity visit www.bsi-global.com/BusinessPartners.
If relevant, additional certified addresses are recorded to the following pages of this certificate.

The British Standards Institution is incorporated by Royal Charter.
Group Headquarters: 389 Chiswick High Road, London W4 4AL, UK.

BSI
Management
Systems



CERTIFICATE OF REGISTRATION
Environmental Management System

Certificate No: EMS 99076

Location	Registered Activities
Shuangyu Electronics (Shenzhen) Co., Ltd. No. 2, Tangtuo Ind. Zone Shiyan Town, Bao An District Shenzhen Guangdong Province 518108 P. R. China 双羽电子(深圳)有限公司 中国广东省深圳市宝安区石岩镇塘头新村工业厂房二栋 邮编: 518108	The manufacture of resistors. 电阻器的制造

Originally registered: 22 Dec 2005 Latest issue: 22 Dec 2005 Page: 2 of 2

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This certificate does not expire. To check its validity visit www.bsi-global.com/BusinessPartners.
If relevant, additional certified addresses are recorded to the following pages of this certificate.

The British Standards Institution is incorporated by Royal Charter.
Group Headquarters: 389 Chiswick High Road, London W4 4AL, UK.

BSI
Management
Systems

TS16949 Certificate (China)

 **Certificate of Registration**

QUALITY MANAGEMENT SYSTEM - ISO/TS 16949:2009

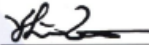
This is to certify that:

Futaba Electronics (Suzhou) Co., Ltd. Chunqiu Road Panyang Industrial Park Huangdai Town, Xiangcheng District Suzhou City Jiangsu 215100 China	双羽电子(苏州)有限公司 中国 江苏省 苏州市 相城区黄埭镇 潘阳工业园 春秋路 邮编: 215100
--	---

Holds Certificate No: **TS 556935**
and operates a Quality Management System which complies with the requirements of ISO/TS 16949:2009 for the following scope:

The manufacture of resistors.
Permitted Exclusions: Product design.

For and on behalf of BSI:


Managing Director, BSI (China), Dr. Yi Min Gao

Originally registered: **10/02/2010** Latest Issue: **02/05/2012** Expiry Date: **09/02/2013**

IATF Number: **0097376**

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated at: www.bsi-global.com/CertDirectory
Printed copies can be validated at www.bsi-global.com/CertDirectory or telephone +86 10 85157062.
Further clarifications regarding the scope of this certificate and the applicability of ISO/TS 16949:2009 requirements may be obtained by consulting the organization.
This certificate is valid only if provided original copies are in complete set.

IATF Contracted Office: BSI Group America Inc., 12110 Sunset Hills Road, Suite 200, Reston, VA20190, USA.
China Headquarters: Floor 20 East Ocean Center, No. 24A Jianguomenwai Street, Beijing 100004, P. R. China.



Page: 1 of 2

UL/VDE Certificates MG(高壓) Series

Certificate of Compliance

Certificate Number: 20100323-E220321
Report Reference: E220321, 2010 March 18
Issue Date: 2010 March 24

Page 1 of 2



Issued to: FUTABA ELECTRIC CO LTD

9 Lane 240 Tanning Rd Chungung
Hsinchu, 310
Taiwan

This is to certify that
representative samples of

Conductive Path Resistors
Models RM Series.

Have been investigated by Underwriters Laboratories in accordance with
the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1676 - CONDUCTIVE-PATH AND DISCHARGE-PATH RESISTORS FOR
USE IN RADIO-, VIDEO-, OR TELEVISION-TYPE APPLIANCES - Edison
SRD

Additional Information: See UL On-line Certification Directory at WWW.UL.COM for additional information.

Only those products bearing the UL Recognized Component Mark for the U.S. and Canada should be considered as being covered by UL's
Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product
designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying
products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark **TM** may be used in conjunction with the
required Recognized Mark. The Recognized Component Mark is required when specified in the UL Directory preceding the recognition or under "Marking"
for the individual recognition. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada **TM** and the manufacturer's
identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the
appropriate UL Directory.

Look for the UL Recognized Component Mark on the product

William R. Carney
Director, North American Certification Programs

Underwriters Laboratories Inc.
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For questions, please contact a local UL Customer Service Representative at <http://www.ul.com/global/eng/pages/contact-us.html>

Certificate of Compliance

Certificate Number: 20090729-E220321
Report Reference: E220321, March 22, 2002
Issue Date: 2009 July 29

Page 1 of 1



Issued to: Futaba Electric Co. Ltd.

9 Lane, 240 Tanning Rd.
Chungung
Hsinchu, 310 Taiwan

This is to certify that
representative samples of

Discharge-Path Resistors
Type RM

Have been investigated by Underwriters Laboratories in accordance with
the Standard(s) indicated on this Certificate.

Standard(s) for Safety: Standard UL 1676, Third Edition, dated September 1, 2000; revisions dated
October 16, 2001.
Canadian National Standard CSA C22.2 No. 1-98.

Additional Information: Ratings:
1/2, 1, 2 Watt, 680 Kilohms to 10 Megohms, 125 V ac.
Resistance Tolerance = 5% or ± 10%

Only those products bearing the UL Recognized Component Mark for the U.S. and Canada should be considered as being covered by UL's
Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product
designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying
products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark **TM** may be used in conjunction with the
required Recognized Mark. The Recognized Component Mark is required when specified in the UL Directory preceding the recognition or under "Marking"
for the individual recognition. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada **TM** and the manufacturer's
identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the
appropriate UL Directory.

Look for the UL Recognized Component Mark on the product

Issued by: Mary Walton
Mary Walton, Project Handler II

Reviewed by: Mark Harkowski
Mark Harkowski, Staff Engineer

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For questions, please contact a local UL Customer Service Representative at <http://www.ul.com/global/eng/pages/contact-us.html>

VDE Prüf- und Zertifizierungsinstitut

GUTACHTEN MIT FERTIGUNGSÜBERWACHUNG CERTIFICATE OF CONFORMITY WITH FACTORY SURVEILLANCE

Futaba Electric Co., Ltd.
9, Lane 240, Tanning Road
310 CHUTUNG, Hsinchu
TAIWAN

Ich bescheinige, für die Produkte:
is authorized to use for their products

Festwiderstand
Fixed resistor

die hier abgedruckt markenrechtlich geschützten Zeichen
für die ab Blatt 2 aufgeführten Typen zu benutzen /
the legally protected Marks as shown below for the types referred to on page 2 (i).



PCS Nr. D430 version



oder VDE R33 - Nr. C-02

PCS Nr. D433

Geprüft und zertifiziert nach:
Tested and certified according to

DIN EN 60065 (VDE 8888):2005-07 Clause 14.1 a)



Aktenzeichen: 0011876/4/00-0001 / 120/04

File Nr.:

VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Zertifizierungsgesellschaft mbH

Akten-Nr.: 40330434

Certificate No.

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VDE Testing and Certification Institute
Zertifizierungsgesellschaft mbH

VDE 8888:2005-07
VDE 8888:2005-07



WWW.FUTABA.COM.TW

PRC 5637

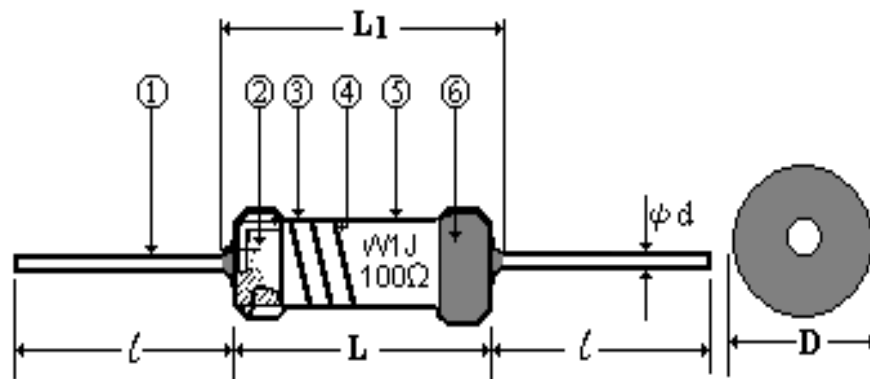
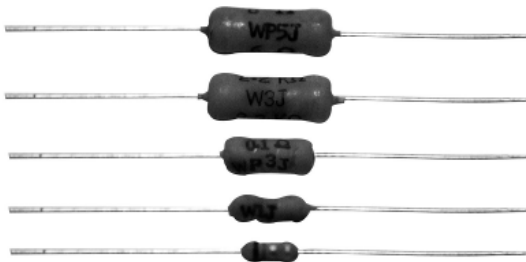
WWW.FUTABA.COM.TW

Product Outline

產品概要

繞線電阻器

Wire Wound Resistor



Features:

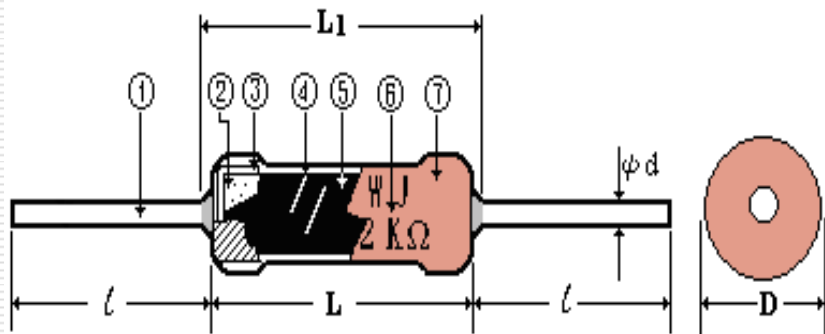
- 0.05~20 Ω
- 10~500ppm
- For inrush limiting
- Fusing Function
- For current sensing

Applications:

- Power Supply
- Charger
- TFT LCD TV
- Hi-Fi System
- Measuring Equipment
- Industry Equipment

金屬釉高壓電阻器

Metal Glaze Resistor



Features:

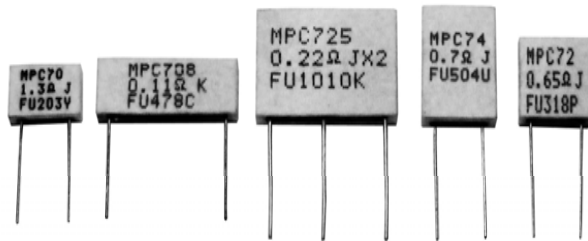
- 100K~100M Ω
- Surge up to 10 KV
- UL 1676 approved
- VDE approved
- CQC approved
- For release voltage

Applications:

- Power Supply
- TFT LCD TV Power
- Hi-Fi System Power
- Industry Equipment

金屬板電阻器

MPC Metal Plate Cement Resistor

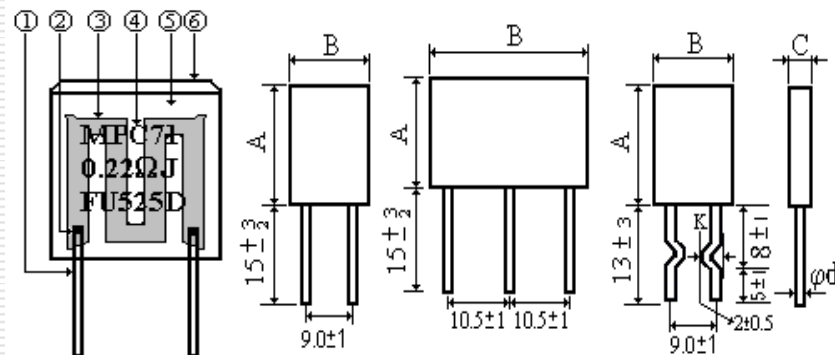


Features:

- Low Ohm (0.01 Ohm to 6.8 Ohm) for High current
- Low induction ($< 0.1 \mu H$)
- For current sensing

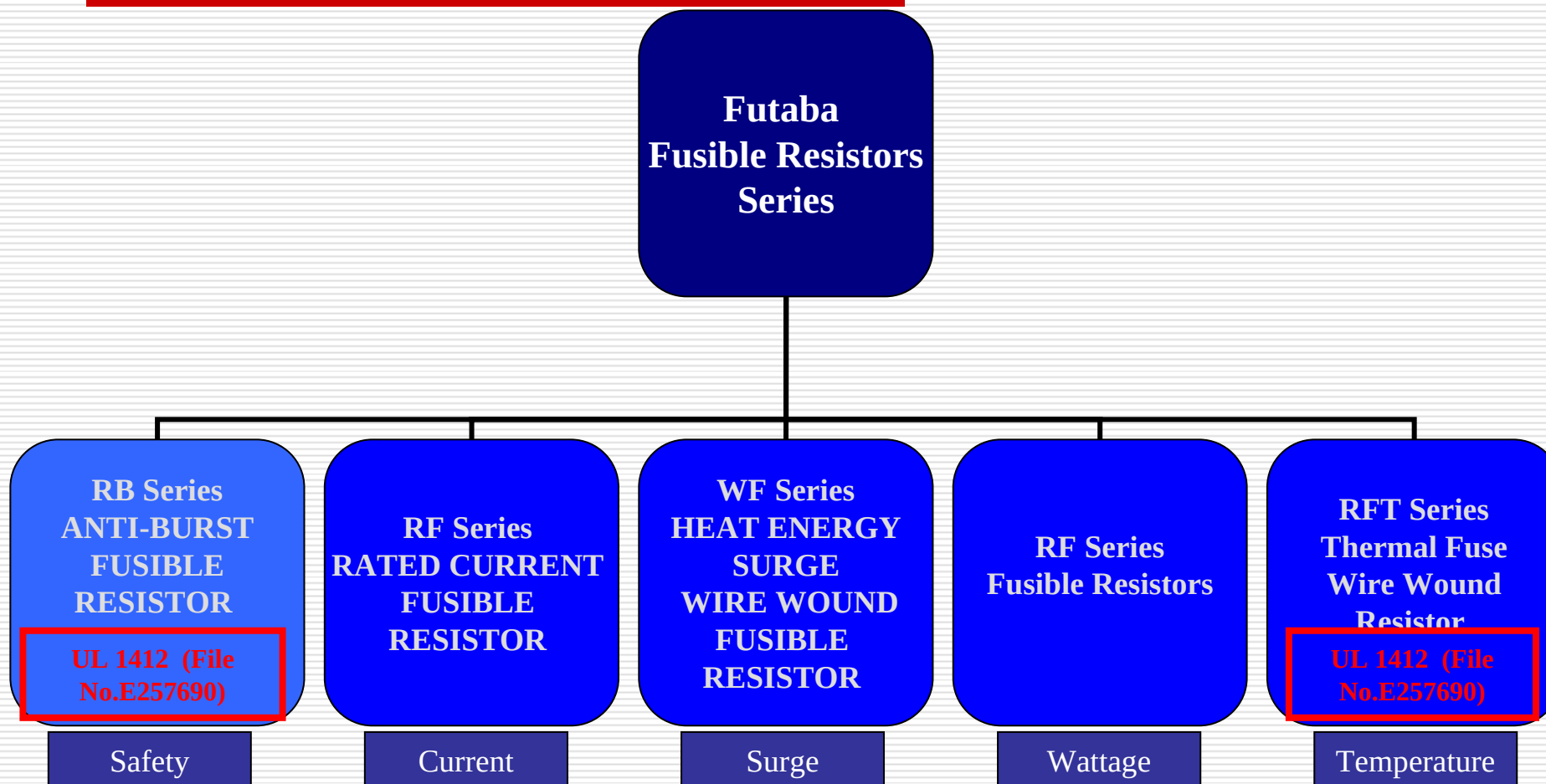
Applications:

- TFT LCD TV Power
- Hi-Fi System Power
- Industry Equipment
- Main Board of Air condition.



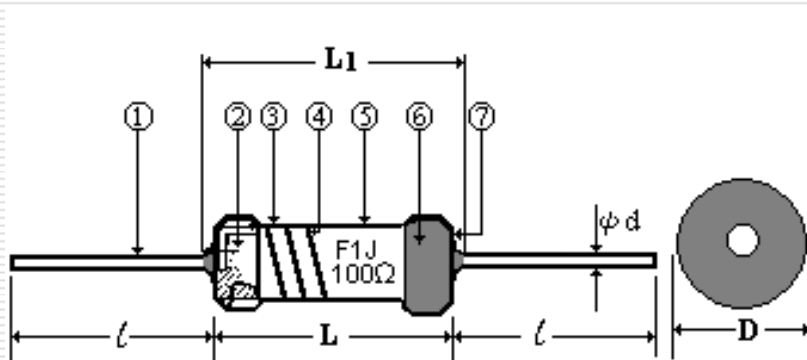
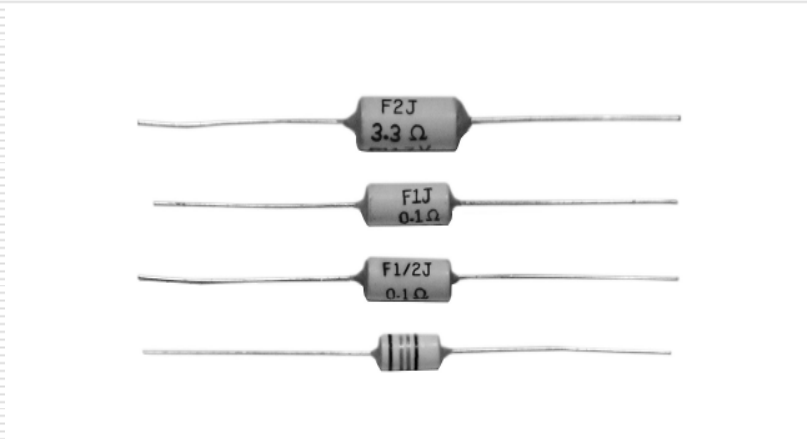
各式保險絲電阻器

Five Kinds of Fusible Resistors



防爆保險絲電阻器

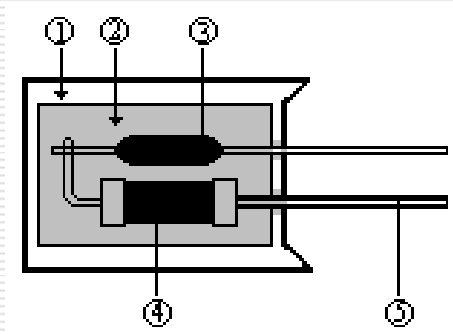
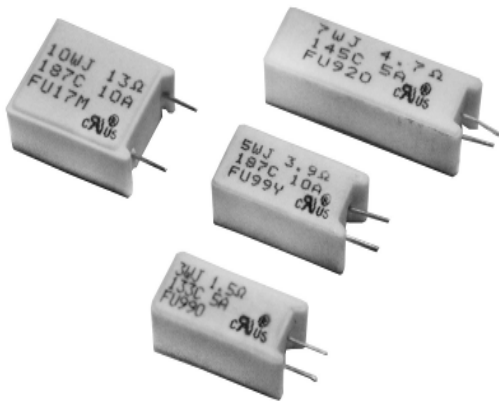
ANTI-BURST FUSIBLE RESISTOR



- Features:
 - UL 1412 Approved
 - Environment Safe Fusing Behavior
 - Anti-surge up to 10KV
- Applications
 - Power Supply
 - Charger
 - TFT LCD TV Power
 - Lighting Driver

繞線&溫度組合型保險絲電阻器

Thermo-fuse & Wire wound composite Cement Resistors



□ Features:

- Dual Functions as resistor in normal conditions and fusing on abnormal temperature
- Fusing w.r.t. Specified Temp (115° C to 223° C)

□ Applications:

- Server level SPS
- Printer Power
- Heavy Equipment

2013計畫

□ 安規/企業認證

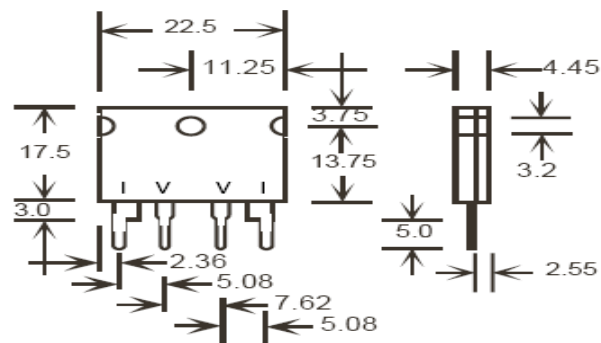
繞線電阻器CQC認證—申請中

AECQ200 車用零件認證—規劃中

□ 新產品

小型溫度保險絲電阻器 1W Wire+Thermal fuse

大電流取樣電阻器 40A current sensor resistor



Q & A

