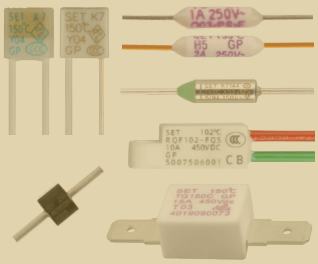
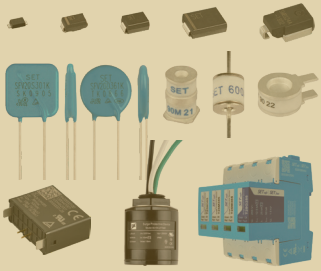
PROVIDING TOTAL SOLUTION FOR HIGH STANDARD SAFETY CIRCUIT PROTECTION

Active Protection

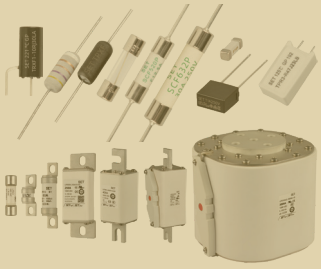
Over Temperature Protection



Over Voltage Protection



Over Current Protection



2025
Product Category

40+
The products sell well in more than 40 countries.

What Can We Do For You ① ②

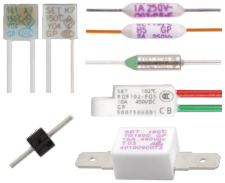
www.SETsafe.com, www.SETfuse.com

① Design, Manufacture and Sell Circuit Control and Safety Protection Components

Over Temperature Protection, Over Voltage Protection, Over Current Protection, Active Protection circuit control and safety protection components by 2025.

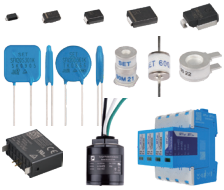
https://setsafe.com/products.html

Over Temperature Protection



- Thermal-Link - Alloy Type
- Direct Current Thermal-Link - Alloy Type
- Thermal-Link - Organic Type
- Thermal Turn On - Organic Type

Over Voltage Protection

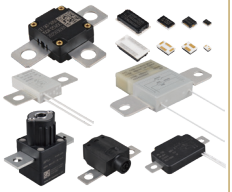


- Transient Voltage Suppression Diodes
- Thermal Protected Transient Suppression Diode
- ESD TVS Diode Arrays
- Thyristor Surge Suppressor
- Gas Discharge Tube
- Thermally Protected Gas Discharge Tube
- Metal Oxide Varistor & MOV Disk
- Thermal Fuse & MOV
- Surge Protective Devices Module
- Surge Protective Device

Over Current Protection

- Cartridge Fuse-links
- Sub-miniature Fuse-links
- Surface Mount Fuse-links
- Fusible Wire Wound Resistor
- Thermal-Link & Fusing Resistor
- Thermally Protected Resistor
- Low Voltage Fuses

Active Protection

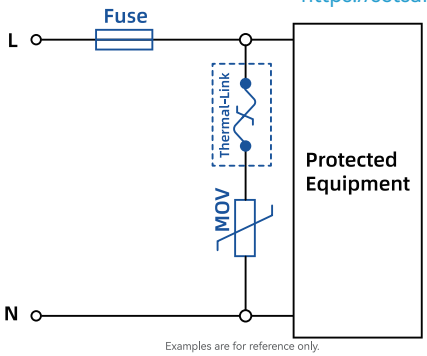


- Heat CutOff
- idea Thermal CutOff
- Pyro CutOff
- Mechanical CutOff

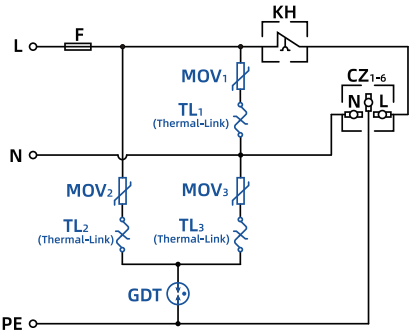
② Provide Circuit Safety Solutions

Typical applications of SETsafe | SETfuse products such as Current Fuse, Thermal-Link, Metal Oxide Varistor (MOV) and Gas Discharge Tube (GDT) circuits (for reference only).

https://setsafe.com/markets.html



Examples are for reference only.



Examples are for reference only.

Different electrical equipments have different circuit protection solutions. If you need further information, please contact us.

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About SETsafe | SETfuse

www.SETsafe.com, www.SETfuse.com

MISSION

① Design, Manufacture and Sell Circuit Control and Safety Protection Components.
② Provide Circuit Safety Solutions.

Key Markets:
New Energy, Energy Storage, Telecommunications, Surge Protector, Power, Lighting, Home Appliances, Mobile Devices, Medical, etc.

SETsafe | SETfuse was established in 2000 in Xiamen, China. We have a presence in more than 40 countries. Some of the world's 500 fortune companies are our valuable customers. We have pioneered, innovated and developed several products exclusively. Products are complied with CB, CCC, CQC, TLC, UL, cUL, ETL, TÜV, CE, VDE, DEKRA, KEMA-KEUR, KC, PSE, IATF 16949, ISO 9001, ISO 14001, ISO 45001, ISO 50001, GB/T 29490 certificates, meeting RoHS and REACH requirements. We are in one of the core participating teams for revising and setting several national & international standards in the field of Circuit Protection.

Learn more: https://setsafe.com/About-SETsafe-and-SETfuse/About-Us.html

SETsafe | SETfuse Industrial Park

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Make Global Electricity Safe
SETsafe | SETfuse is Your First Choice

Establishment and Customer

https://setsafe.com/About-SETsafe-and-SETfuse/About-Us.html

2000

Establishment in 2000 year,
it focuses on the design, manufacture and sell of circuit control and safety protection components, and provides circuit safety solutions.

40+

The products sell well in more than 40 countries.

Efficient Intelligent Manufacturing

Products are manufactured fully automatically with automated processes and data is traceable.

500

A brand chosen by fortune 500 companies.

Global Business Mode

Direct Sales

Distribution

Distributor and Agency.

REP

- We can jointly develop customers, and customers can specify the method of cooperation.
- More details, please contact SETsafe | SETfuse: sales@SETfuse.com

Approved Management System

https://setsafe.com/Management-System.html

IATF 16949

Certification by TÜV Rheinland, Germany.

ISO 9001

Certification by TÜV Rheinland, Germany.

ISO 14001

Environmental Management System.

ISO 45001

Occupational Health and Safety Management System.

ISO 50001

Energy Management System.

GB/T 29490

Intellectual Property System.

The actual certificate prevails.

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Make Global Electricity Use Safe
SETsafe | SETfuse is Your First Choice

Testing Center (Laboratory)

https://setsafe.com/Testing-Center-Laboratory.html

ISO

The laboratory is built in accordance with ISO/IEC 17025.

3000+

The laboratory area is over 3,000 square meters.

300+

More than 300 sets of specialized testing equipment.

1000+

More than 1000 testing items.

Standards

Has the testing capabilities of IEC international standards, ITU standards, European standards, UL standards, and national and industry standards.

WTDP

The laboratory has obtained the qualification of UL under Witnessed Test Data Program (WTDP) and the accreditation qualification by TÜV Rheinland SETsafe | SETfuse have nine types of products that can be witnessed tested.

CTF

CUSTOMERS TESTING FACILITIES (CTF)

CTF laboratory qualification approved by TÜV Rheinland.
CTF laboratory standards: IEC61643-11, IEC61643-31.
Products: SPD for Low-voltage Power Systems,
SPD for Low-voltage DC Systems (PV, ESS).

Function and Performance Testing Laboratory

It has more than ten functional and performance testing laboratories, including but not limited to lightning surge laboratory, electrical testing laboratory, temperature testing laboratory, material testing laboratory, environmental testing laboratory, thermal analysis laboratory, durability testing laboratory, mechanical testing laboratory, product application testing laboratory, etc.

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Make Global Electricity Use Safe
SETsafe | SETfuse is Your First Choice

Quality First, Select with Confidence

APQP
Advanced Product Quality Planning.

FMEA
Failure Mode and Effects Analysis.

MSA
Measurement Systems Analysis.

SPC
Statistical Process Control.

PPAP
Production Part Approval Process.

Suppliers
Choose High-quality Suppliers.

Design
Quality Assurance for Product Design.

IQC
Quality Assurance for Incoming Material Inspection.

IPQC
Quality Assurance for In-process Control.

FQC
Quality Assurance for Finished Product Inspection.

OQC
Quality Assurance for Shipment Inspection.

CCD
Online Inspection, Appearance, and Size.

Reliability
Performance Testing, Reliability Testing.

Life Testing
Life Testing and Calculation.

Data Tracking
It's able to trace product Production Time, Raw Materials, Equipment and so on.

Calibration
Calibrate Related Testing Equipment and Instruments.

Safety Certification
The Product has Corresponding Safety Certification.

Quality Tools, Management
QCC, Six Sigma, TQM

- From development and design, supplier selection to production and manufacturing, SETsafe | SETfuse products follow the principle of the most competitive quality, including but not limited to the use of the above quality tools and test items, which are subject to the actual situation of each product.
- # Each product is different, please refer to the actual situation.

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Make Global Electricity Use Safe
SETsafe I SETfuse is Your First Choice

Digitalization and Greening

Digital Management Enterprise

Since 2006, we have combined system requirements with management practices to create a digital management system and digital team with SETsafe I SETfuse characteristics. It fully covers the entire product life cycle and daily collaborative office, providing strong support for business decision-making and quality management. We have obtained the third-level digital level certification and the title of the National Excellent Digital Intelligence Team.

Customer First, Attentive Service

Worry-Free Before, During and After Sales, Buy and Use With Confidence

Optional Logistics, Free Technical Consultation, FAE, Quality Assurance.

Reduce Pollution and Protect the Earth

HSF
Non harmful substances.

RoHS
Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

REACH
Regulations concerning the Registration, Evaluation, Authorization and Restriction of Chemicals.

Halogen Free

Non Red Phosphorus

PFAS
Per- and polyfluoroalkyl substances.

SETsafe I SETfuse's products comply with relevant environmental regulations and the limits of hazardous substances. Each product is different, please refer to the actual situation.

Carbon Peak and Carbon Neutrality

700
Reduce carbon dioxide emissions by about 700 tons per year.

800
Total solar installed capacity is 800 KWP.

100
The average solar power generation is about 100 kWh / year.

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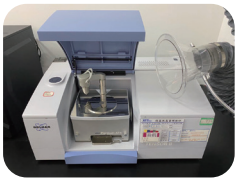
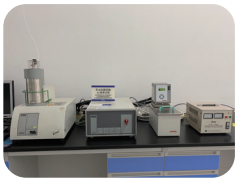
Some Test Equipment

The testing focus of the laboratory covers material analysis class, temperature test class, environmental test class, electrical test class, lightning current test class, with more than 1000 testing items.

The laboratory has the testing capabilities of IEC international standards, EN European standards, UL standards, and national and industry standards.

Test items include Marking test, Tensile test, Thrust test, Creepage distances and clearances, Dielectric strength, Insulation resistance, Holding temperature, Functioning temperature, Maximum temperature limit, Ageing, Varistor voltage, Leakage current, Voltage proof.....

Witnessed Test Data Program (WTDP)

https://setsafe.com/Testing-Center-Laboratory/Witnessed-Test-Data-Program-WTDP.html

SETsafe | SETfuse Obtained Permanent Authorization:

- UL 60691,CSA C22.2 NO.60691:19.
- UL 1449, EDITION 5, ISSUE DATE 01/08/2021 (Surge Protective Devices).
- UL 1434, EDTION 1, REVISION DATE 05/18/2020 (THERMISTOR-TYPE DEVICES).
- CSA Component Acceptance Service, T.I.L, Class No.9073-31, ISSUE DATE 07/09/1991.
- CSA C22.2 No.269.5, EDITION 2, ISSUE, DATE 09/2017 (Surge Protective Devices – Type 5 - Components).
- CSA C22.2 No.269.4, EDITION 2, ISSUE, DATE 03/2017 (Surge Protective Devices – Type 4 - Component Assemblies).

SETsafe | SETfuse Obtained Permanent Authorization:

- IEC 60127.
- IEC 60539-1:2016.
- IEC 60691:2015+A1.
- EN 60691:2016+A1.
- IEC 61051-1:2018.
- EN IEC 61051-1:2018.
- IEC 61051-2:1991+A1.
- IEC 61051-2-2:1991.
- IEC 62368-1:2020 Annex G.8.
- EN IEC 62368-1:2020 Annex G.8.
- EN 50539-11:2013+A1.
- IEC 61643-11:2011.
- EN 61643-11:2012+A11.
- IEC 61643-21:2012.
- EN 61643-21:2001+A1+A2.
- IEC 61643-31:2018.
- EN 61643-31:2018.
- IEC61643-311.

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Active Protection

Learn more:
https://setsafe.com/Products/Active-Protection.html

SETsafe | SETfuse Products

1. Heat CutOff (HCO)
2. idea Thermal CutOff (iTCO)
3. Pyro CutOff (PCO)
4. Mechanical CutOff (MCO)

Glossary

I_r	Rated Current
U_r	Rated Voltage
T_f	Rated Functioning Temp.

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Execution System's Command to Disconnecct Fault Circuit

Disconnect the faulty circuit according to system command.

Applications

Electric Tool, Storage Battery, Portable Power Supply, Electric Motorcycle, Electric Bicycle, Household Energy Storage, etc.

SETsafe | SETfuse Solution

Used for secondary protection of lithium battery protection circuit to reduce the risk of fire or explosion.

1

Heat CutOff (HCO)

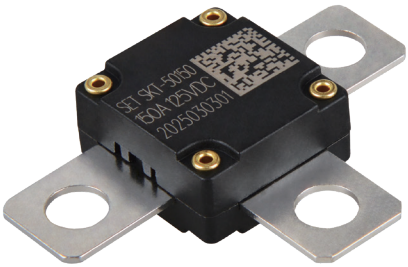
I_r : 5 ~ 150 A

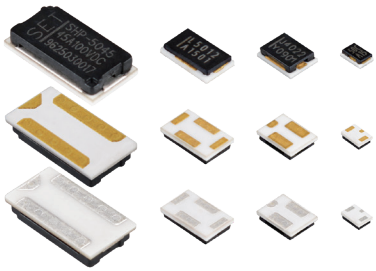
U_r : 36 / 48 / 80 / 100 / 125 VDC

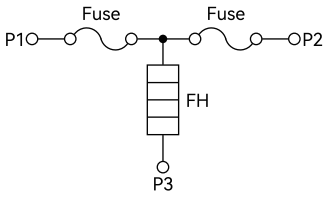
Range of Operating Voltage: 2.2 ~ 125 VDC

RoHS REACH

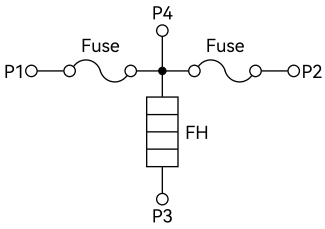
Learn more:
https://setsafe.com/Products/Active-Protection/Heat-CutOff-HCO.html







SKT / SHP / SHJ / SHG series



SHL series

Product Schematic

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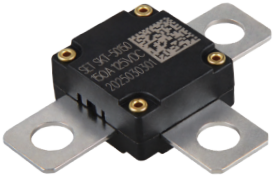
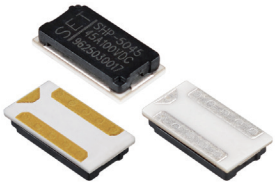


SKT series

I_r : 120 / 150 A
U_r : 125 VDC
Range of Operating Voltage: 8.2 ~ 125.0 VDC
Dimension: L40.0 x W28.6 x H9.0 mm
Applications: Household Energy Storage,
Electric Beach Buggy,
Electric Lawn Mower

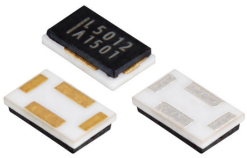
Learn more
https://setsafe.com/Products/Active-Protection/Heat-Cutoff-HCO/SKT-series.html



SHP series

I_r : 30 / 45 / 60 / 75 A
U_r : 100 VDC
Range of Operating Voltage: 3.0 ~ 106.0 VDC
Dimension: L9.5 x W5.0 x H1.8 mm
Applications: Electric Tool, Storage Battery,
Portable Power Supply, Electric Motorcycle,
Electric Bicycle, Household Energy Storage

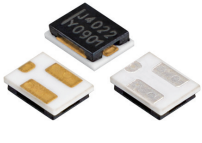
Learn more
https://setsafe.com/Products/Active-Protection/Heat-Cutoff-HCO/SHP-series.html



SHL series

I_r : 12 / 15 / 30 A
U_r : 80 VDC
Range of Operating Voltage: 3.7 ~ 65.8 VDC
Dimension: L5.4 x W3.2 x H1.05 mm
Applications: Electric Tool, Storage Battery,
Portable Power Supply, Electric Motorcycle,
Electric Bicycle, Household Energy Storage

Learn more
https://setsafe.com/Products/Active-Protection/Heat-Cutoff-HCO/SHL-series.html



SHJ series

I_r : 12 / 15 / 22 A
U_r : 48 / 80 VDC
Range of Operating Voltage: 3.0 ~ 62.9 VDC
Dimension: L4.0 x W3.0 x H0.95 mm
Applications: Electric Tool, Storage Battery,
Portable Power Supply, Electric Motorcycle,
Electric Bicycle, Household Energy Storage

Learn more
https://setsafe.com/Products/Active-Protection/Heat-Cutoff-HCO/SHJ-series.html

SHG series

I_r : 5 / 12 A
U_r : 36 VDC
Range of Operating Voltage: 2.2 ~ 45 VDC
Dimension: L2.7 x W1.8 x H0.85 mm
Applications: Electric Tool, Storage Battery,
Portable Power Supply, Electric Motorcycle,
Electric Bicycle, Household Energy Storage

Learn more
https://setsafe.com/Products/Active-Protection/Heat-Cutoff-HCO/SHG-series.html

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Execution System's Command to Disconnecct Fault Circuit

Disconnect the faulty circuit according to system command.

Applications

Battery Control Unit Failure Protection, High-Power Solid State Relay, PTC Heater, etc.

SETsafe | SETfuse Solution

The two electrodes are connected with the thermal element as electrical connections of passive temperature-sensing. At the same time, a Feed Heater (FH) with independent over-temperature protection is built-in to heat up the thermal element, providing sufficient heat to the fuse and cut off the electrical connection points.

2

idea Thermal CutOff (iTCO)

MC I_r : 20 ~ 270 A

MC U_r : 80 ~ 400 VDC

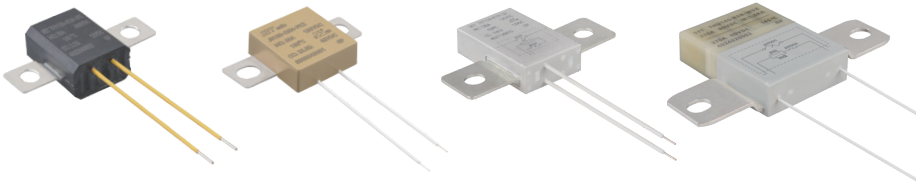
CC U_r : 12 ~ 96 VDC

RoHS REACH

Learn more:
https://setsafe.com/Products/Active-Protection/idea-Thermal-CutOff-iTCO.html

Rated Current

A	B	C	D
≤ 20 A	21 ~ 100 A	101 ~ 150 A	200 ~ 270 A



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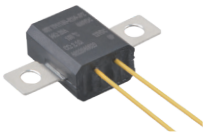
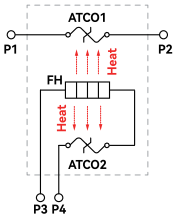
idea Thermal CutOff (iTCO)

A

Rated Current: ≤ 20 A





TPHxxx-R series

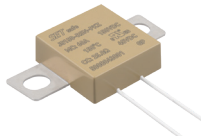
MC I_r : 20 A
MC U_r : 400 VDC
CC U_r : 12 / 24 / 36 / 48 VDC
T_f : 150 ℃
Applications: High Power Solid State Relays, Battery Control Unit Fail Protection, PTC Heaters

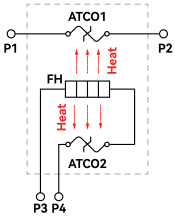
Learn more:
https://setsafe.com/Products/Active-Protection/idea-Thermal-CutOff-iTCO/TPHxxx-R-series.html

idea Thermal CutOff (iTCO)

B

Rated Current: 21 ~ 100 A





JSxxx-R series

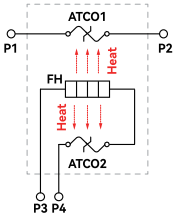
MC I_r : 60 A MC I_r : 100 A
MC U_r : 150 VDC MC U_r : 100 VDC
CC U_r : 12 / 24 / 36 / 48 / 72 VDC
T_f : 150 ℃
Applications: High Power Solid State Relays, Battery Control Unit Fail Protection

Learn more:
https://setsafe.com/Products/Active-Protection/idea-Thermal-CutOff-iTCO/JSxxx-R-series.html

idea Thermal CutOff (iTCO)

C

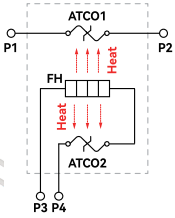
Rated Current: 101 ~ 150 A



TKSxxx-R series

MC I_r : 120 A
MC U_r : 125 VDC
CC U_r : 12 / 24 / 36 / 48 / 72 / 96 VDC
T_f : 150 ℃
Applications: High Power Solid State Relays, Battery Control Unit Fail Protection

Learn more:
https://setsafe.com/Products/Active-Protection/idea-Thermal-CutOff-iTCO/TKSxxx-R-series.html



TKTxxx-R series

MC I_r : 150 A
MC U_r : 125 VDC
CC U_r : 12 / 24 / 36 / 48 / 60 / 72 / 96 VDC
T_f : 150 ℃
Applications: High Power Solid State Relays, Battery Control Unit Fail Protection

Learn more:
https://setsafe.com/Products/Active-Protection/idea-Thermal-CutOff-iTCO/TKTxxx-R-series.html

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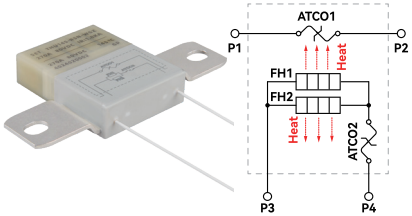
idea Thermal CutOff (iTCO)

D

Rated Current: 200 ~ 270 A



THUxxx-R series

MC I_r : 200 / 270 A

MC U_r : 80 VDC

CC U_r : 12 / 24 / 36 / 48 / 72 VDC

T_f : 145 ℃

Applications: High Power Solid State Relays,
Battery Control Unit Fail Protection

Learn more:
https://setsafe.com/Products/Active-Protection/idea-Thermal-CutOff-iTCO/THUxxx-R-series.html

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Active Protection Against Circuit Faults

Quickly cut off power when collision, short circuit, overcurrent or other safety faults occur.

Applications

Energy Storage, Electric Vehicles, Non-road Electric Vehicles, etc.

SETsafe | SETfuse Solution

Can receive external trigger signal, trigger gas generator action, push the piston movement, quickly cut off the electrical connection point, and cut off the circuit connection.

3

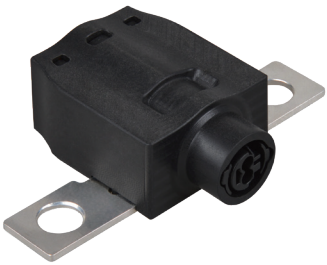
Pyro CutOff (PCO)

I_r : 250 / 400 A

U_r : 150 / 1000 VDC

Generator Trigger Current: 1.75 A / 0.5 ms
or 1.20 A / 2.0 ms

Learn more:
https://setsafe.com/Products/Active-Protection/Pyro-CutOff-PCO.html



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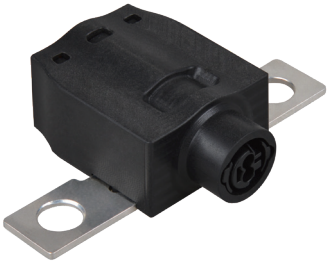


PHW series

Current Carrying Capacity: 250 A
Breaking Capacity: 150 V / 2.3 kA / 7 μH
Resistance (Ambient): Before Breaking ≤ 0.2 mΩ
After Breaking ≥ 100 MΩ / 1150 V
Generator Resistance: ≥ 1.7 Ω / ≤ 2.5 Ω
Generator Trigger Current: 1.75 A / 0.5 ms or
1.20 A / 2.0 ms
Generator Safety Current: ≤ 0.4 A
Generator Insulation Resistance 1 MΩ（500 VDC / 2 s）
Applications: Energy Storage, Electric Vehicle,
Non-road Electric Vehicles

Learn more:
https://setsafe.com/Products/Active-Protection/Pyro-CutOff-PCO/PHW-series.html

PWX series

Current Carrying Capacity: 400 A
Breaking Capacity: 1000 V / 16 kA / 20 μH
Resistance (Ambient): Before Breaking ≤ 0.5 mΩ
After Breaking ≥ 100 MΩ / 1500 V
Generator Resistance: ≥ 1.7 Ω / ≤ 2.5 Ω
Generator Trigger Current: 1.75 A / 0.5 ms or
1.20 A / 2.0 ms
Generator Safety Current: ≤ 0.4 A
Generator Insulation Resistance: 50 MΩ（500 VDC / 2 s）
Applications: Energy Storage, Electric Vehicle,
Non-road Electric Vehicles

Learn more:
https://setsafe.com/Products/Active-Protection/Pyro-CutOff-PCO/PWX-series.html

Active Protection Against Circuit Faults

Meet the secondary protection requirements of UL1973, IEC62619 lithium battery pack.

Applications

Home Energy Storage, Non-road Electric Vehicles,
EV Thermal Managemen System, etc.

SETsafe | SETfuse Solution

Built-in heater that triggers a mechanical cutoff at the electrical connection point to cut off the circuit connection.

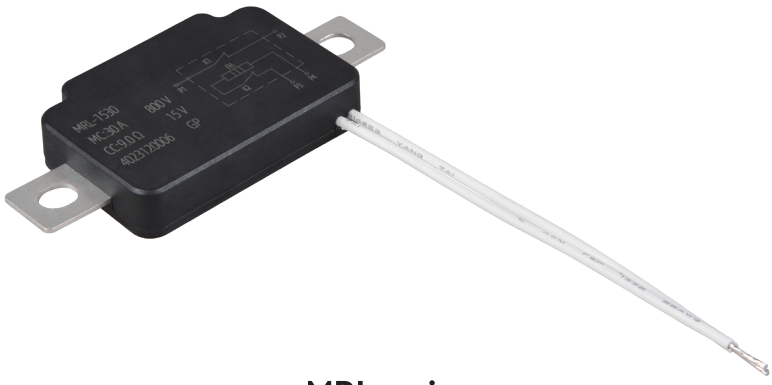
4

Mechanical CutOff (MCO)

MC I_r : 30 A 50 A
MC U_r : 800 VDC 500 VDC
CC U_r : 15 VDC

RoHS REACH

Learn more:
https://setsafe.com/Products/Active-Protection/Mechanical-CutOff-MCO.html



MRL series

Products Links

Over Temperature Protection
https://setsafe.com/Products/Over-Temperature-Protection.html

Over Voltage Protection
https://setsafe.com/Products/Over-Voltage-Protection.html

Over Current Protection
https://setsafe.com/Products/Over-Current-Protection.html

Active Protection
https://setsafe.com/Products/Active-Protection.html

Products Datasheet Download Link

https://setsafe.com/Support/Datasheet-Download.html

SET safe | SET fuse

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