

CBS Europe Srl

FORNITORE di COMPONENTI ELETTRONICI

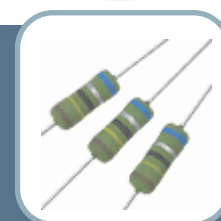
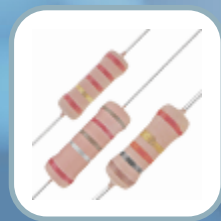


LA VOSTRA SODDISFAZIONE E' IL NOSTRO MIGLIORE BIGLIETTO DA VISITA



La FIRSTOHM nasce a Taiwan nel 1969. Fin dall'inizio l'obiettivo dell'azienda è stato quello di specializzarsi nella produzione di resistori nelle varie tecnologie costruttive. Le tappe per un progresso tecnologico e qualitativo sono state l'acquisizione nel 1974 di processi di produzione Giapponesi e nel 1982 l'acquisizione di uno dei maggiori plant produttivi appartenuti alla Sony.

E' datata 1986 l'acquisizione di una sussidiaria della Yokohama Electronics che permette all'azienda di possedere il know-how per la produzione di resistori metal film ad alta precisione. Da ricordare nel 1991 lo sviluppo dei resistori smd melf di alta qualità che gli permette di ottenere importanti ordinativi da parte di Thomson. E' del 1999 lo sviluppo del resistore high-voltage 50KV che gli permette di entrare nel mercato mondiale come fornitrice di importanti multinazionali. La qualità indiscussa e il ventaglio di prodotti offerto, non in ultimo la possibilità di customizzazione, pone la Firstohm come riferimento per forniture di resistori di qualità che coprono le più svariate esigenze applicative, tra le più importanti quelle Automotive.



PRODUCTS

- Current Sense PTH Resistors
- Enhanced Film Fixed PTH / MELF Resistors
- Fusible PTH / MELF Resistors
- High Voltage Discharge PTH Resistors
- Metal Film Fixed PTH / MELF Resistors
- Metal Oxide Film Fixed PTH Resistors
- Metal Film Precision PTH / MELF Resistors

- Pulse Safety PTH Resistors
- Non Flammable PTH Carbon
- Non Inductive PTH Resistors
- Professional Metal Film Axial PTH / SMD Resistors
- Pulse Protective PTH Resistors
- Power Sink PTH Resistors
- Spark-Gap Surge Absorber / Arrester PTH / MELF Resistors
- Wire Wound PTH Resistors
- Anti-Surge, Wire Wound PTH / MELF Resistors

- Ignition Fixed PTH Resistors
- Jumper Wire
- High Frequency Terminator MELF Resistors
- Medium / High Voltage MELF Resistors
- Stabilized Film Power PTH / MELF Resistors, AEC-Q200
- Slug MELF Resistors
- ESD Surge MELF Resistors
- Wire Wound Ignition Noise Suppression MELF Resistors



Established & Expanded

- 1969 Established in Taipei, Taiwan.
- 1970 Selected as original equipment manufacturer by a Japanese wireless company.
- 1974 Acquired resistor manufacturing equipment from Noble Electronic, a Taiwanese joint venture by Teikoku Tsushin Kogyo of Japan.
- 1983 Partnership with TRW (USA) and Xi Hua Electronics (Canada).
- 1986 Acquired precision resistor technology from Yokohama Denshi Seiko of Japan.
- 1987 Became the first to develop MELF resistor in Asia excluding Japan. Approval and orders obtained from a reputable French consumer products giant.
- 1989 Acquired chip resistor technology from Uno Denshi of Japan.
- 1990 Pioneered laser trimming in resistor manufacturing in Taiwan.
- 1991 *Developed surge/pulse resistant resistors. Approval and orders awarded by an American multinational conglomerate with products and services ranging from home appliances to power generation.
- 1999 *Developed high voltage resistors with overload voltage up to 50KV. Orders awarded by a renowned French car maker.
- 2008 SYNEOHM™ platform launched two patented product series – Spark-Gap Surge Absorber (SGS) and Current Sense MELF Resistor (CSM). SGS is also the first non-resistor product developed by Firstohm.
- 2014 Successfully developed 0102 metal film MELF resistor.
- 2020 Successfully developed the SSWAT series for ECG cable applications.



Certification

- 1998 Awarded DIN EN ISO-9001 by TUV CERT Certification Body of TUV Anlagentechnik GmbH, Germany.
- 1998 *Established ISO 14001 management system. First passive component manufacturer in Taiwan to obtain IECQ certification awarded by United States National Supervising Inspectorate for the IEC Quality Assessment System for Electronic Components.
- 2000 ISO 14001 certified. ISO 9001 certified
- 2001 ISO 14001 Green Dove Award received.
- 2004 High-Voltage Resistor (HVR series) passed VDE0860 (EN60065).
- 2011 *ISO 9001:2008 certified. *SGS has awarded patents in Europe.
- 2012 SGS has awarded patents in Japan, China, and Korea.
- 2016 Surge Resistant MELF Resistor (SRM series) passed VDE0860 (EN60065).
- 2017 Successfully Developed AEC-Q200 products.
- 2018 SWAT/SWMT have awarded patents in TAIWAN And U.S

Strong R&D Concentrates On New-Generation Markets

When Firstohm was first established in 1969, we had oriented ourselves in the specialization of thick film and thin film resistors. Firstohm acquired substantial resistor manufacturing techniques from Japan in 1974, and further acquired a major resistor factory from SONY in 1982. In 1986, Firstohm acquired an NEC subsidiary Yokohama Electronics for its technology of precision metal film resistors. Afterward, Firstohm successfully developed a chip resistor, a surge resistor. In 1991, Firstohm developed the high-end MELF Resistor(SMD Resistor), which drew a large number of orders from Thomson, a worldwide leader in electronic products. In 1999, Firstohm successfully developed 50KV High Voltage Resistors, which obtained orders from the French car maker Renault. We pioneered many types of resistors in Taiwan, as well as in the world. Firstohm has succeeded in the long-term achievement of R&D and managed our competitive niche in the market.

High Degree Of Flexibility And Automation Of Production Lines

Firstohm 's consistent investment in the best manufacturing equipment has gained a competitive corporate image of quality, reliability, and price by our own know-how in maintenance, modification, and flexible utilization of the equipment.

High Quality

Because of our effort in improving product quality and reliability, Firstohm had been awarded the best performance by Phillips and AT&T. Firstohm also has been awarded the Best Enterprise Award by TEEMA. These honors are also very helpful when we develop a new market.

Besides, we obtained ISO 9001 certification in 1998. Next year, we obtained IECQ certification. In 2000, we pass the evaluation of ISO 14001. This certificate improves our effort in production control and reducing the harm to the environment.

Professional R&D Service Team

To keep up with the fast change in the market, Firstohm adopts a flat managerial structure to facilitate the pace of decision making. The management team here at Firstohm also has a full understanding of customers' applications and material science. Thus, resistor technology is manipulated as a state-of-the-art skill at Firstohm and new products can be developed speedily. We have successfully developed some specialty resistors such as Anti-Surge Resistor, Wire Wound Fast Fuse Resistor, Ignition Resistor, High Frequency Terminator Resistor, etc.

Expert In Resistor Production And Owner Of Hundreds Patents

R&D is the core of our growth strategy and we are committed to developing new resistor technology.

Our research engineers have years of experience in resistor production on a daily basis before they join the exploration of new resistor technology. They have outstanding achievements in improving efficiency and precision. Meanwhile, CEO Mr. Lee has a strong background in passive components. He works in this field for about thirty years. He obtains about ninety patent licenses issued by the R.O.C. government.

Full Range Of Products

Firstohm offers a one-stop shopping service. That means we can manufacture all kinds of different products to meet our client's demands. On the other hand, we also build JIT (Just In Time) delivery system. That shortens the period of the goods delivery. In this field, Firstohm is in the leading status among our competitors.

Quality Policy

Firstohm's quality policy is our top priority to cultivate company operation and preserve it with recognition from our domestic and overseas customers over 50 years. The core competency on innovative products - MELF Resistors with superior quality has been Firstohm's foremost important mission to strive for continuous success.

In search of high-quality practice, besides stringent inspection of finished goods, detailed products screening and inspection were implemented with perfection in each production process, further improvisation on continuous review of processes will enhance consistency in desired quality level.

FIRSTOHM provides professional education and training in a conducive working environment, enabling the technician to focus on quality management control to accomplish processes in compliance with standard operating procedures. Firstohm takes quality seriously with pride as part of the Company's DNA and Culture to nurture this superior tradition in new products development that will surpass customer's needs & expectations.

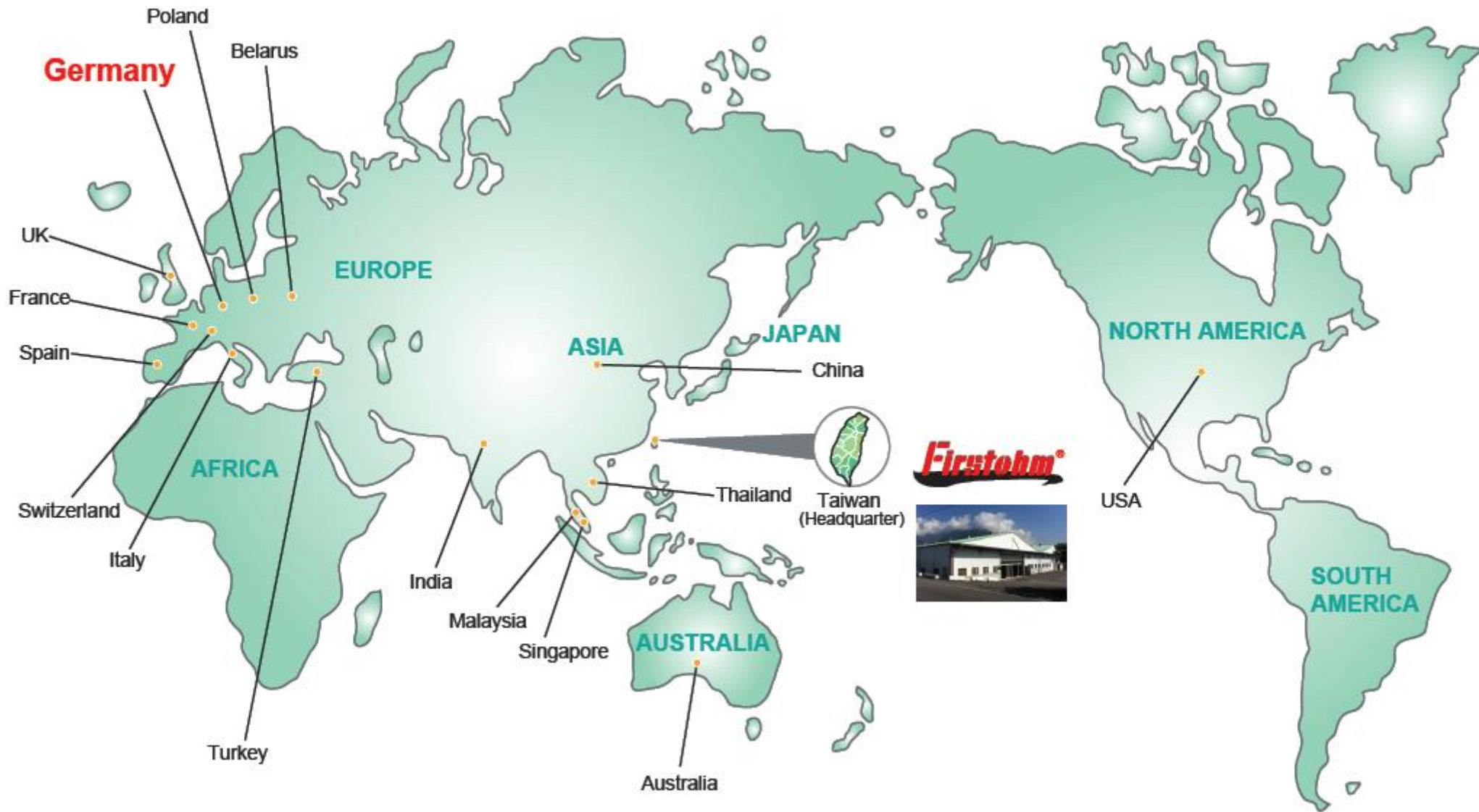
Firstohm's superior quality policy will forge and create mutually beneficial relationships with our esteemed customers for a sustainable business in future.

Cost - Down Policy

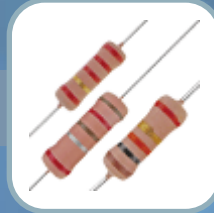
Firstohm is one of the few companies who is able to design resistors according to customer's requirements. The characteristics of resistance will affect the reliability of circuit design. Many products have been returned for repair soon after they left the factory, a part of the reason is that they did not choose a suitable resistor. If you can't find suitable resistors, you are suggested to contact our Distributors. Based on your requirement of circuit design, we will design a suitable resistor for your circuit.

Due to the trend of specialization in the electronic industry, many of you do not have your brand names, but only carry design and production for brand-name companies. In this case, we would want to co-operate with you in the following ways:

1. Resistor application consulting.
2. Development of specialty resistor according to your requirements.
3. Resistor Cost-Down by equivalent substitute and multi-functional resistor to reduce other components.



Through Hole Resistors



Current Sense Resistors.

- Offers better reliability than regular low-ohm resistors using our proprietary HeatSinkTM technology.
- Lead-free tin plated deoxygenized copper wire provides stable value of resistor during operation.
- Flame-proof coating available
- Typical temperature coefficient: 100ppm ~ 300ppm.

Series CSR

Metal Film Fixed Resistors.

- Conformal multi-layer coating.
- Color code per MIL & EIA standards.
- Special tin-plated electrolytic copper lead wire.

Series M

Metal Film Precision Resistors.

- Conformal multi-layer coating.
- Color code per MIL & EIA standards.
- Special tin-plated electrolytic copper lead wire.
- Typical temperature coefficient: 10ppm ~ 50ppm.

Series MP

Power Metal Film Resistors.

- Conformal multi-layer coating.
- Color code per MIL & EIA standards.
- Special tin-plated electrolytic copper lead wire.
- Typical temperature coefficient: 250ppm.

Series PWR

Series PMA

Professional Metal Film Axial Resistors.

- Conformal multi-layer coating.
- Excellent stability and better power handling.
- Typical temperature coefficient: 5ppm ~ 100ppm.

Series ZOM

Zero Ohm Metal Film Resistors.

- Conformal multi-layer coating against humidity
- Very low resistance
- Stable metal film construction
- Special tin-plated deoxygenized copper wire for resistance stabilization during operation

Series EFR

Enhanced Film Fixed Resistors.

- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- High power handling in small size.
- Typical temperature coefficient: 50ppm ~ 500ppm.

Series MO

Metal Oxide Film Fixed Resistors.

- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Solvent resistant.
- Special tin-plated electrolytic copper lead wire.

Series FGE

Fusible Resistors.

- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Color code per MIL & EIA standards.
- Special tin-plated electrolytic copper lead wire.
- Typical fusing condition - (a) Standard Type: Fuses within 10 sec. at 5W ~ 6.25W (b) Power Types: Fuses within 60 sec. at 8W ~ 24W.

Series FGE26C

Fusible Resistors 1/4W.

- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Color code per MIL & EIA standards.
- Special tin-plated electrolytic copper lead wire.

Series MVR

Medium Voltage Resistors.

- Higher working voltage with improved reliability.
- Proprietary conductive film.
- Especially suitable for SMPS & lighting devices.
- Low-cost alternative to metal-glazed resistors.
- Maximum working voltage: 550V DC ~ 7KV DC.
- Typical temperature coefficient: 100ppm ~ 800ppm.

Series HVR

High Voltage Resistors.

- Special conductive film withstands high voltage.
- Maximum working voltage far over that of general-purpose resistors.
- Suitable for applications such as TV's, high voltage power supply, and high voltage detection.
- Entire series is VDE0860 (EN60065) approved under license number 40011593.
- Maximum working voltage: 1.6KV DC ~ 12KV DC.
- Typical temperature coefficient: 200ppm ~ 800ppm.

Series HVR

High Voltage Resistors (High Power).

- Special conductive film withstands voltage far over the maximum working voltage of general-purpose resistors.
- Suitable for applications such as TV's, high voltage power supply, and high voltage detection.
- Maximum working voltage: 35KV DC.
- Typical temperature coefficient: 800ppm.

Series MSD

Pulse Safety Resistors.

- Special composite film on high grade ceramic substrate.
- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Excellent anti-surge capability. Typical 10µs pulse load: 110W ~ 6200W.
- Absorbs pulse from city power line, direct crossing or inductive coupling and protects electric equipment or parts from accidental shock.
- Low-cost alternative to wire-wound resistors.

Series PPR

Pulse Protective Resistors.

- Application: high-frequency, sharp-impulse circuits.
- Protects active components in missile detonators, triac switching circuits, etc.
- Offers better performance than carbon composition resistor.
- No "sintering effect" caused by high surge that greatly decreases resistance value.
- Conformal multi-layer non-flammable coating.
- Maximum permissible surge voltage: 7KV ~ 20KV.
- Typical 10µs maximum pulse load: 110W ~ 1600W.

Series SSR

Surge Safety Resistors.

- Designed to replace carbon or ceramic composition resistor.
- Absorbs harmful surge energy, so to prevent hazard of fire and circuit damage caused by surge energy with a flame proof coating.
- High-surge applications: fuel ignition systems, power charging/discharging circuits, electrocardiograph cables, etc.
- Maximum permissible surge voltage: 10KV ~ 35KV.
- Typical 10µs maximum pulse load: 1400W ~ 25000W.
- Conforms to ANSI/AAMI norm EC53: 1995/(R)2008 5.5.3.

Series WA

Wirewound Resistors.

- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Color code per MIL & EIA standards.
- Special tin-plated electrolytic copper lead wire.

Series SWA

Anti-Surge Wirewound Resistors.

- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- SWA series can be adopted for high surge applications such as high rush current protection for power capacitor, motor start-up protection, car & motorcycle engine ignition, etc. to absorb harmful surge energy and prevent hazard of circuit damage caused by surge impact.
- Enhanced weld spot is reliable against surge impact.
- Special tin-plated electrolytic copper lead wire.
- Maximum permissible surge voltage: 12KV.

Anti-Surge Wirewound Fast-Fuse Resistors.

- Worldwide patent pending
- Enhanced welded spot is reliable against surge
- Fast-acting fuse device for high-power applications
- Advanced combined anti- surge & fast-fuse structure
- Flameproof multi-layer coating equivalent to UL 94 V-0
- Flameproof feature equivalent to overload test UL 1412

Series SWAT

Power Sink Resistors.

- Designed to replace cement resistors.
- Auto insertion feasible.
- Enhanced conductive film absorbs pulse noise.
- Superior-grade ceramic core dissipates heat efficiently.
- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Maximum permissible surge voltage: 20KV.
- Typical 10µs maximum pulse load: 10000W.

Series PSR

Short Circuit Protection Resistors.

- Advanced multi-functional design.
- Cut-off on overload or accidental short circuit.
- Transient withstanding for power-line coupling.
- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- Possible alternative to wire-wound resistors.
- Maximum overload voltage: 600V ~ 700V.
- Fuses within 60 sec. at 12W ~ 30W.

Series SCP

Spark Gap Surge Absorber Resistors.

- Low-cost patented construction (EP 09000962.2).
- No light-dark effect.
- Low capacitance / short response time / fast ignition.
- Response time: ≤1ns.

Series SGS

Ignition Fixed Resistors.

- Special coating technique to ensure fast ignition.
- Color code per MIL & EIA standards.
- Special conductive film to fuse at high temperature.
- Auto cut-off after fusing/no sustaining fire hazard.
- Special tin-plated electrolytic copper lead wire for optimal ease of soldering and mounting.

Series IG

Composite Film-Type Ceramic Composition Resistors.

- Innovative and cost-effective C3 technology (NOTE 1).
- Conforms to ANSI/AAMI norm EC53:1995/(R)2008 5.5.3.
- Suitable replacement for ceramic composition resistors, which are required in most applications.
- Maximum permissible surge voltage: 15KV.
- Typical 10µs maximum pulse load: 200000W.

Series C3

Jumper Wire.

Series JW



MELF Resistors



Series CM

Carbon Film MELF Resistors.

- SMD enabled structure.
- Excellent solderability termination.

Series MM

Metal Film MELF Resistors.

- SMD enabled structure.
- Excellent solderability termination.
- Typical 10 μ s maximum pulse load: 32W ~ 70W.
- Typical temperature coefficient: 25ppm ~ 100ppm.

Series MM(V)

Metal Film MELF Resistors, Vehicle Grade.

- AEC-Q200 compliant.
- Excellent solderability termination.
- Typical 10 μ s maximum pulse load: 35W ~ 80W.
- Typical temperature coefficient: 25ppm ~ 100ppm.

Series MMP

Power Metal Film Resistors.

- SMD enabled structure.
- Excellent solderability termination.
- Typical 10 μ s maximum pulse load: 32W ~ 70W.
- Typical temperature coefficient: 5ppm ~ 50ppm.

Series MMP(V)

Metal Film MELF Precision Resistors, Vehicle Grade.

- AEC-Q200 Compliant.
- Excellent solderability termination.
- Typical 10 μ s maximum pulse load: 35W ~ 80W.
- Typical temperature coefficient: 15ppm ~ 50ppm.

Series SM

Stabilized Metal Film MELF Resistors.

- Conformal coating against humidity.
- Excellent solderability termination.
- Typical 10 μ s maximum pulse load: 32W ~ 70W.
- Typical temperature coefficient: 25ppm ~ 100ppm.

Series SFP

Stabilized Film Power MELF Resistors.

- Low temperature coefficient and tolerances.
- Excellent stability.
- Superior power handling.
- Typical temperature coefficient: 50ppm ~ 200ppm.

Series SFP(V)

Stabilized Film Power MELF Resistors, Vehicle Grade.

- AEC-Q200 Complicant.
- Low temperature coefficient and terance.
- Superior power handling.
- Typical temperature coefficient: 25ppm - 50ppm.

Series CSM

Current Sense MELF Resistors.

- High power handling with superior reliability and stability.
- Conformal multi-layer coating against humidity.
- SMD enabled structure with excellent solderability.
- HeatSinker™ technology for better heat dissipation.
- Typical temperature coefficient: 50ppm ~ 600ppm.

Series EFP

Enhanced Film Power MELF Resistors.

- High power handling.
- Superior reliability and stability.
- SMD enabled structure with excellent solderability.
- Typical temperature coefficient: 200ppm ~ 800ppm.

Series FM

Fusible MELF Resistors.

- SMD enabled structure.
- Excellent solderability termination.
- Fuses within 10 sec. at 9.8W ~ 10.5W.

Series MVM

Medium Voltage MELF Resistors.

- SMD enabled structure.
- Anti-surge feature available.
- Pure tin-plated termination for excellent solderability.
- Handles much higher working voltage than general purpose resistors.
- Maximum working voltage: 750V DC - 1,000V DC.

Series HVM

High Voltage MELF Resistors.

- Handles much higher working voltage than general purpose resistors.
- Pure tin-plated termination for excellent solderability.
- SMD enabled structure.
- Anti-surge feature available.
- Maximum working voltage: 600V DC ~ 8400V DC.

Series HFT

High Frequency Terminator MELF Resistors.

- SMD enabled structure.
- Superior frequency response.
- Excellent solderability termination.

Series MM(P)

Metal Film MELF Resistors, Pulse Withstanding.

- SMD enabled structure.
- Excellent solderability termination.
- Enhanced pulse withstanding capability.
- Typical temperature coefficient: 50ppm, 100ppm.
- Typical 1.2/50µs maximum pulse voltage: 4000V.

Series SRM

Surge Resistant MELF Resistors.

- IEC60065 & UL1676 Compliant.
- Miniaturized MELF design handles high power.
- Special conductive film enhances anti-surge capability.
- Absorbs harmful surge which damages precious devices or components.
- SMD-enabled alternative to carbon composition resistors.
- Maximum permissible surge voltage: 2KV ~ 10KV.
- Typical 10µs maximum pulse load: 70W ~ 8000W.
- Approved to the safety requirement of VDE0860 under license number 40043961

Series SWM

Anti-Surge Wirewound MELF Resistors.

- SMD enabled structure.
- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- SWM series can be adopted for high surge applications such as high rush current protection for power capacitor, motor start-up protection, car & motorcycle engine ignition, etc. to absorb harmful surge energy and prevent hazard of circuit damage caused by surge impact.
- Enhanced weld spot is reliable against surge impact.
- Maximum permissible surge voltage: 11KV.

Series SWMT

Anti-Surge Wirewound Fast-Fuse MELF Resistors.

- Worldwide patent pending.
- Enhanced welded spot is reliable against surge.
- Fast-acting fuse device for high-power applications.
- Advanced combined anti-surge & fast-fuse structure.
- Flameproof multi-layer coating equivalent to UL 94 V-0.
- Flameproof feature equivalent to overload test UL 1412.
- SMD enabled structure.

Series ESM

ESD Surge Absorber MELF Resistors.

- Protects the circuit by sparking over the porous layer when surge exceeds the spark-over voltage
- Patented construction with reduced costs
- High insulation resistance, low capacitance, and fast response time

Series SL

Slug MELF Resistors.

- Specially treated metal caps withstand abrasions, impacts, and corrosions, so as to reduce contact resistance during operation. conductive film is enhanced to withstand abrasions, impacts, and corrosions as well. Suitable for clip-in (embedded) application like switches with neon indicators, neon/LED modules, LED display array, etc.
- Protective coating is optional.

Series SLC

Slug Center Coated MELF Resistors.

- Specially treated metal caps withstand abrasions, impacts, and corrosions, so as to reduce contact resistance during operation. Conductive film is enhanced to withstand abrasions, impacts, and corrosions as well. Suitable for clip-in (embedded) application like switches with neon indicators, neon/LED modules, LED display array, etc.

Series C3M100**Composite Film – Type Ceramic Composition MELF Resistors.**

- SMD-enabled structure.
- Suitable replacement for ceramic composition resistors, which are requirements in most applications.
- Maximum permissible surge voltage: 15KV.
- Typical 10 μ s maximum pulse load: 40000W.

Series ISC**Ignition Noise Suppression MELF Resistors, Type Ceramic Composition.**

- Dedicatedly designed for high-voltage spark ignition systems
- Proprietary ceramic composite withstands high-voltage surge impacts with long-term stability.
- One of few sources in the world capable of manufacturing such type of Resistor.

Series ISW**Ignition Noise Suppression MELF Resistors, Wirewound Type.**

- Dedicatedly designed for high-voltage spark ignition systems.
- Enhanced weld spot is reliable against surge with long-term stability.

Series ZMM**ZERO Ohm Metal Film MELF Resistors.**

- Conformal multi-layer coating against humidity.
- Very low resistance.
- Stable metal film construction.
- Special tin-plated deoxygenized copper wire for resistance stabilization during operation.



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