

Dual Channel 1A, Synchronous Step-Down Regulator

General Description

EML3022 is designed with high efficiency step down DC/DC converter and supports dual channel for portable devices applications. It features with extreme low quiescent current with no load which is the best fit for extending battery life during the standby mode.

The device operates from 2.5V to 5.5V input voltage and up to 1A output current capability. High 1.5MHz internal frequency makes small surface mount inductors and capacitors possible and reduces overall PCB board space. Further, build-in synchronous switch makes external Schottky diode is no longer needed and efficiency is improved. EML3022 is designed base on Pulse Width Modulation (PWM) for low output voltage ripple and fixed frequency noise, while Pulse Frequency Modulation (PFM) is used to improve light load efficiency, and Low Dropout (LDO) Mode provides 100% duty cycle operation. Low reference voltage is designed for achieving regulated output down to 0.6V.

The device is available in an adjustable version in E-SOP-8L package.

Features

- Achieve 97% efficiency
- Input Voltage : 2.5V to 5.5V
- Output Current up to 1A
- Reference voltage 0.6V
- Quiescent Current 30 μ A with No Load
- Internal switching frequency 1.5MHz
- No Schottky Diode needed
- Low Dropout Operation: 100% Duty Cycle
- Shutdown current < 1 μ A
- Excellent Line and Load Transient Response
- Over-temperature Protection

Applications

- Blue-Tooth devices
- Cellular and Smart Phones
- Personal multi-media Player (PMP)
- Wireless networking
- Digital Still Cameras
- Portable applications

Typical Application

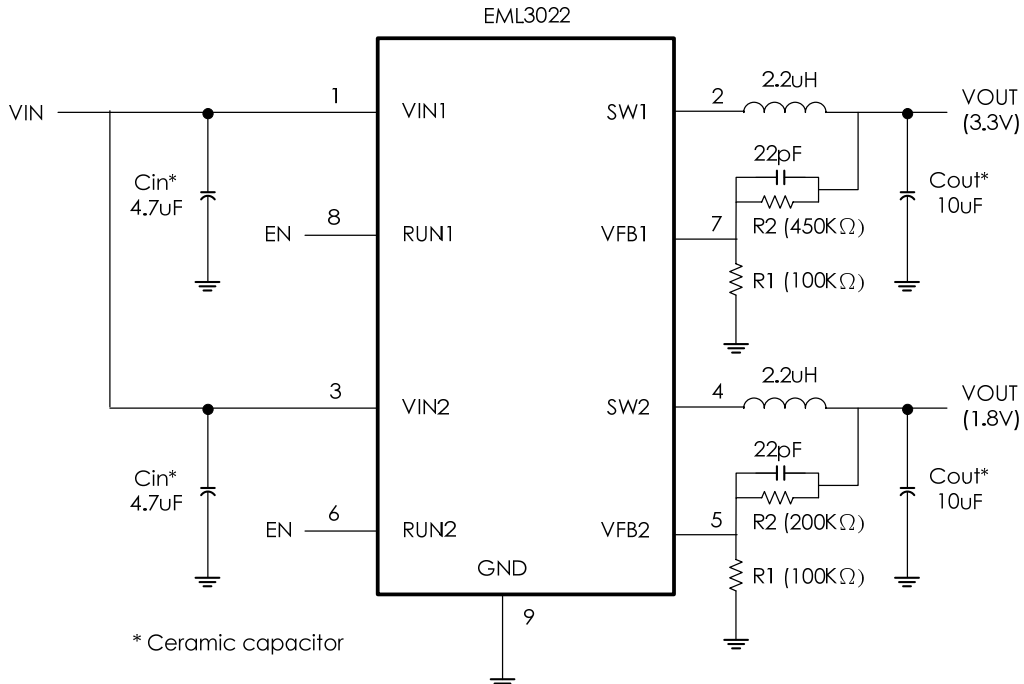
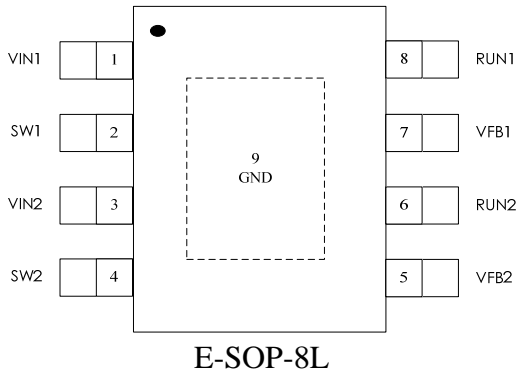


Fig. 1

Package Configuration



EML3022-00SE08NRR
 00 Adjustable
 SE08 E-SOP-8L Package
 NRR RoHS & Halogen free package
 Commercial Grade Temperature
 Rating: -40 to 85°C
 Package in Tape & Reel

Order, Mark & Packing information

Package	Vout(V)	Product ID	Marking	Packing
E-SOP-8L	adjustable	EML3022-00SE08NRR	<p>EMP EML3022 Tracking code</p>	Tape & Reel 3K units

Pin Functions

Pin Name	E-SOP-8L	Function
VIN1	1	Power Input Pin. Must be closely decoupled to GND pin with a 4.7 μ F or greater ceramic capacitor.
SW1	2	Switch Pin. Must be connected to Inductor. This pin connects to the drains of the internal main and synchronous power MOSFET switches.
VIN2	3	Power Input Pin. Must be closely decoupled to GND pin with a 4.7 μ F or greater ceramic capacitor.
SW2	4	Switch Pin. Must be connected to Inductor. This pin connects to the drains of the internal main and synchronous power MOSFET switches.
VFB2 (Adjustable)	5	Feedback Pin. Receives the feedback voltage from an external resistive divider across the output.
VOUT2 (Fixed voltage)		Output Voltage Pin. An internal resistive divider divides the output voltage down for comparison to the internal reference voltage.
RUN2	6	Enable Pin. Minimum 1.2V to enable the device. Maximum 0.4V to shut down the device.
VFB1 (Adjustable)	7	Feedback Pin. Receives the feedback voltage from an external resistive divider across the output.
VOUT1 (Fixed voltage)		Output Voltage Pin. An internal resistive divider divides the output voltage down for comparison to the internal reference voltage.
RUN1	8	Enable Pin. Minimum 1.2V to enable the device. Maximum 0.4V to shut down the device.
GND (Exposed pad)	9	Connect to GND.