

AN-2157 Constant Current Constant Voltage Buck Converter With LM25085, or, Implementing Accurate Current Limit With LM25085

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ABSTRACT

In many applications, a constant-current constant-voltage (CC/CV) dc source is needed. The I-V characteristic of a constant-current constant-voltage (CC/CV) source is shown in [Figure 1](#). This application report presents an external op-amp based accurate current limit circuit suitable for CC/CV operation when the required constant current range is very narrow.

Contents

1	Description	1
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List of Figures

1	CC/CV Output Characteristic	1
2	LM25085 With Accurate Current Limit Circuit Based on LM321 and LMV431A	2
3	I-V Characteristics of LM25085 With Accurate Current Limit Circuit	3

1 Description

LM25085 Constant-On-Time (COT) PFET controller provides an easy, cost-effective buck converter solution with excellent transient response. The high side PFET switch makes hundred percent duty cycle operation possible. Non-synchronous operation results in higher efficiency at low load.

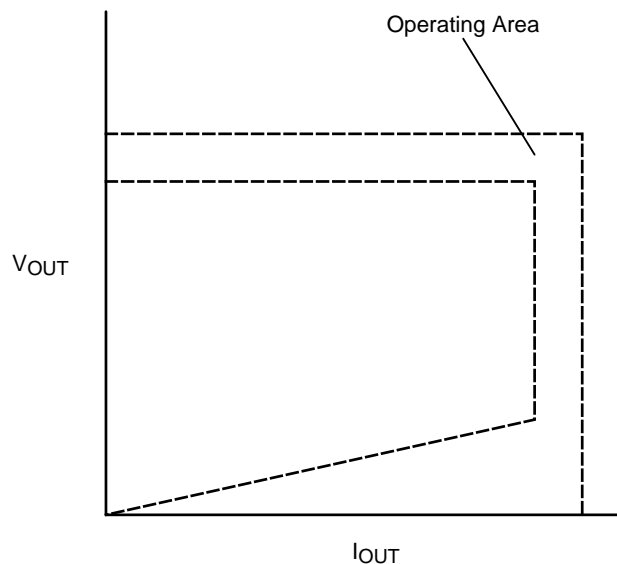


Figure 1. CC/CV Output Characteristic

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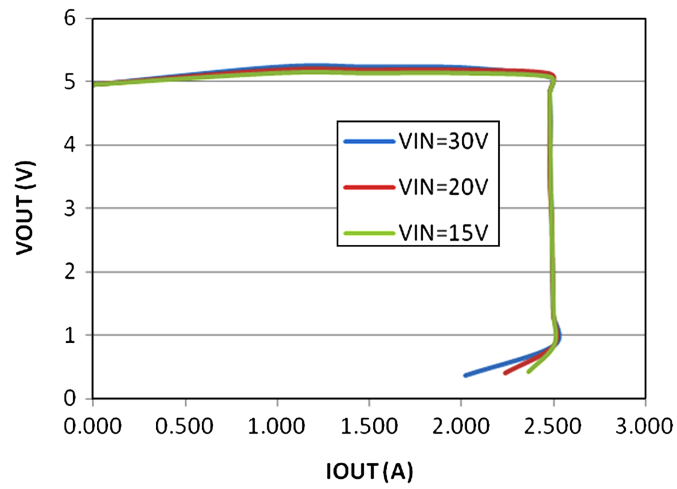


Figure 3. I-V Characteristics of LM25085 With Accurate Current Limit Circuit

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