R5432V Temperature Protection Circuit Example

Reported：台北工程部

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Circuit Example for 5 Cell Protection

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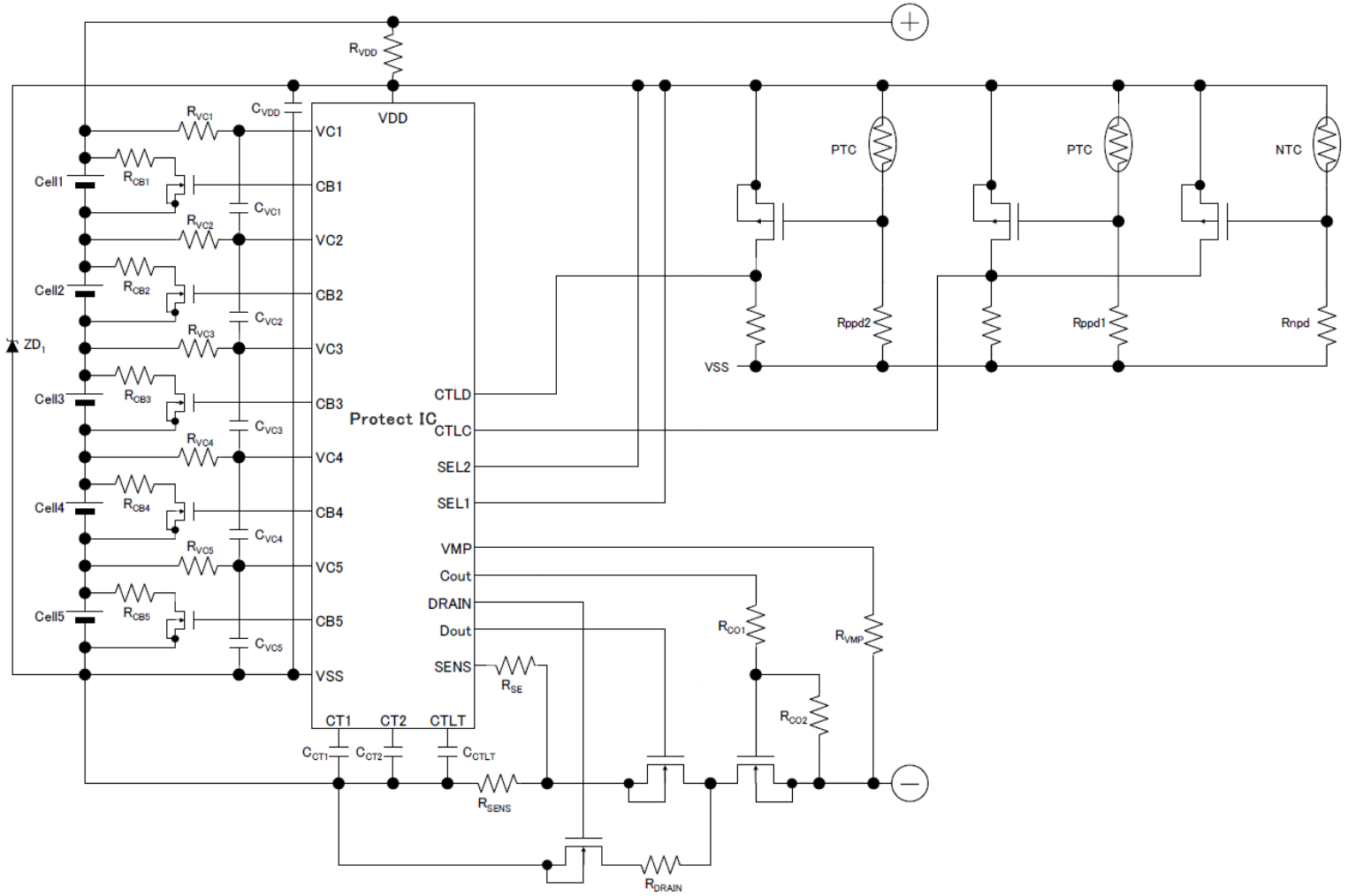
Whole circuit of temperature protection



Circuit Example for 5 Cell Protection

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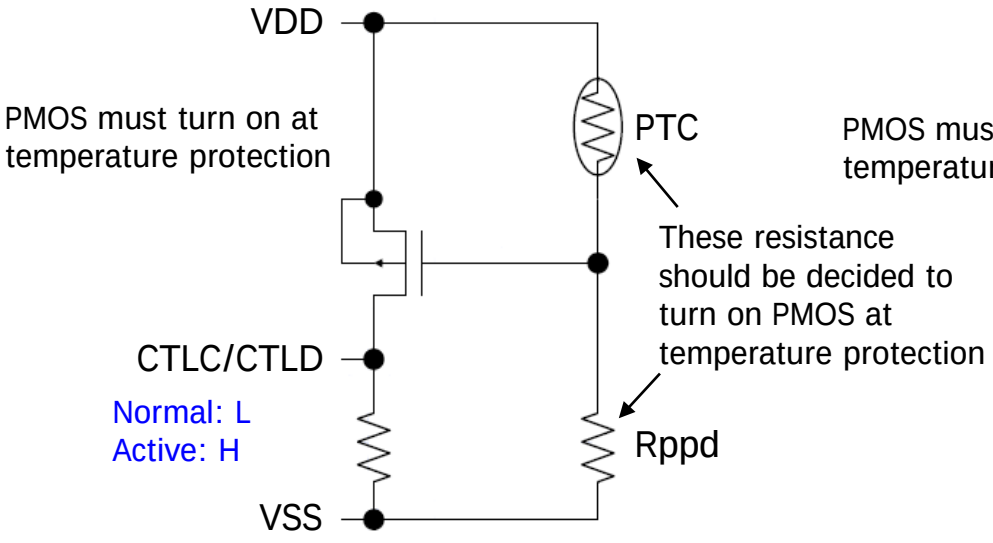
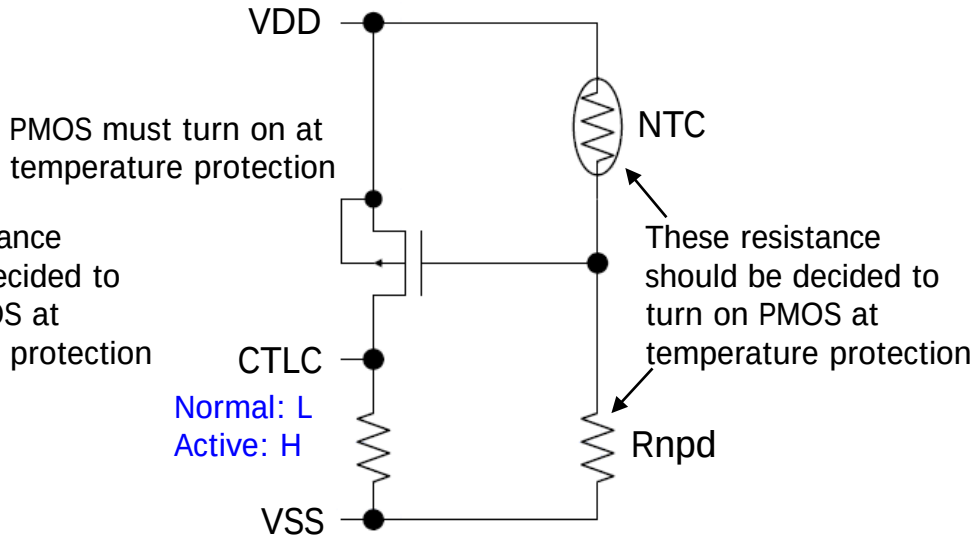
Partial circuit of temperature protection

High Temperature Protection



Low Temperature Protection



COUT(DOUT) turns off when CTLC(CTLD) is inputted VDD voltage

Circuit Example for 5 Cell Protection

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With temperature protection

Technical Note 1

High temperature protection
PMOS Gate connect to between PTC and resistor, and CTLC/CTLD connect to between PMOS drain and resistor.
The value of Rptc and Rppd should be decided to turn on PMOS at temperature protection.

Ex:
Rptc : PTC resistance at temperature protection
Rppd : Rppd resistance
Vthpp : Threshold voltage of PMOS
Vctl: Input voltage of CTLC/CTLD

If VDD * { Rppd / (Rppd + Rptc) - 1 } becomes less than Vthpp, then PMOS turns on and CTLC/CTLD is inputted VDD voltage.

It is important for this circuit to select PMOS, PTC and Rppd properly.

Circuit Example for 5 Cell Protection

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With temperature protection

Technical Note 1

Low temperature protection
PMOS Gate connect to between NTC and resistor, and CTLC connect to between PMOS drain and resistor.
The value of Rntc and Rnpd should be decided to turn on PMOS at temperature protection.

Ex:
Rntc : NTC resistance at temperature protection
Rnpd : Rnpd resistance
Vthpn : Threshold voltage of PMOS
Vctl: Input voltage of CTLC

If VDD * { Rnpd / (Rnpd + Rntc) - 1 } becomes less than Vthpn, then PMOS turns on and CTLC is inputted VDD voltage.

It is important for this circuit to select PMOS, NTC and Rnpd properly.

Thank You!