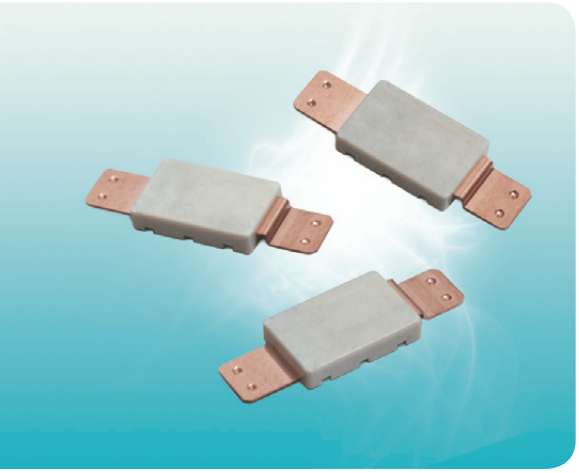
Product Overview

Metal Hybrid PPTC Devices with Thermal Activation (MHP-TA Series)

Resettable overtemperature protection for Lithium Polymer (LiP) and prismatic cells used in various portable electronic applications.

TE connectivity



KEY FEATURES

- $9V_{DC}$ rating
- Two levels of current carrying capacity:
  low current (approximately 6A
  hold current @25°C)
  high current (approximately 15A
  hold current @25°C)
- Multiple activation temperature ratings (72°C, 77°C, 82°C, 85°C, 90°C)
- Miniature size allows for compact battery pack designs

The rapidly expanding market for ultra-thin portable electronic devices such as media tablets and ultra-thin PCs has created demand for very thin, low-profile, light-weight and high-capacity Lithium Polymer (LiP) and prismatic cells.

A new MHP (Metal Hybrid PPTC) device, the MHP-TA, offers a $9V_{DC}$ rating and a higher current rating than typical battery strap devices to meet the battery safety requirements of higher-capacity LiP and prismatic batteries found in the latest tablet and ultra-thin computing products. Hybrid MHP technology connects a bimetal protector in parallel with a PPTC (polymeric positive temperature coefficient) device. The resulting MHP-TA device helps provide resettable overtemperature protection, while utilizing the PPTC device to act as a heater and to help keep the bimetal latched until the fault is removed.

APPLICATIONS

- Battery cell protection for high-capacity Lithium Polymer and prismatic cells used in:
  - Media tablets
  - Ultra-thin notebook PCs
  - E-readers

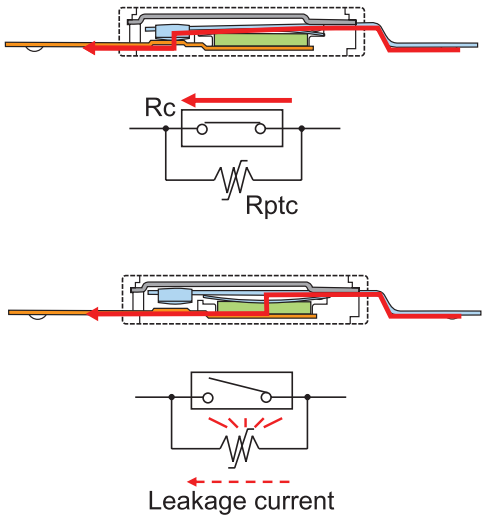
BENEFITS

- Capable of handling the higher voltages and battery discharge rates found in high-capacity LiP and prismatic cell applications.
- Provides resettable overtemperature protection in high-capacity LiP and prismatic cell applications.

DESIGN CONCEPT

In normal operation, current passes through the bimetal contact due to its low contact resistance. During an abnormal event, the device reacts to the rise in cell temperature causing the bimetal contact to open at the specified temperature and its contact resistance to increase.

At this point, the current shunts to the lower resistance PPTC which acts as a heater and helps keep the bimetal protector open and in a latched position until the fault is removed.



ELECTRICAL CHARACTERISTICS (TYPICAL)

Low Current Type:

Typical Electrical Rating (25°C)
Contact rating: DC9V/12A (6000 cycles)
Max. breaking current: DC5V/40A (100 cycles)

	Rating	Operation Temperature		Reset Temperature		Reference Resistance	
	[°C]	[°C]		[°C]		[mohms] 25°C	
Model Number	Nominal	Min	Max	Min	ΔT[1]	Typ	Max
MHP-TA6-9-72	72	67	77	≥40	≥7	10	15
MHP-TA6-9-77	77	72	82	≥40	≥10	10	15
MHP-TA6-9-82	82	77	87	≥40	≥10	10	15
MHP-TA6-9-85	85	80	90	≥40	≥10	10	15

[1] ΔT is the minimum temperature differential between the actual operation temperature of the device and the reset temperature.

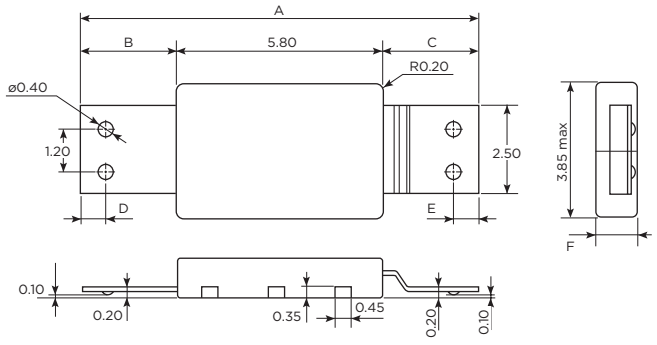
High Current Type:

Typical Electrical Rating (25°C)
Contact rating: DC9V/25A (6000 cycles)
Max. breaking current: DC5V/80A (100 cycles)

	Rating	Operation Temperature		Reset Temperature		Reference Resistance	
	[°C]	[°C]		[°C]		[mohms] 25°C	
Model Number	Nominal	Min	Max	Min	ΔT[1]	Typ	Max
MHP-TA15-9-72	72	67	77	≥40	≥7	2.5	5.0
MHP-TA15-9-77	77	72	82	≥40	≥10	2.5	5.0
MHP-TA15-9-82	82	77	87	≥40	≥10	2.5	5.0
MHP-TA15-9-85	85	80	90	≥40	≥10	2.5	5.0
MHP-TA15-9-90	90	85	95	≥40	≥10	2.5	5.0

[1] ΔT is the minimum temperature differential between the actual operation temperature of the device and the reset temperature.

DIMENSIONS IN MILLIMETERS



A		B		C		D		E		F
Min	Max	Min	Max	Typ	Max	Min	Max	Typ	Max	Typ
10.9	11.4	2.6	2.8	2.6	2.8	0.6	0.8	0.6	0.8	1.15

Unless otherwise specified, all tolerances are ±0.1mm.
• Corner tolerance should be less than 0.15mm.

MARKING INFORMATION

□□□□□□□ — Lot Identification
□□TE — Control Number, Company Logo
MHP-TA□-□-□□ — Part Name

AGENCY RECOGNITIONS

UL873

FOR MORE INFORMATION

te.com/MHP-Launch/

TE Circuit Protection
308 Constitution Drive
Menlo Park, CA USA 94025-1164
Tel : (800) 227-7040, (650) 361-6900
Fax : (650) 361-4600
Email : MHP@TE.COM

www.circuitprotection.com
www.circuitprotection.com.hk (Chinese)
www.te.com/japan/bu/circuitprotection/ (Japanese)

Brazil
Tel : 55-11-2103-6090
Fax : 55-11-2103-6216

UK / Eire / Benelux / Israel / South Africa / Nordic / Baltic / Others
Tel : 49-89-6089485
Fax : 49-89-6089394

Germany / Austria / Switzerland / Eastern Europe / Russia
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France/ Italy / Iberia / Greece / Turkey
Tel : 33-1-34208455
Fax : 33-1-34208479

Japan
Tel : 81-44-900-5110
Fax : 81-44-900-5140

Korea
Tel : 82-2-3415-4654
Fax : 82-2-3486-1786

Taiwan
Tel : 886-2-8768-2788 x 211
Fax : 886-2-8768-1277

China, Hong Kong
Tel : 852-2738-8181
Fax : 852-2735-1185

China, Beijing
Tel : 86-10-6569-3488 x 16526
Fax : 86-10-6569-3206

China, Shanghai
Tel : 86-21-6106-7379
Fax : 86-21-6485-3255

China, Shenzhen / Guangzhou
Tel : 86-755-2515-4797
Fax : 86-755-2598-0419

Australia / Philippines
Tel : 63-2-988-9465
Fax : 63-2-848-0205

Singapore / Indonesia Thailand / Malaysia / Vietnam
Tel : 60-4-8102112
Mobile : 60-194725628
Fax : 60-4-6433288

India
Tel : 91-80-4161-3745
Mobile : 91-99-0248-8886

Part numbers in this brochure are RoHS Compliant*, unless marked otherwise.
*as defined www.te.com/leadfree

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Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

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