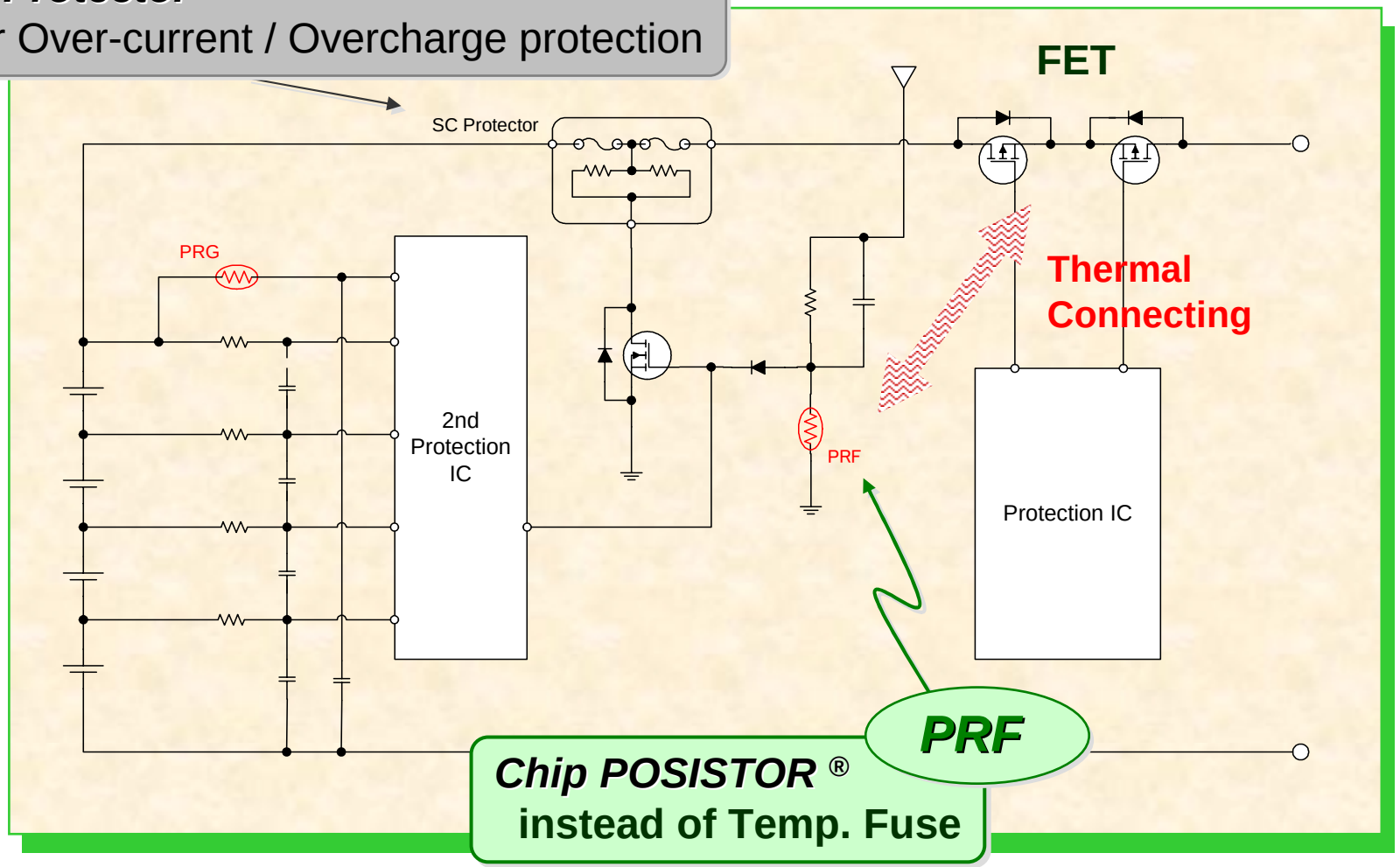
Overheat Sensing

Click!

SC Protector
for Over-current / Overcharge protection



Chip POSISTOR ®

PRF18 series for Overheat Sensing

(0603 size)

PRF

Part Number	Charac.	Resistance (at +25deg.C)	Sensing Temp. (at 4.7 kohm)	Maximum Voltage	Operating Temp.
PRF18AS471QB1RB *	AS	470 ohm +/-50%	145 +/- 5 deg.C	32 VDC	-20 to +160 deg.C
PRF18AR471QB1RB *	AR		135 +/- 5 deg.C		-20 to +150 deg.C
PRF18BA471QB1RB *	BA		125 +/- 5 deg.C		-20 to +140 deg.C
PRF18BB471QB1RB *	BB		115 +/- 5 deg.C		-20 to +130 deg.C
PRF18BC471QB1RB *	BC		105 +/- 5 deg.C		-20 to +120 deg.C
PRF18BD471QB1RB *	BD		95 +/- 5 deg.C		-20 to +110 deg.C
PRF18BE471QB1RB *	BE		85 +/- 5 deg.C		-20 to +100 deg.C
PRF18BF471QB1RB	BF		75 +/- 5 deg.C		-20 to + 90 deg.C
PRF18BG471QB1RB	BG		65 +/- 5 deg.C		-20 to + 80 deg.C
PRF18BB471RB1RB	BB	470 ohm +/-50%	115 +/- 3 deg.C	32 VDC	-20 to +130 deg.C
PRF18BC471RB1RB	BC		105 +/- 3 deg.C		-20 to +120 deg.C
PRF18BD471RB1RB	BD		95 +/- 3 deg.C		-20 to +110 deg.C
PRF18BE471RB1RB	BE		85 +/- 3 deg.C		-20 to +100 deg.C

New !

Low Current Consumption !

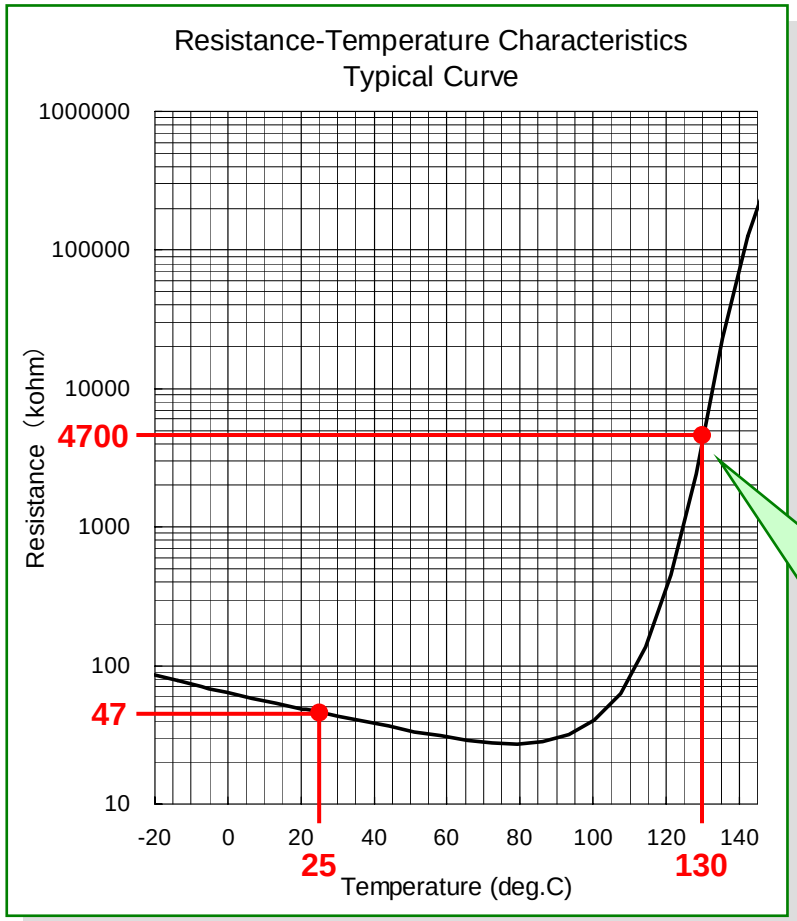
Part Number	Charac.	Resistance (at +25deg.C)	Sensing Temp. (at 4.7 Mohm)	Maximum Voltage	Operating Temp.
PRF18BA473QB1RB	BA	47 kohm +/-50%	130 +/- 5 deg.C	32 VDC	-20 to +140 deg.C

* : certified by UL (file: UL1434)

Chip POSISTOR ®

Resistance-Temperature Characteristics of PRF18BA473QB1RB

New !



 # Resistance at 25deg.C:
47 kohm +/-50%

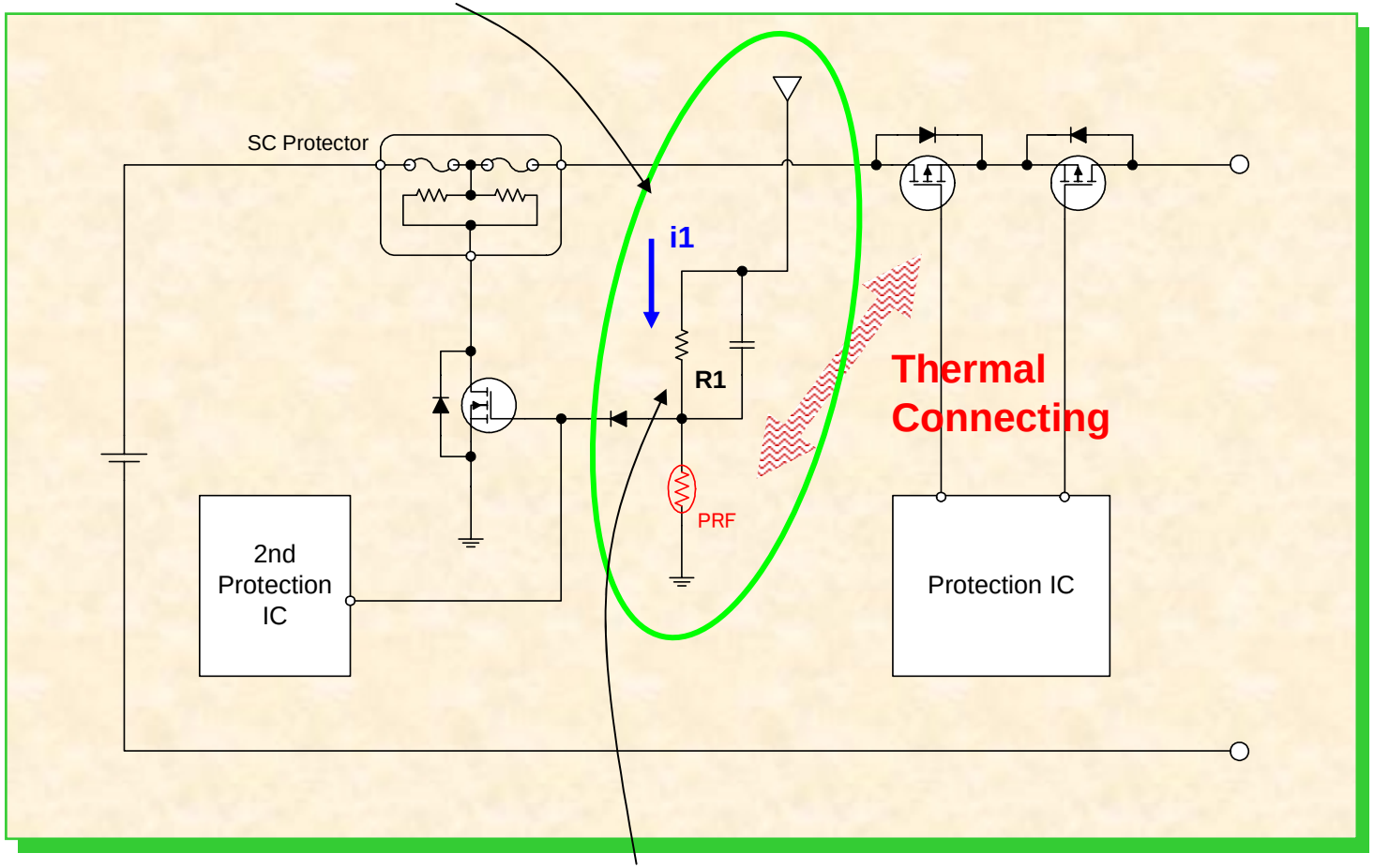
 # Sensing Temp. (at 4.7 Mohm):
130 +/- 5 deg.C

PRF

The Sensing Resistance at 130deg.C is 4.7Mohm, such high resistance provides low current consumption of the Overheat Sensing Circuit.

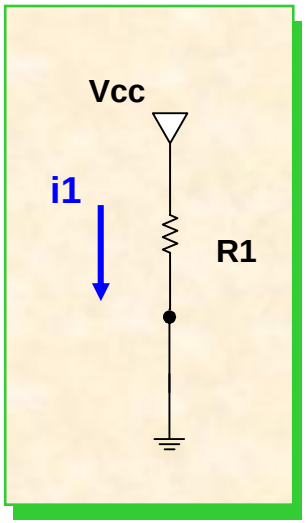
Why Low Current Consumption ?

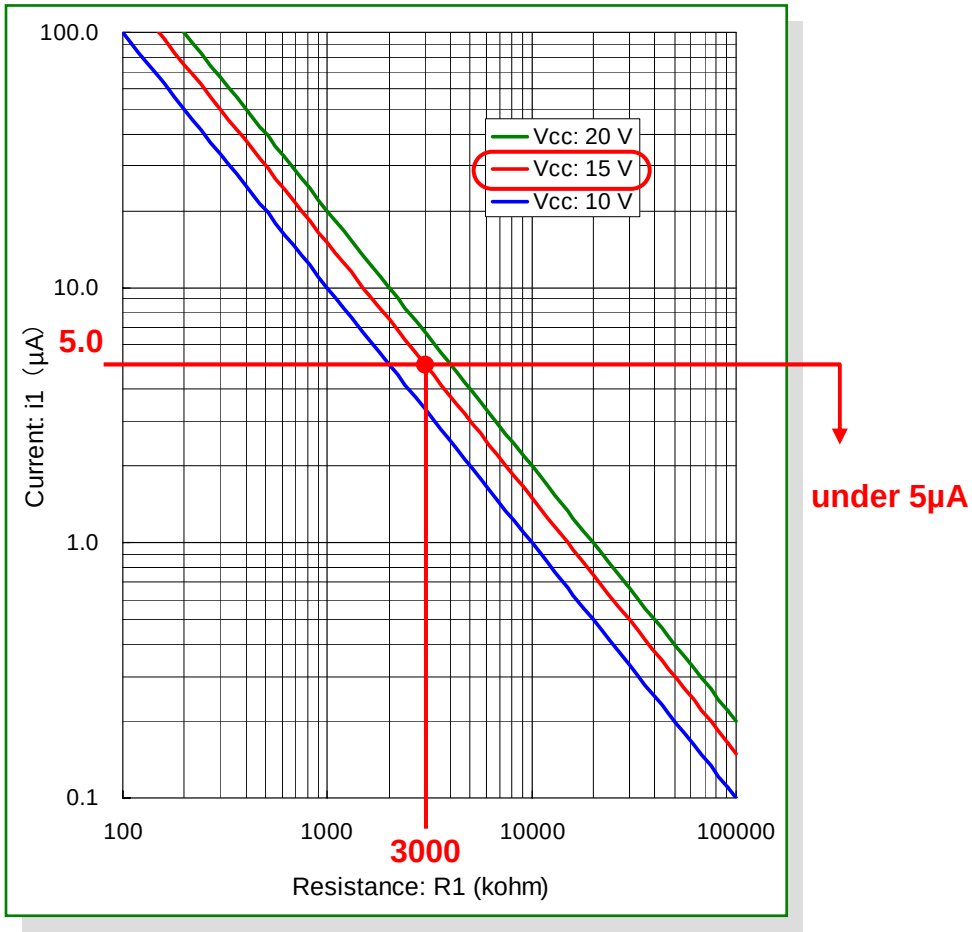
The Overheat Sensing Circuit is required to consume the current (i1), as low as possible.



Therefore, the Chip Resistor (R1) should have high resistance value.

How Much Resistance Needs ?



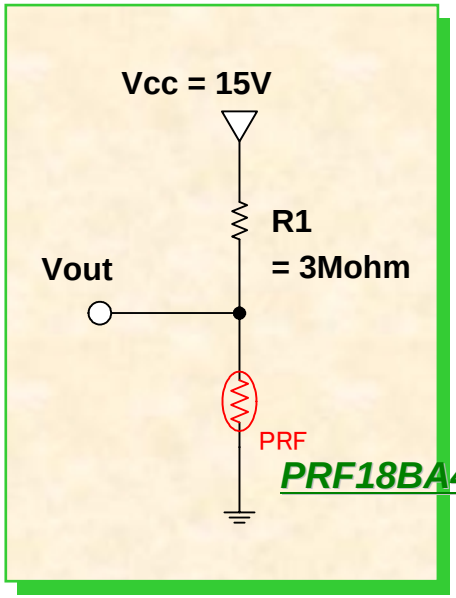


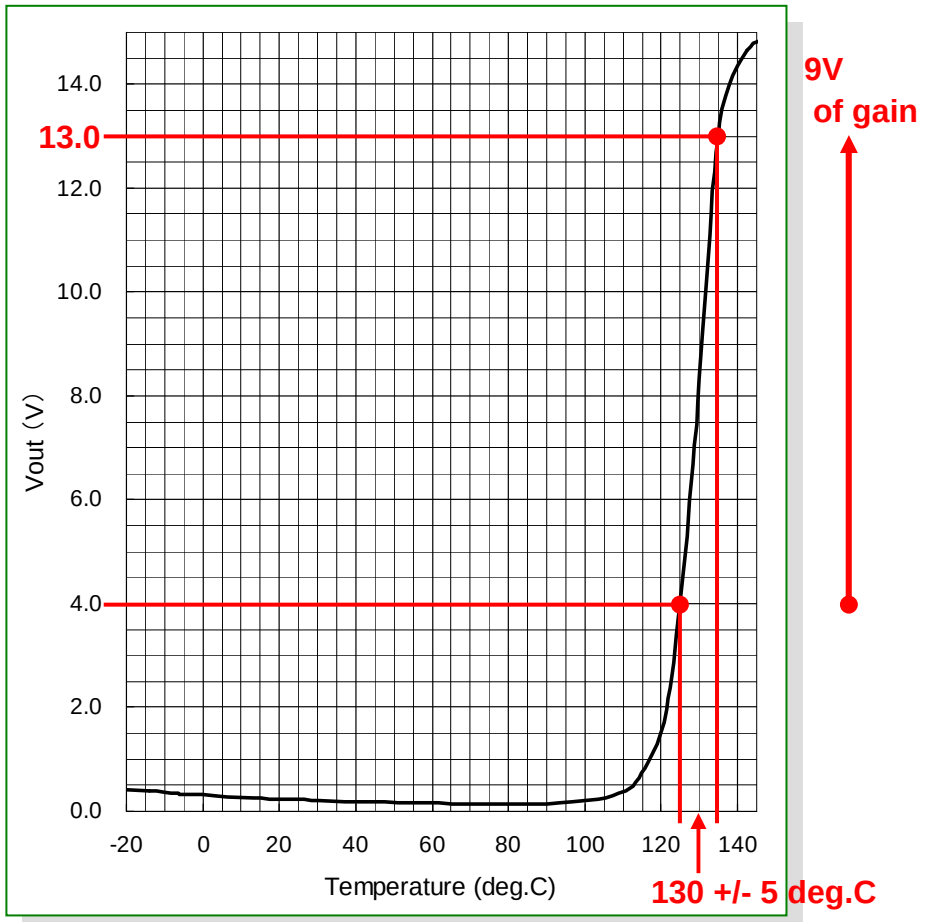
Resistor (R1) has to be more than 3Mohm, in order to keep the current (i1) under 5µA when 15V of voltage is applied.

Output Voltage (Vout) Simulation

at Overheat Sensing Circuit, using PRF18BA473QB1RB

New ! z





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This circuit can output approx. 9V of voltage gain from 125 deg.C to 135 deg.C.

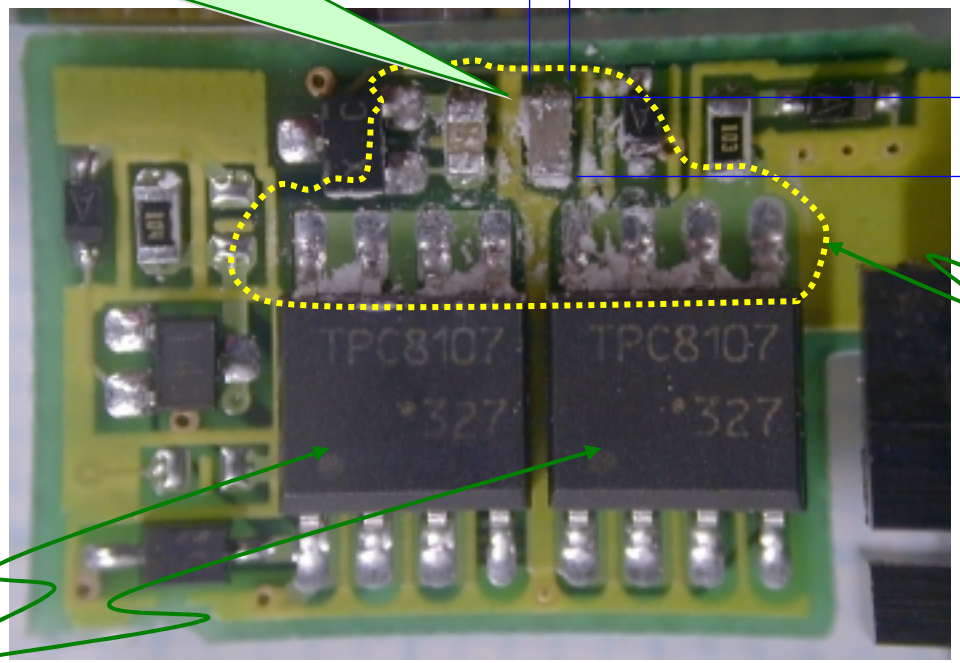
Overheat Sensing of FETs using PRF18BA473QB1RB

New !

PRF18BA473QB1RB

PRF

Sensing Temp.: 130 deg.C

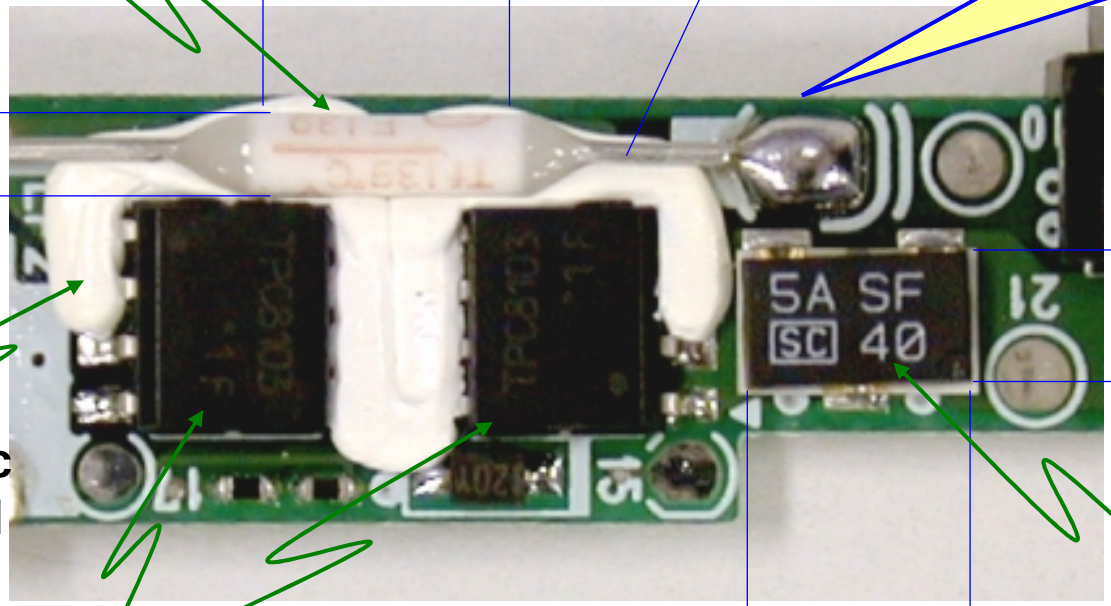


Overheat Sensing of FETs by Temperature Fuse

Temp. Fuse

Rated Functioning Temp.: 139 deg.C

 # Mounting Cost !
 # Big Size (Height) !
 # Expensive Price !

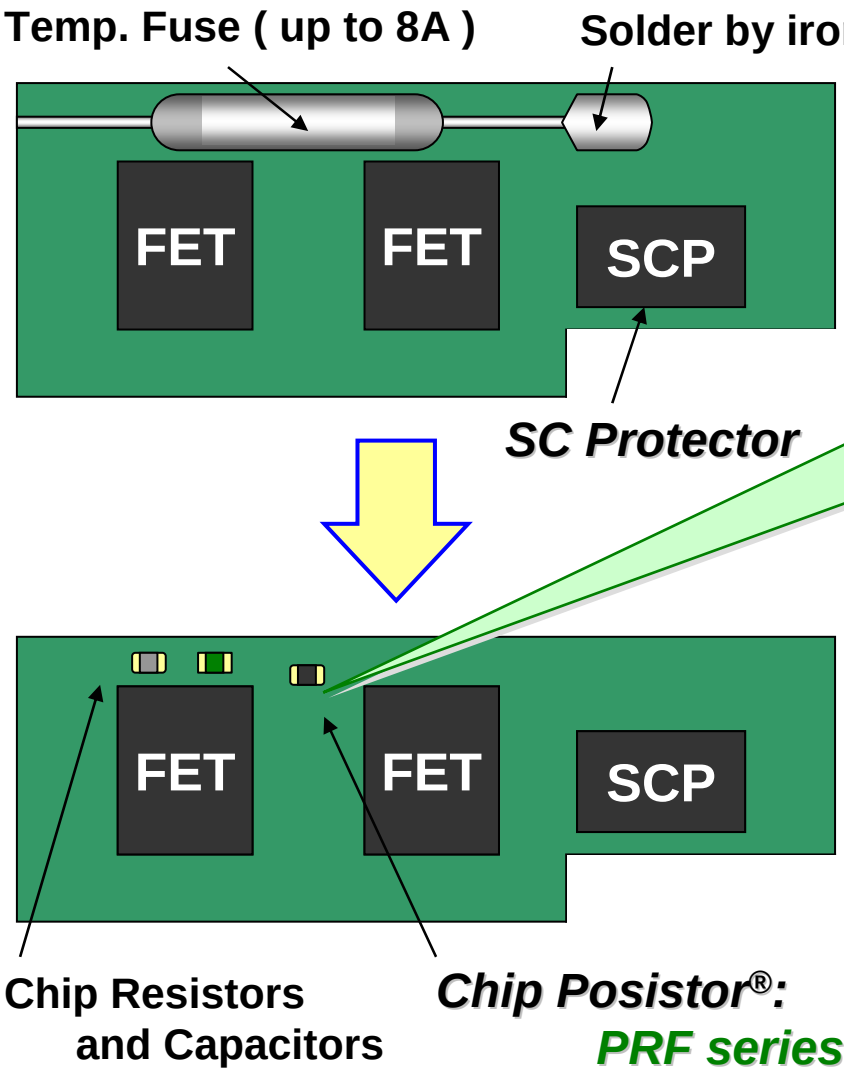


Soft plastic for thermal contacting

FET

SC Protector

Features of Chip Posistor ® instead of Temp. Fuse



PRF

***Chip Posistor®: PRF* provides…**

Surface mounting on board
Downsizing: area & height
Total cost saving

Using with *SC Protector*, the secondary protection circuit;
Over-current protection
Overcharge protection
& Overheat protection of FETs,
is fully completed !!

For *SC Protector*, contact

Sony Chemicals Corporation
Electronic Devices Business Group
1-11-2, Osaki, Shinagawa-ku, Tokyo,
141-0032 Japan
TEL: +81-3-5435-3943
FAX: +81-3-5435-3072
http://www.sccj.co.jp/html_e/products/detail/prd04_f.html

Click!

Features of Chip POSISTOR ®

In the case of high-current circuit over 10A,
***Chip POSISTOR ®: PRF* 's advantages are more effective.**

PRF