6V/3.5A, Fast Response, Adaptive COT Step-Down Converter in Tiny DFN2x2

DESCRIPTION

ETA3451 belongs to a new breed of high frequency synchronous Step-Down converters that combines the advantages of voltage mode control and Constant-On-Time control. Its adaptive Constant-On-Time control dynamically changes switch on time to achieve a constant switching frequency. It does not have the minimum on-time constrain normally a fixed-frequency current mode Step-down requires, allowing it to go down to very low duty ratio without affecting loop stability. The voltage mode nature of ETA3451 also provides more superior load transient response and a seamless transition from PFM to PWM modes. ETA3451 is capable of supplying output with current up to 3.5A at 1.2V output. All these features make ETA3451 an excellent choice for ARM based CPU power supply.

ETA3451 is in a tiny DFN2x2-8L package.

FEATURES

- Adaptive COT control
- Up to 95% Efficiency
- Up to 91% Efficiency for low output voltage
- Up to 3.5A Max Output current
- Feedback voltage 0.45V
- Excellent load transient response
- DFN2X2-8L Package

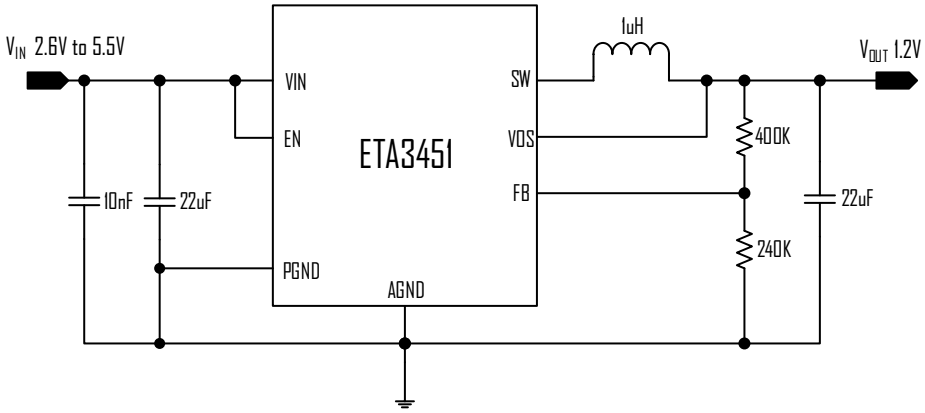
APPLICATIONS

- ARM based CPUs
- Tablet, MID
- Smart Phone
- Smart Set-Top Box, OTT

ORDERING INFORMATION

PART	PACKAGE PIN	TOP MARK
ETA3451D2I	DFN2x2-8L	FBYW FB: Product Code YW: Date Code

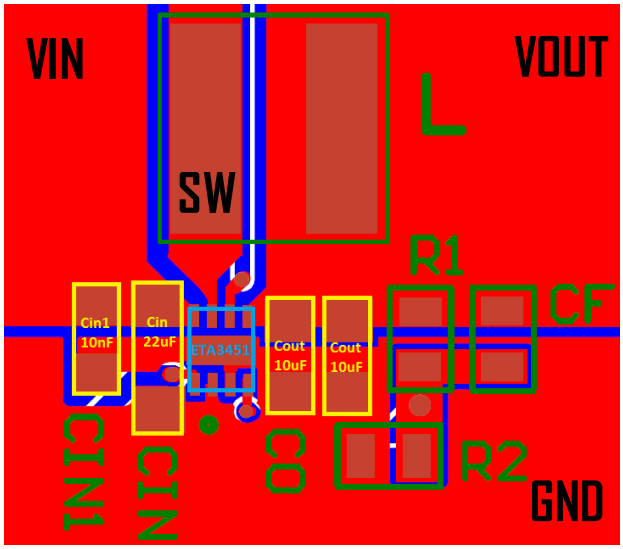
TYPICAL APPLICATION



Typical Application Circuit of 1.2V Output

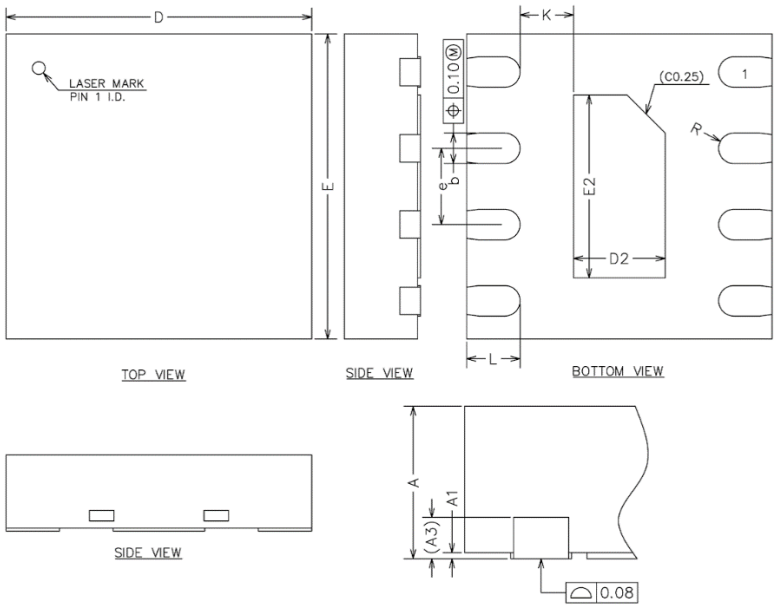
PCB LAYOUT

The ETA3451 employs a sophisticated control scheme to achieve the fast response and other superior performances. So the PCB layout is recommended to strictly follow the proposed way shown below. The Cin (22uF) and Cout (22uF or 10uF x 2) are always to be placed closest to ETA3451. The Cin1 (10nF) is also require to be connected to AGND (not PGND) to filter out the switching noise. Please don't short Pin2 (PGND) and Pin3 (AGND) directly, but through a PCB trace, as what's shown below.
Please contact ETA engineers for confirmation if one needs to change the PCB layout.



PACKAGE OUTLINE

Package: DFN2x2-8L



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0	0.02	0.05
A3		0.20REF	
b	0.15	0.20	0.25
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.50	0.60	0.70
E2	1.10	1.20	1.30
e	0.40	0.50	0.60
K	0.20	–	–
L	0.30	0.35	0.40
R	0.09	–	–