

Flexible output range, low-power, 8-bit digital-to-analog converter

Description

The EPX001-0 is a low-power, 8-bit, voltage output DAC with a flexible output voltage range.

EPX001-0's flexible output range feature allows the DAC output voltage to span between two voltage references: VREF1 and VREF2, where VREF1 and VREF2 can vary from rail-to-rail. VREF1 and VREF2 can be generated internally with the 2-bit programmable internal references, or supplied externally.

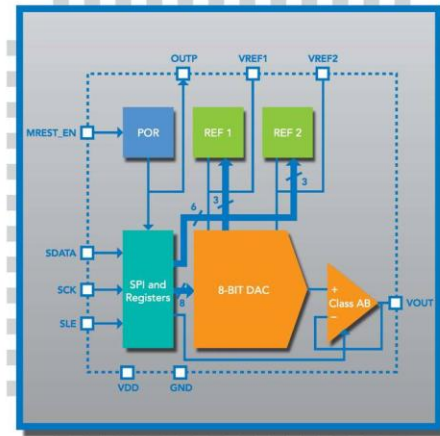
Features

- Two internal, 2-bit programmable internal references
- SPI Serial Interface
- Flexible output voltage range control
- Power down feature
- Power-on-Reset to zero output
- Guaranteed Monotonic

Application

- Process Control and Automation
- Control for Power Amplifiers
- Industrial Electronics

Functional Diagram



Contact Information

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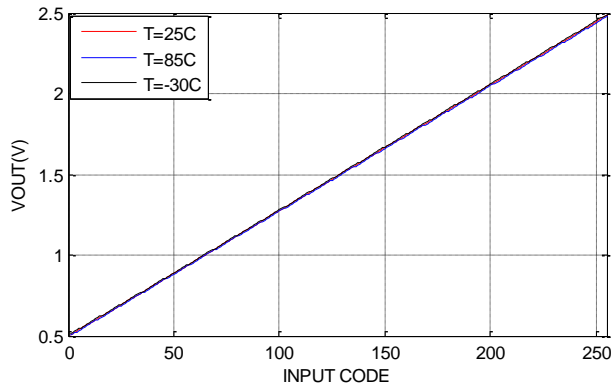
Measured Electric Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Units
VDD	Supply voltage		2.7	3	3.6	V
IDD	Supply current		300	320	560	μA
T _{ST}	Full-scale settling time		1.5	1.6	1.7	μS
P _C	Power consumption	Typical with 3.0V supply.		0.96		mW
INL	Integral non-linearity	From code 0 to code 255		0.15	0.45	LSB
DNL	Differential non-linearity	From code 0 to code 255	-0.05	0	0.05	LSB
VOUT	DAC output span		VREF1		VREF2	V
IOUT	Source/sink capability	Source/sink current capability keeping VOUT regulated error to within 1 LSB when VREF1 = 0.5V and VREF2 = 2.5V	5.7	6.1	6.2	mA
PSRR	Power supply rejection ratio	Measured at DC		105		dB
		Measured at 1kHz		65		dB
POR _{TH}	Power-on reset VDD threshold			2.5		V

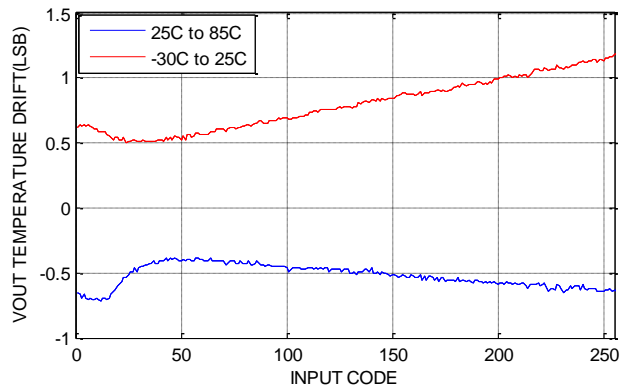
VREF1 can be set to GND, 0.25V, 0.5V, 0.75V, 1.0V

VREF2 can be set to 1.75V, 2.0V, 2.25V, 2.5V, VDD

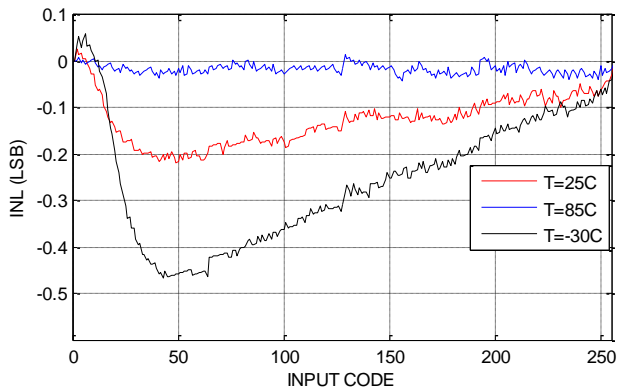
VOUT vs INPUT CODE



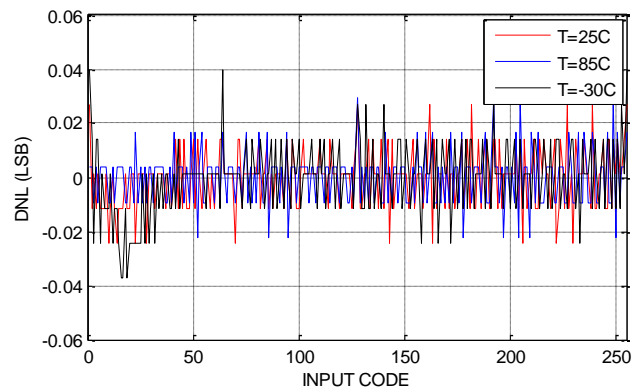
VOUT TEMPERATURE DRIFT vs INPUT CODE



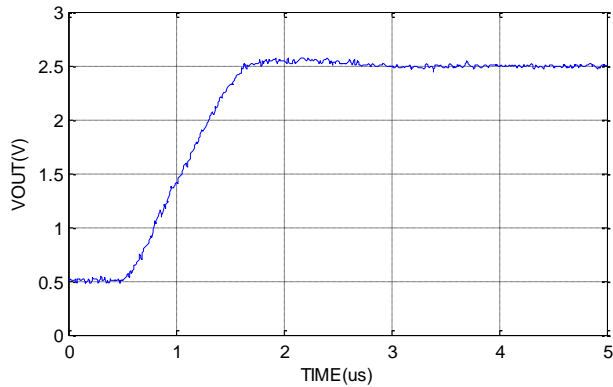
INL



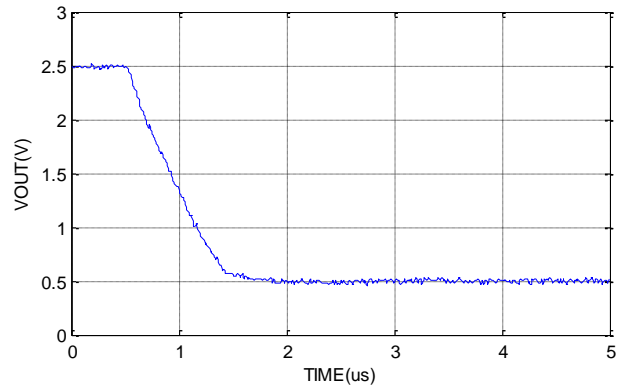
DNL



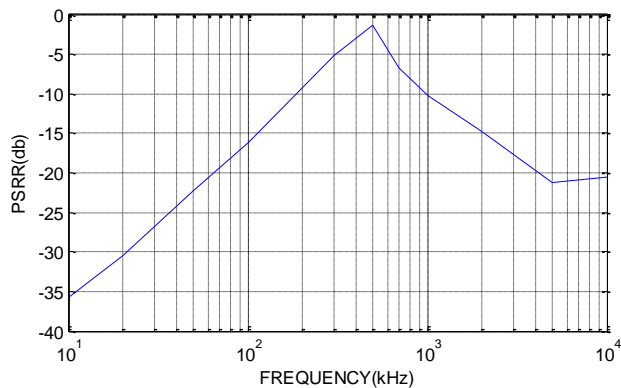
TRANSIENT RESPONSE, STEPPING FROM CODE 0 TO CODE 255



TRANSIENT RESPONSE, STEPPING FROM CODE 255 TO CODE 0



POWER SUPPLY REJECTION RATIO



OUTPUT SPECTRUM IN RESPONSE TO 50Hz INPUT SINEWAVE

