

2MHz, 1A, High Efficiency PWM Step-Down DC/DC Converter

General Description

The iD8251 is a high-efficiency, DC-to-DC step-down switching regulator, capable of delivering up to 1A of output current. The devices operate from an input voltage range of 2.5V to 5.5V and provide output voltages from 0.6V to VIN, making the iD8251 ideal for low voltage power conversions. Running at a fixed frequency of 2MHz allows the use of small inductance value and low DCR inductors, thereby achieving higher efficiencies. Other external components, such as ceramic input and output caps, can also be small due to higher switching frequency, while maintaining exceptional low noise output voltages. Built-in EMI reduction circuitry makes this converter ideal power supply for RF applications. Internal soft-start control circuitry reduces inrush current. Short-circuit and thermal-overload protection improves design reliability. iD8251 is housed in a tiny SOT-23-5, TDFN-6L and DFN1212-6L package.

Applications

- MIDs, Tablet PC
- Set Top Boxes
- USB ports/Hubs
- Hot Swaps
- Cellphones

Features

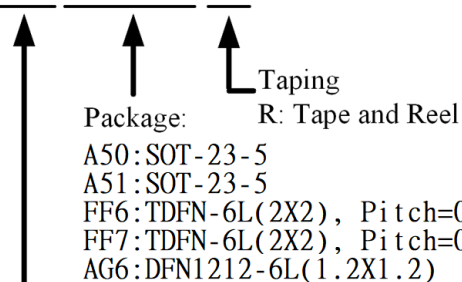
- Up to 96% Efficiency
- Up to 1A Max Output Current
- 2MHz Frequency
- Light Load operation
- Internal Compensation
- SOT-23-5, TDFN-6L and DFN1212-6L Package

Marking Information

For marking information, please contact our sales representative directly or through distributor around your location.

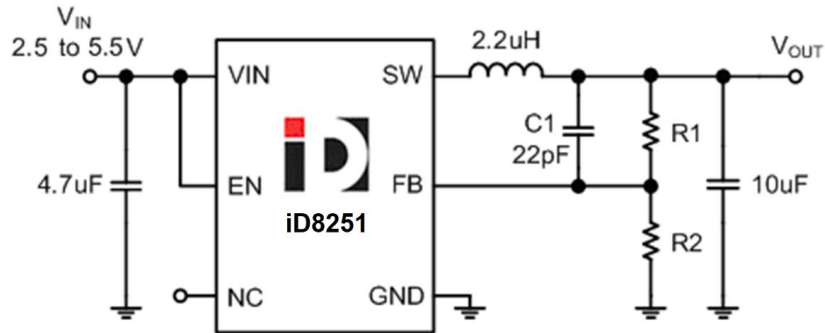
Ordering Information

iD8251 -

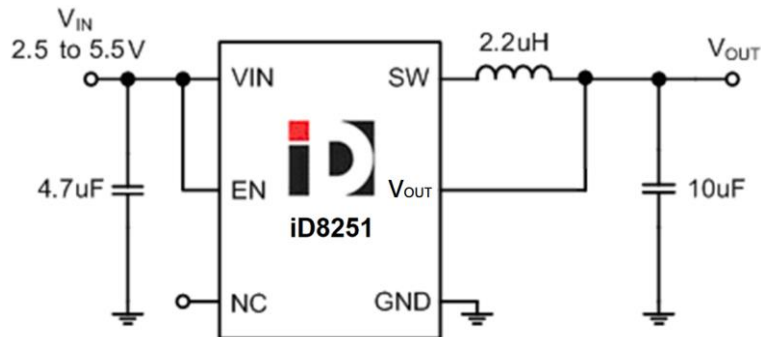


Output Voltage	Voltage Code
Adjustable	AD
1.1	11
1.2	12
1.5	15
2.8	28
3.3	33

Typical Application Circuit



(Adjustable Version)



(Fixed Version)

Absolute Maximum Ratings (Note 1)

IN, SW, FB, EN, V _{OUT} Voltage	-0.3V to 6V
Power Dissipation, P _D @ T _A =25°C	
SOT-23-5	600mW
DFN1212-6L	600mW
TDFN-6L	1282mW
Thermal Resistance, θ _{ja}	
SOT-23-5	167°C/W
DFN1212-6L	167°C/W
TDFN-6L	78°C/W
Lead Temperature	260°C
Storage Temperature	-65°C to 150°C
ESD Susceptibility	
HBM (Human Body Mode)	2kV
MM (Machine Mode)	200V
Junction Temperature	-40°C to 150°C

Recommended Operating Conditions

Input Voltage V _{IN}	2.5V to 5.5V
EN Input Voltage	0V to V _{IN}
Junction Temperature	-40°C to 125°C
Ambient Operating Temperature	-40°C to 85°C