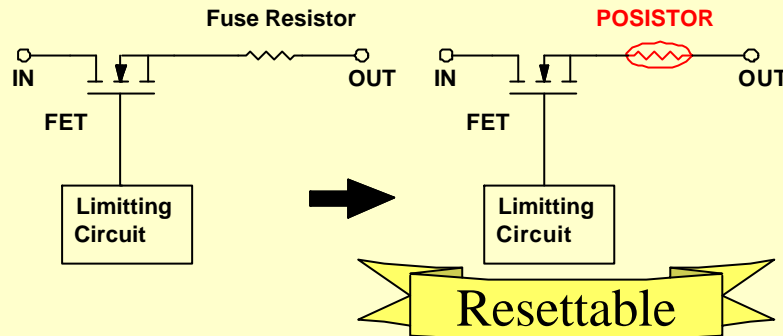


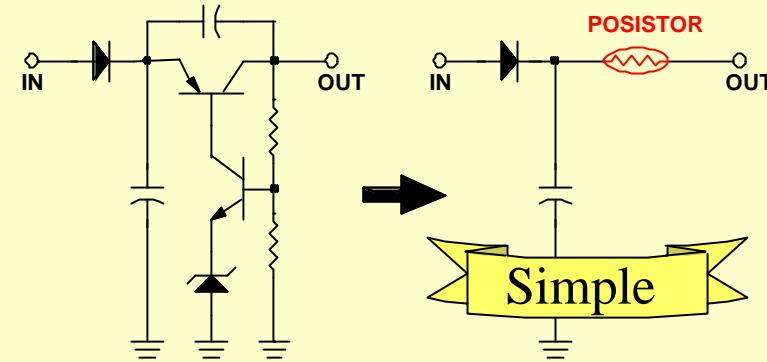
# Replacement by **PRG series**



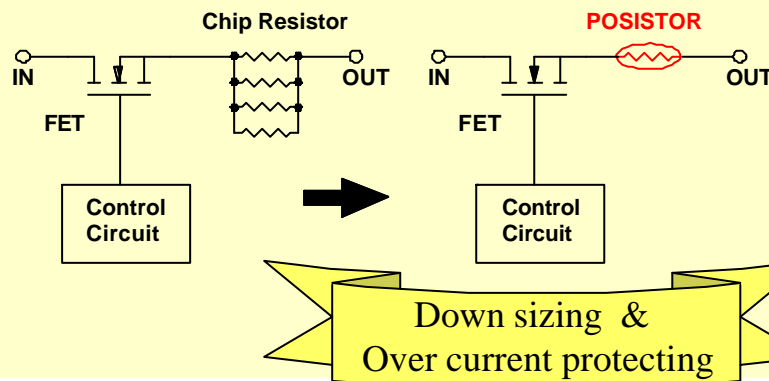
## From Fuse Resistor



## From Current Control Circuit



## From Chip Resistor



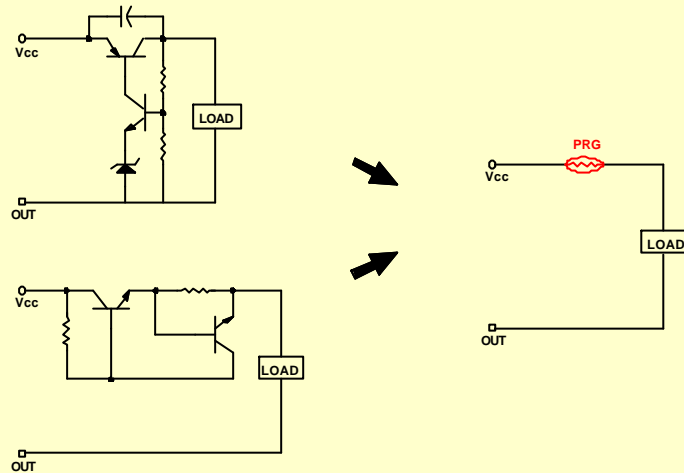
Item	POSISTOR	Fuse Resistor	Control Circuit	Chip Resistor
Safety	○	○	○	✗
Repeat	○	✗	○	✗
Space	○	○	✗	✗
Cost	▲	▲	✗	○

# APPLICATION NOTE

Thermistor Products Department



## POSISTOR<sup>®</sup> Short-circuit Protection for many kinds of circuits and ICs

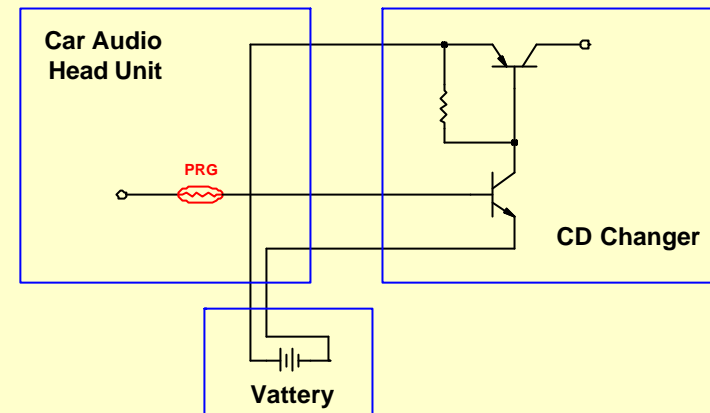


When many kinds of circuit short out, the output current is increased rapidly and various kinds of trouble such as over-heating, fuming or even firing might be caused.

To prevent this, short circuit protection comprising of Transistor, zenor-diode and resistors has been adopted for many cases. Also, power ICs and other ICs often require short-circuit protection.

Chip "Posistor" (0603-size chip-type component) presents a solution because it can detect over-current by itself and suppress it to the safety level.

## Overcurrent protector for Signal Line of Car Audio



Signal lines and power lines are connected between Head Unit and CD Changer in Car Audio System. These lines may cause short circuit problem by biting cables when these equipments are put together in a car.

The short circuit is protected by the circuit using zener-diodes, transistors and resistors in many cases. Current fuse cannot cut off due to low current.

Chip "POSISTOR" PRG18 series can offer the solution for saving space and devices to protect the short circuit.

Data here are reference only. Specification available upon request. Products to be evaluated, confirmed by the user before actual use. Description here may be revised without notice.

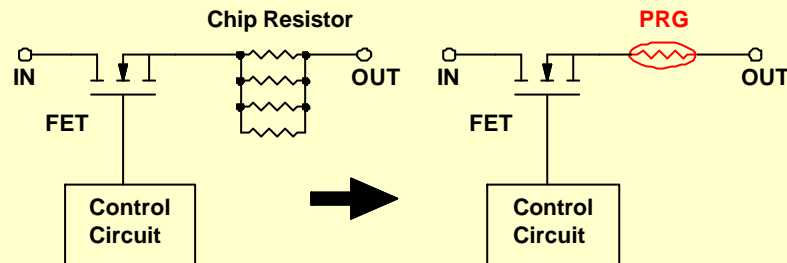
# APPLICATION NOTE

Thermistor Products Department



## POSISTOR<sup>®</sup>

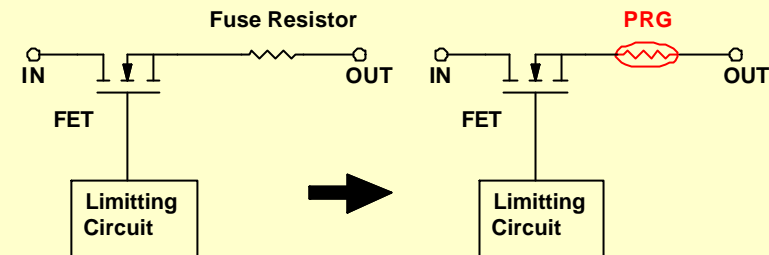
### As current limiting resistors



Current limiting resistor which is connected to source terminal of FET has usually resistance value of tens or hundreds ohm. And its power consumption is sometimes more than 1w. For this application, several pieces of 0804-size resistors or a piece of 2613-size resistor has been used. Since wide mounting space is required for these resistances, different kind of current limiting resistor is required. A solution is presented by Chip "Posistor" (0603-size chip-type component) which can perform like resistor having power consumption value of around 1w.

## POSISTOR<sup>®</sup>

### Replacement from Fuse resistors



Fuse resistor operate as current limiting resistor in normal condition and shut out circuit when abnormal current is applied in abnormal condition (short mode by failure of FET).

Fuse resistor may operate by large current (not abnormal current).

==> **Need to replace**

POSISTOR also operate as current limiting resistor in normal condition and control abnormal current by its resistance-temperature characteristics in abnormal condition.

==> **No need to replace because of its resetable function**

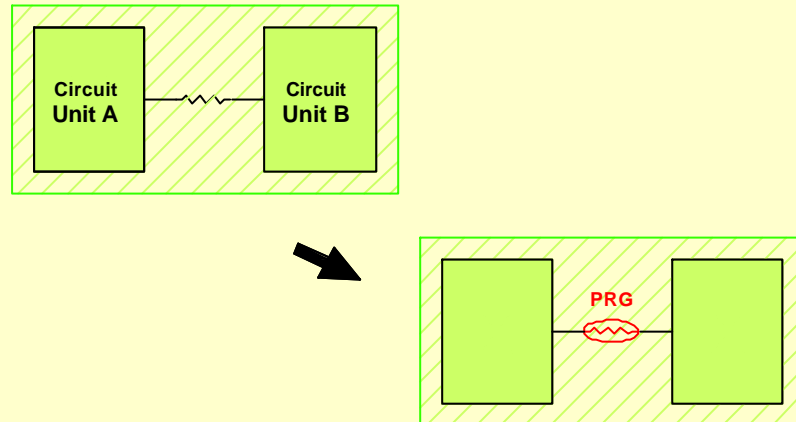
Data here are reference only. Specification available upon request. Products to be evaluated, confirmed by the user before actual use. Description here may be revised without notice.

# APPLICATION NOTE

Thermistor Products Department

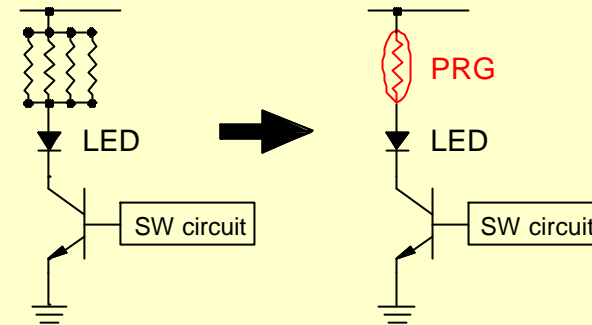


## Overcurrent protector for signal line



When electric signal or power line shorts out in transmission from circuit unit A to circuit unit B, the sending port (unit A) might suffer from overheating or drop of output voltage. And chip resistor is usually used as a short circuit protector. But since resistance value of the resistor has to be rather high (e.g. 1k ohm), power consumption and voltage drop of it under normal operation has been head ache. Chip "Posistor" presents a solution because it can behave like chip resistor with low resistance value under normal operation and become high resistance when circuit shorts.

## Overcurrent protector for LED Lighting Circuit



Higher brightness LED lighting needs pulse current driving. In this case, the current limiting resistor's capability against power is higher wattage, for example from 1/4W to 1W. For this application, several pieces of 0804-size resistors in parallel or a piece of 2613-size resistor has been used. Since wide mounting space is required for these resistances.

A solution is presented by Chip "Posistor" (0603-size chip-type component) cause minimizing space. And if the transistor is broken by short-circuit mode, Chip "posistor" decrease the current to grand by the function of overcurrent protection.

Data here are reference only. Specification available upon request. Products to be evaluated, confirmed by the user before actual use. Description here may be revised without notice.

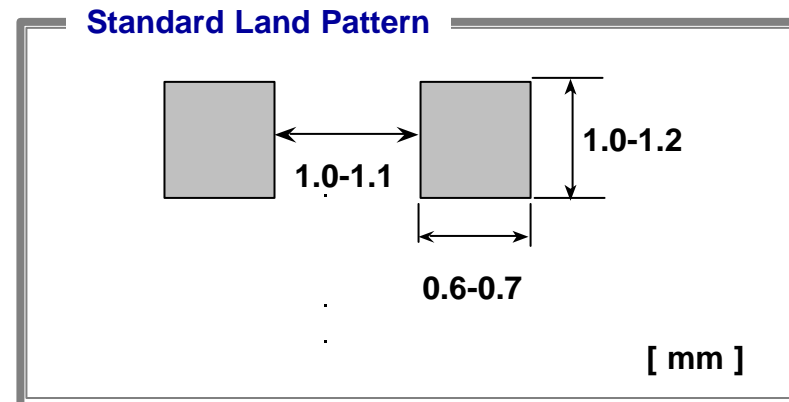
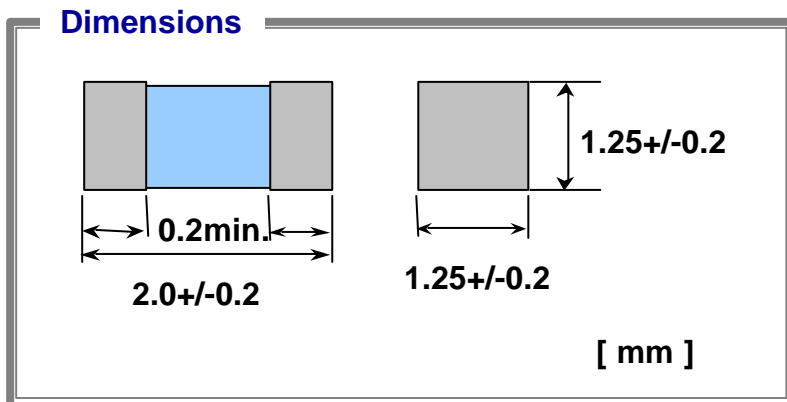
# PRG21 (multi layer) for Overcurrent Protection

**NEW**

Ratings

Lead Free Type

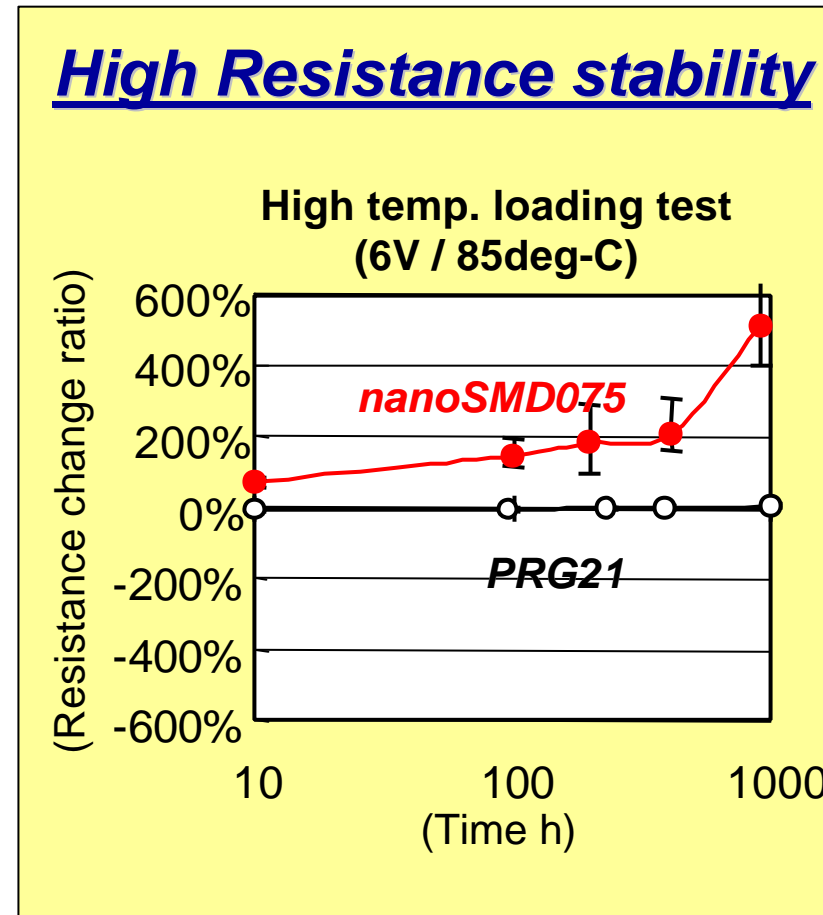
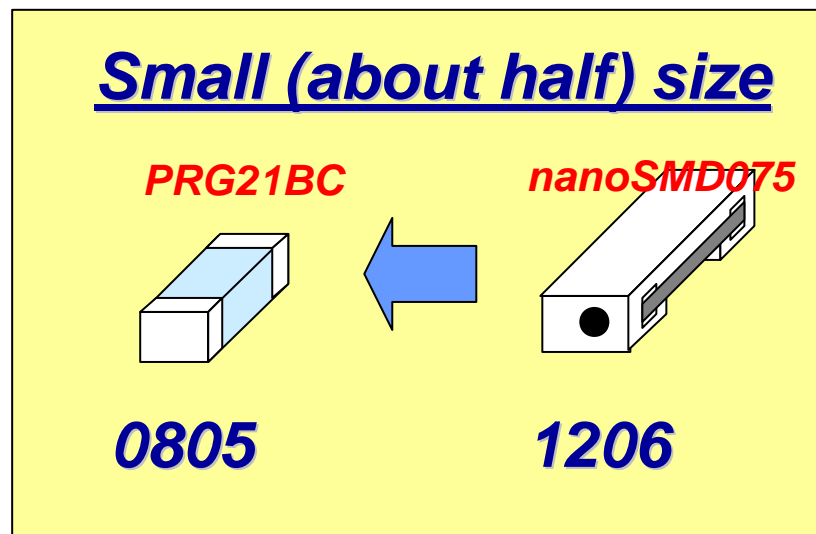
Part Number	Resistance Value (at +25deg.C)	Maximum Voltage	Non-operating current (at +60deg.C)	Operating current (at -10deg.C)
PRG21BC0R2MM1RA	0.20ohm +/-20%	6VDC	500mA	2000mA



Data here are reference only. Specification available upon request .Product to be evaluated, confirmed by the user before actual use. Description here may be revised without notice.

## Benefit of PRG21BC comparing to nanoSMDM075

Part Number	Max. Voltage	Non Operating Current
(Muarat) PRG21BC0R2MM1RA	6Vdc	500mA at 60deg-C
(Raychem) nanoSMDM075	6Vdc	520mA at 60deg-C



Data here are reference only. Specification available upon request. Product to be evaluated, confirmed by the user before actual use. Description here may be revised without notice.