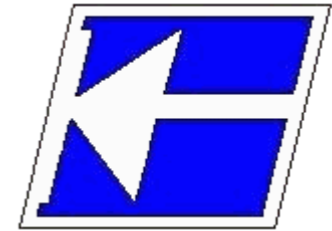Instituto Federal de Educação, Ciência e Tecnologia de Santa Catarina
Departamento Acadêmico de Eletrônica
Eletrônica de Potência
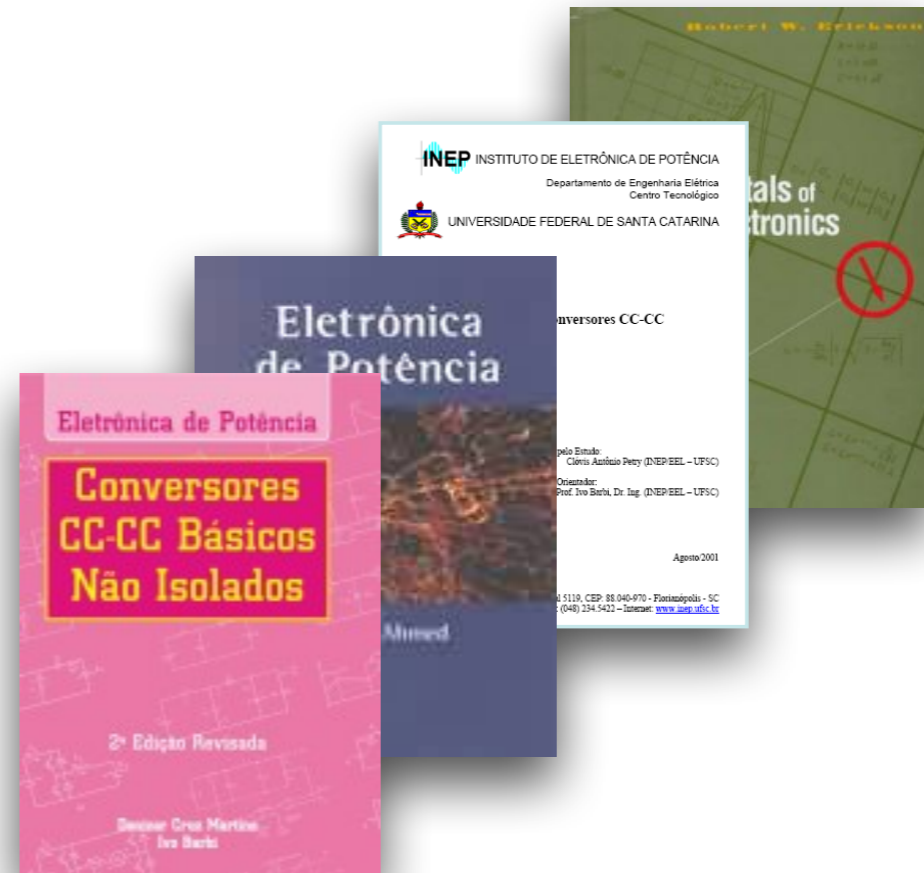
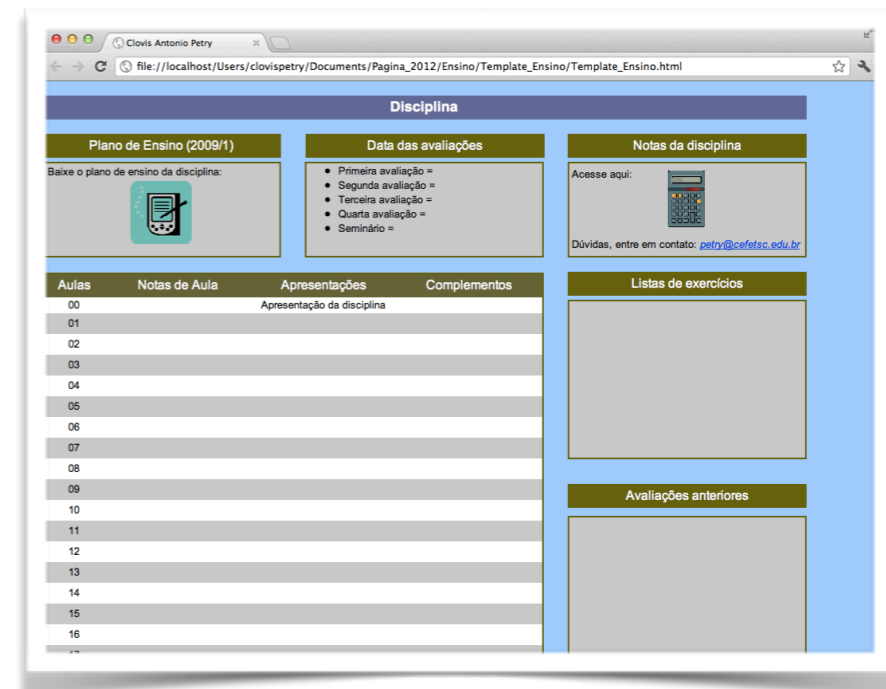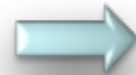# Projeto de Conversores CC-CC Integrados

Prof. Clovis Antonio Petry.

Florianópolis, abril de 2020.

Biografia para Esta Aula

Capítulo 9 - Conversores cc-cc:

- Projeto de conversores cc-cc integrados.
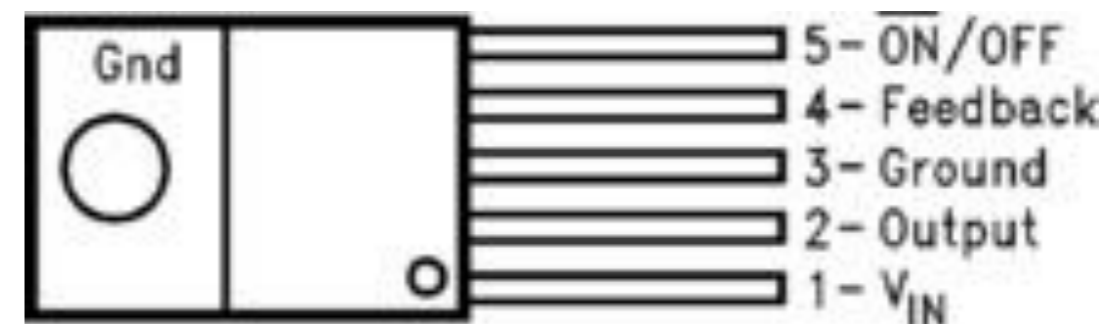
www.ProfessorPetry.com.br

Nesta Aula

Conversores cc-cc integrados:

- O circuito integrado LM1575;
- Exemplo de projeto online;
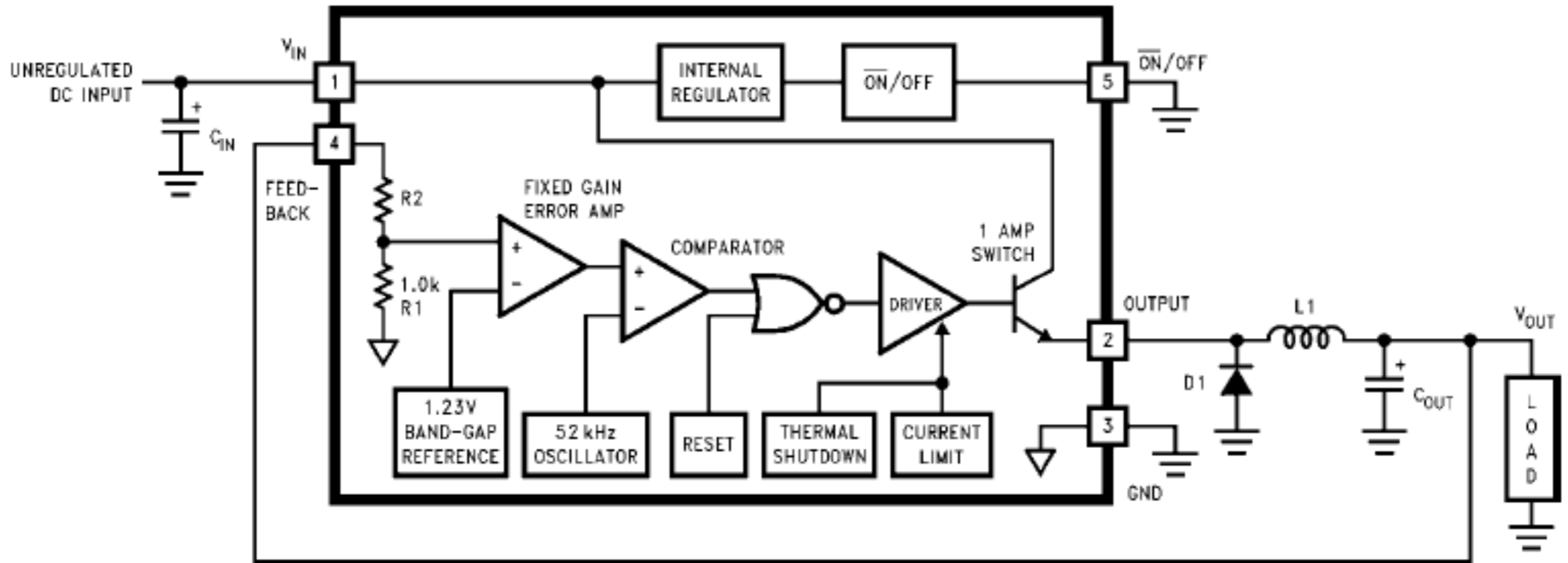- Exemplo de projeto com o LM1575;
- Exercício de projeto.

O Integrado LM1575

National Semiconductor

LM1575/LM2575/LM2575HV
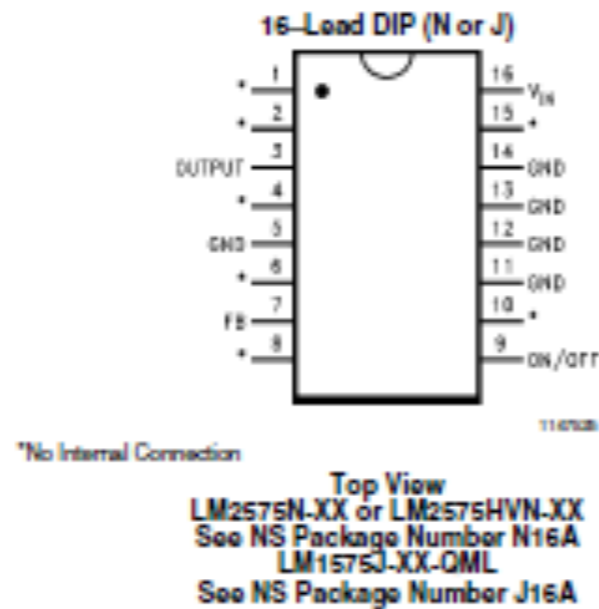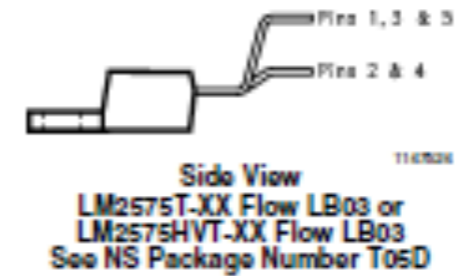## SIMPLE SWITCHER® 1A Step-Down Voltage Regulator
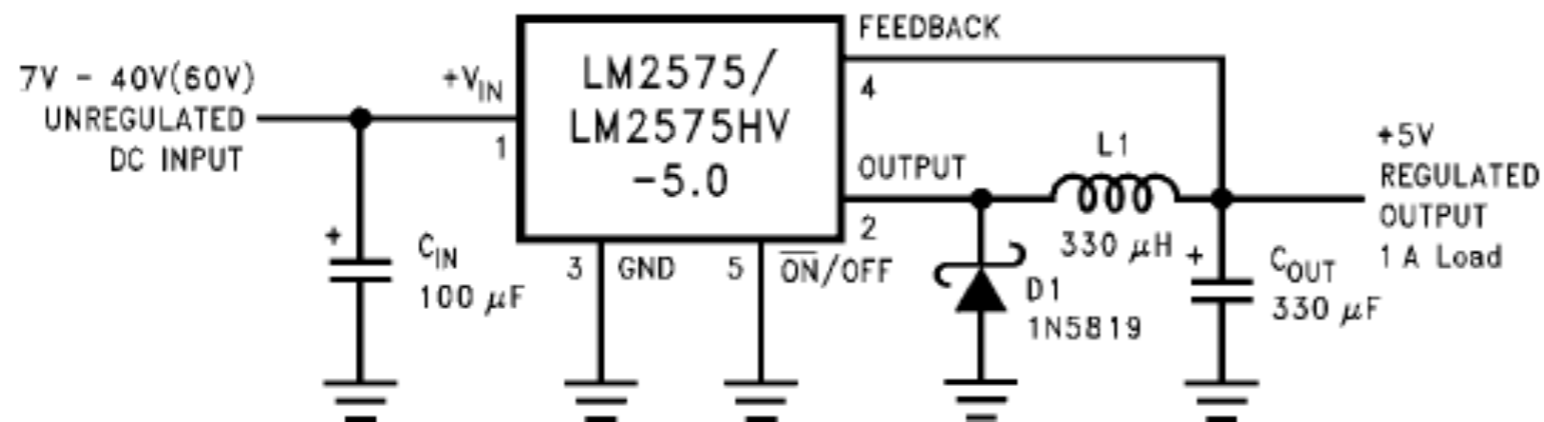
1147501
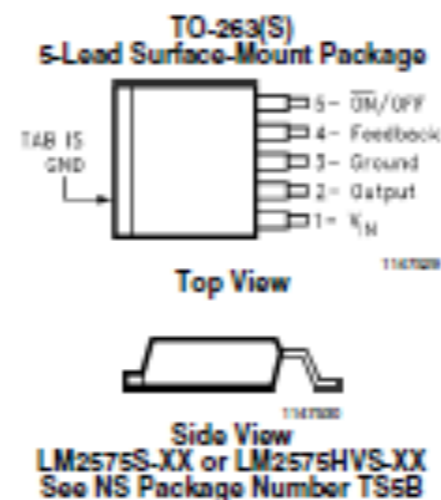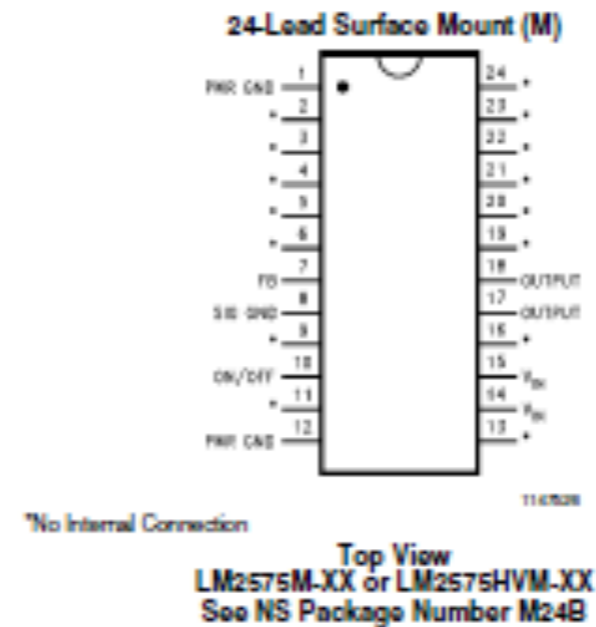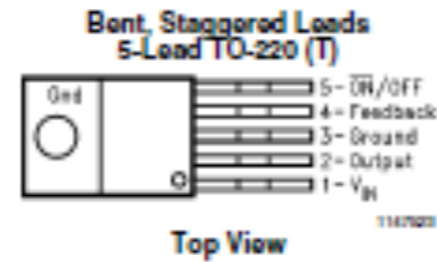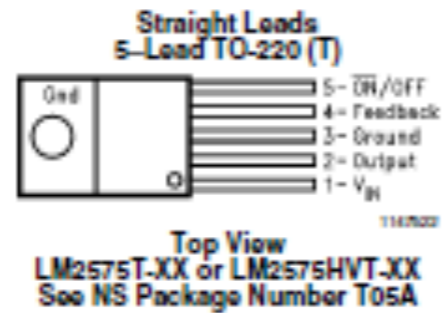
O Integrado LM1575
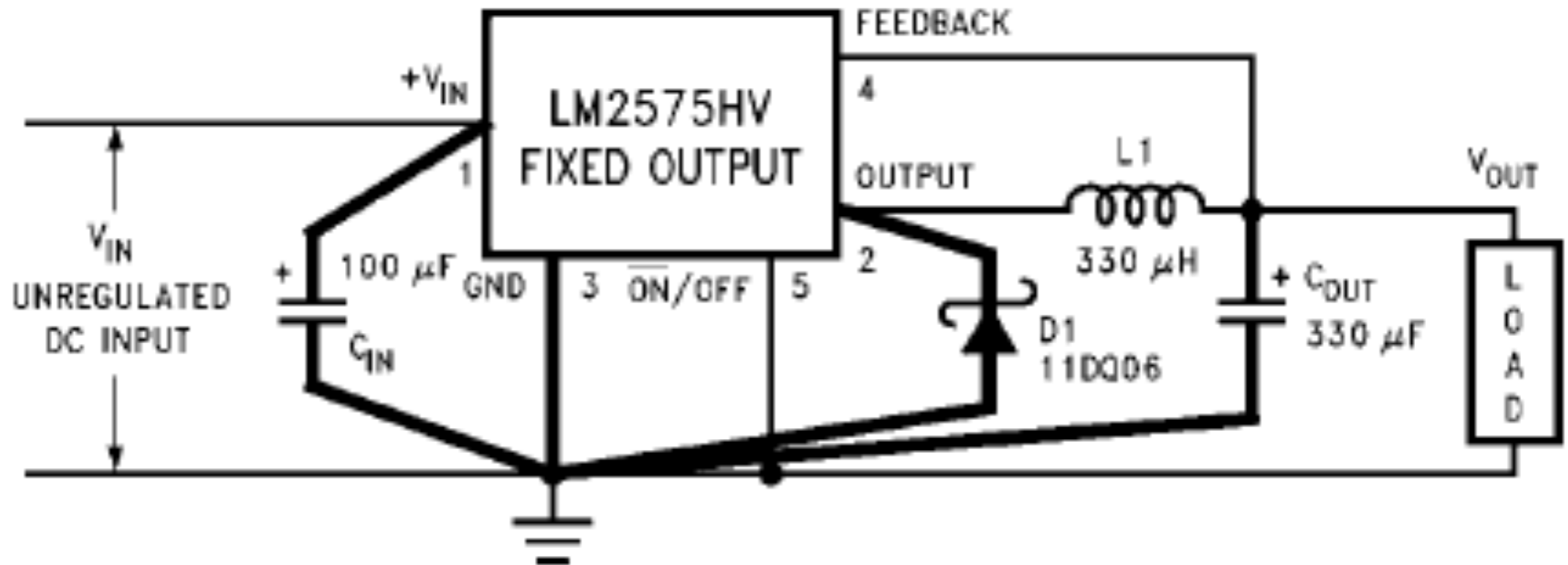
O Integrado LM1575

Saída de tensão fixa

O Integrado LM1575

Adjustable Output Voltage Version

FEEDBACK

+V_IN

LM2575HV–
ADJ

4

1

OUTPUT

L1
330 µH

V_OUT
5.00V

7V – 60V
UNREGULATED
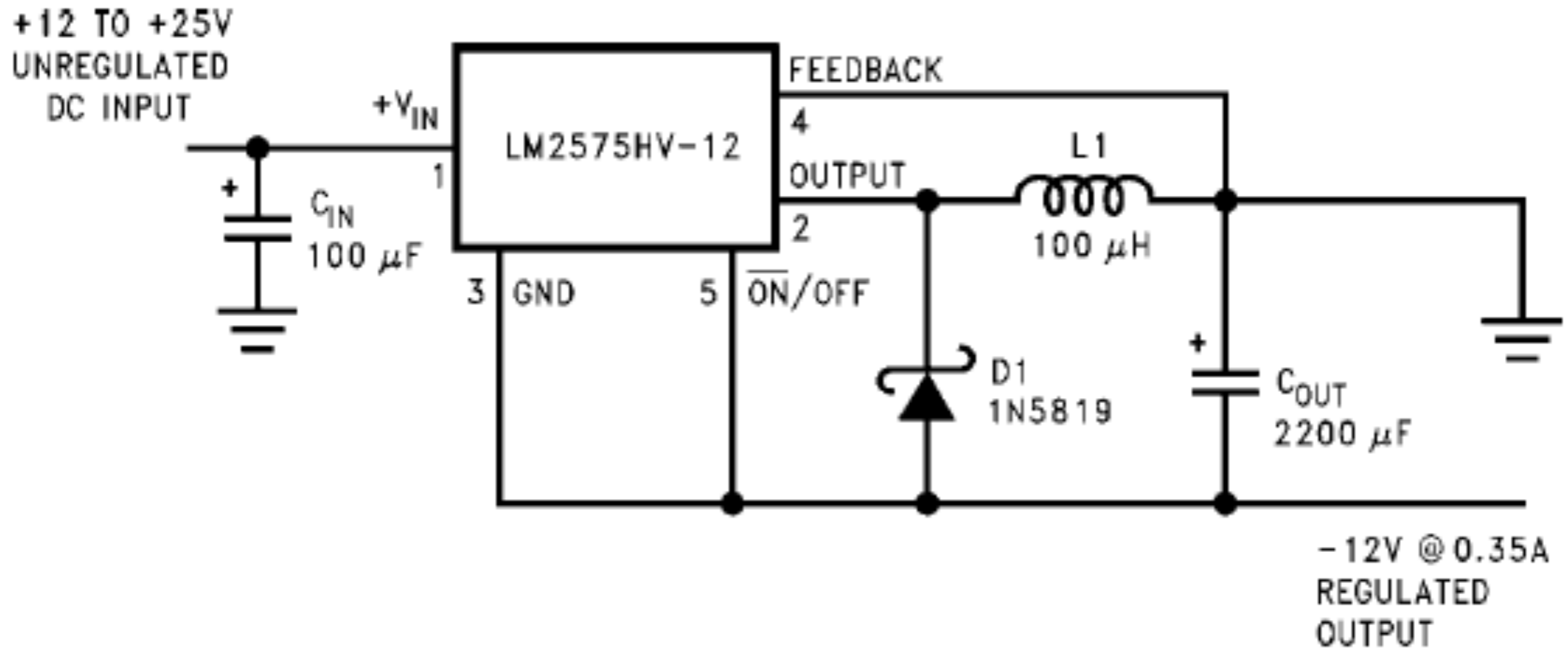DC INPUT

+ 100 µF
C_IN

GND

3 ON/OFF 5

2

D1
11DQ06
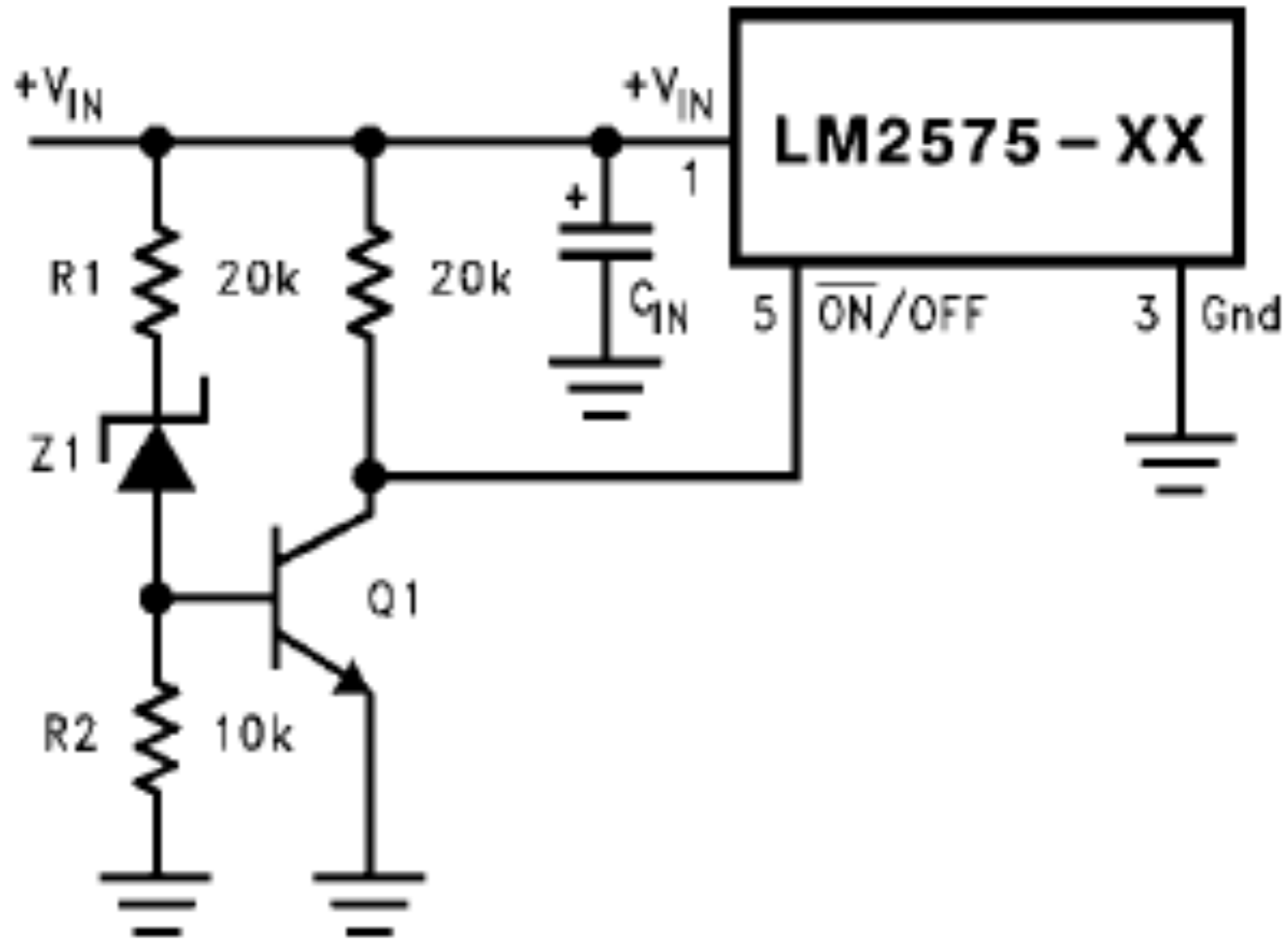
+ C_OUT
330 µF

R2

R1

L
O
A
D
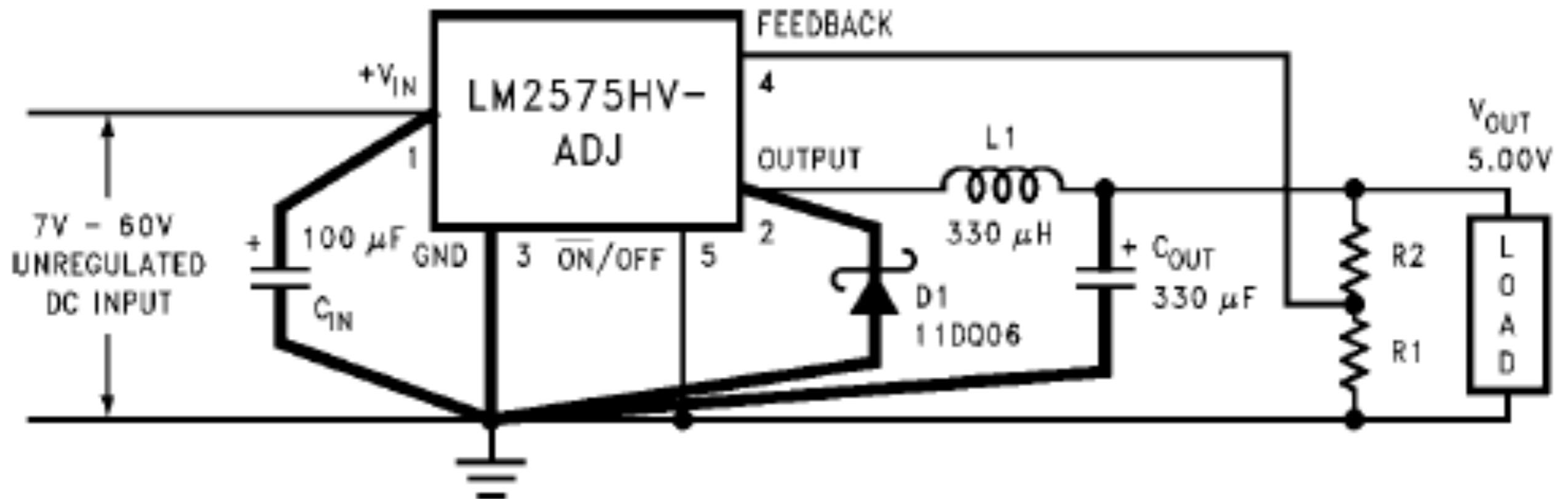
Saída de tensão ajustável

O Integrado LM1575
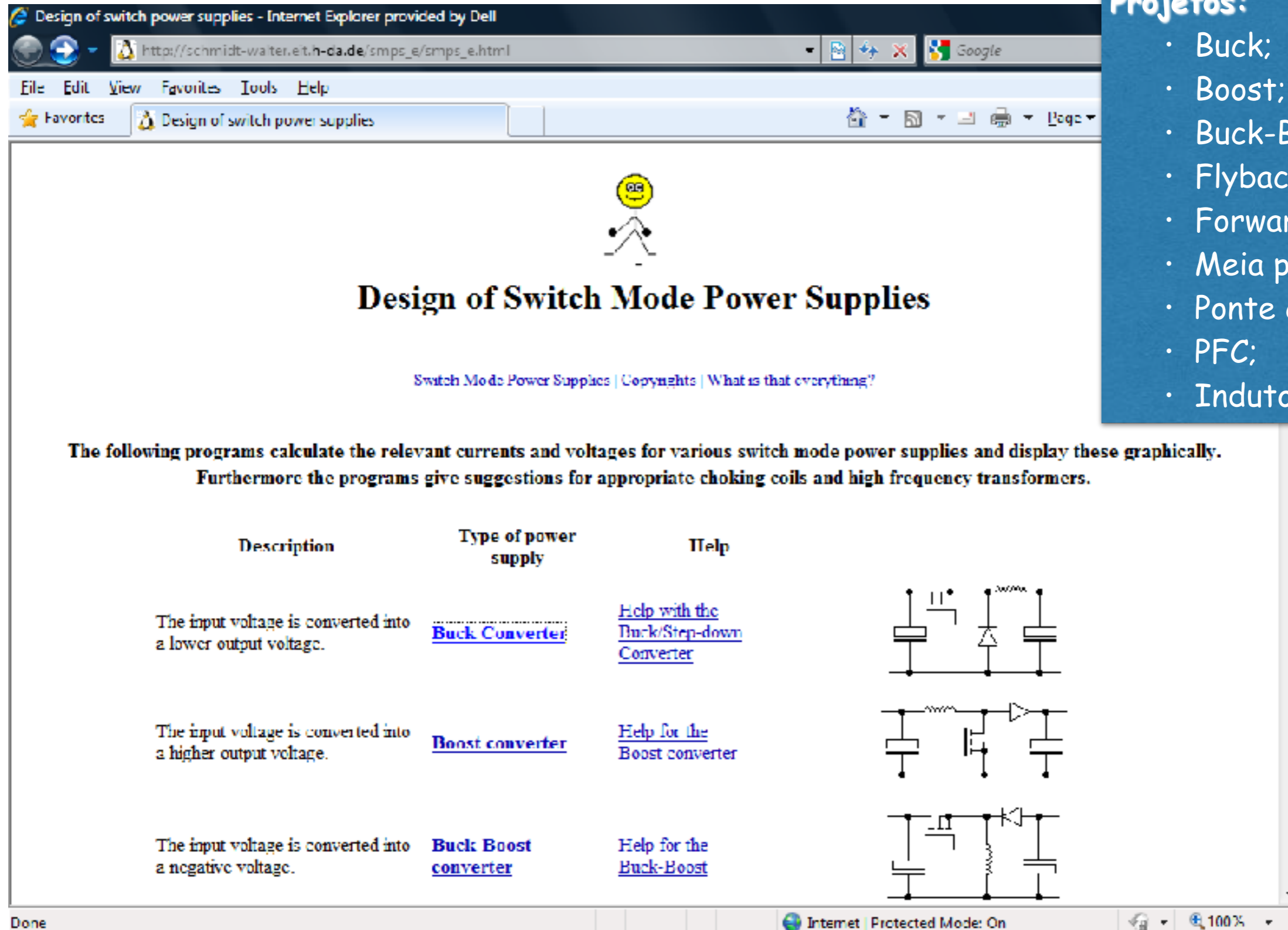

Buck-Boost – Entrada positiva/saída negativa

O Integrado LM1575

Undervoltage lockout – proteção contra subtensão

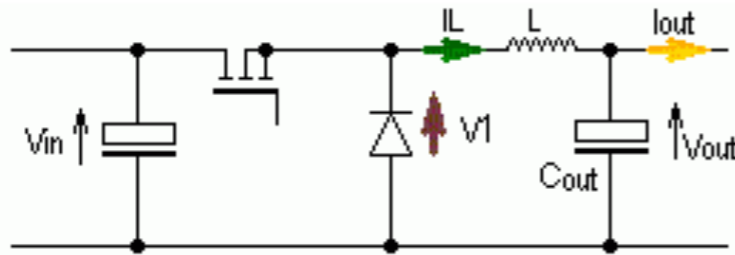# Exemplo de Projeto Online

Projetos:
- Buck;
- Boost;
- Buck-Boost;
- Flyback;
- Forward;
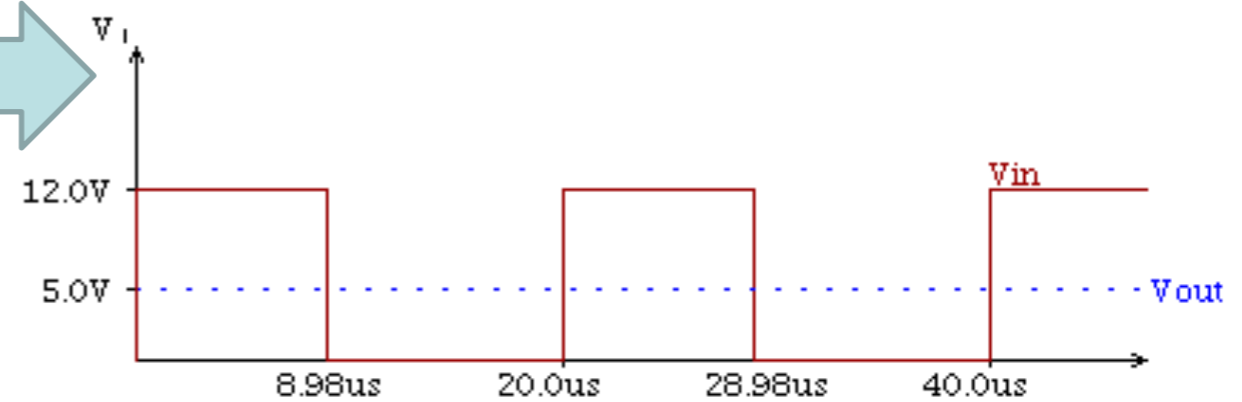- Meia ponte;
- Ponte completa;
- PFC;
- Indutores.

schmidt-walter.eit.h-da.de/smps_e/smps_e.html

Exemplo de Projeto Online

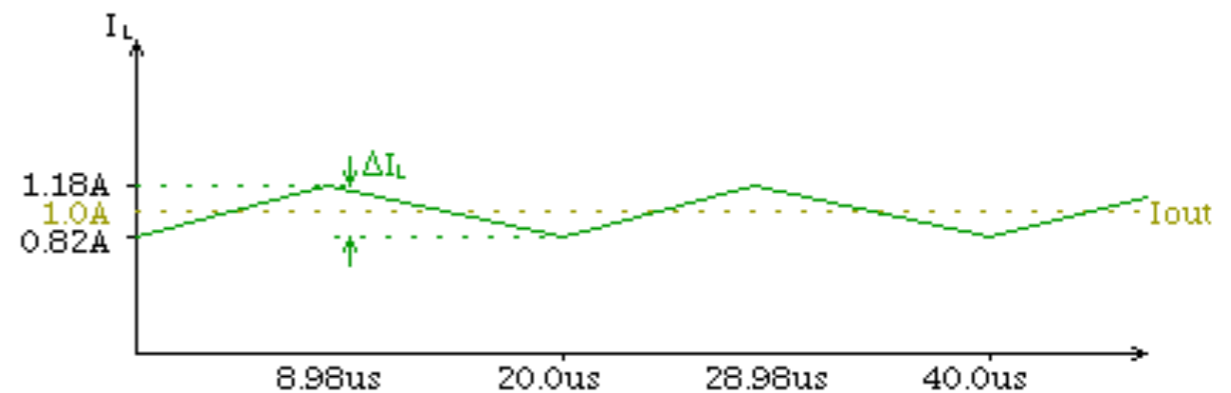## Buck Converter

$V_{in\_min} = 10.0V$	$V_{in\_max} = 14.0V$	$V_{in} = 12.0V$
$V_{out} = 5.0V$	$I_{out} = 1.0A$	$f = 50.0kHz$
$L = 174.4uH$	ΔI_L for $V_{in\_max} = 0.4A$	

Exemplo de Projeto com o LM1575

Dados de entrada:

- Tensão de entrada = 10 a 14 V;
- Tensão de saída = 5 V;
- Corrente de saída = 1 A;
- Freqüência de comutação = 50 kHz.

Projetar um conversor Buck com os dados abaixo:
- Tensão de entrada = 12 V;
- Tensão de saída = 3,3 V;
- Corrente de saída = 0,5 A;
- Freqüência de comutação = 50 kHz.

Apresentar os resultados com o projeto online e com o projeto seguindo a metodologia do LM1575.

Próxima Aula

Conversores cc-cc:

• Conversores operando em malha fechada.