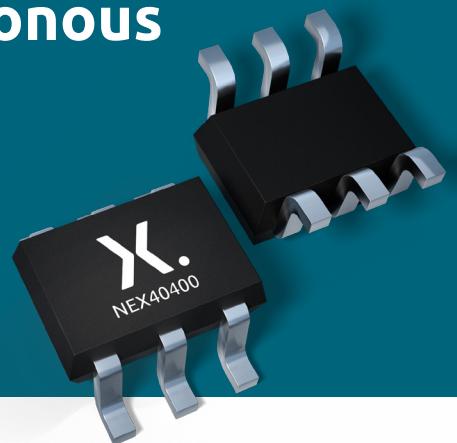


# NEX40400 wide $V_{IN}$ range synchronous step-down (buck) converter for Industrial power applications



## NEX40400 4.5 V to 40 V, 600 mA, synchronous step-down converter

Nexperia's first entry in the wide- $V_{IN}$  DCDC portfolio offers high efficiency, reliability, and versatility for a range of industrial and battery-powered applications. With a low quiescent current of 60  $\mu$ A, it ensures minimal power consumption in battery-powered systems while delivering up to 600 mA output. The converter is designed for optimal performance across varying load conditions, with frequency foldback reducing switching losses at light loads. Its wide input voltage range of 4.5 V to 40 V makes it suitable for diverse power step-down applications.

### Key technical features

- › 4.5 V to 40 V wide input voltage range
- › 600 mA continuous output current
- › 60  $\mu$ A standby, 0.3  $\mu$ A shutdown current
- › 1% output voltage accuracy
- › 1.05 MHz and 2.1 MHz fixed switching frequency
- › Pulse Frequency Modulation (PFM) option for light load efficiency
- › Frequency foldback for high conversion ratio and low drop-out applications
- › Force PWM (FPWM) option for small output ripple
- › Spread spectrum for better EMI
- › Start-up with pre-biased output
- › Precision enable
- › Internal compensation
- › Short circuit protection with Hiccup mode
- › SOT8061-1 (TSOT23-6) 6 leads, plastic surface mounted package

### Key benefits

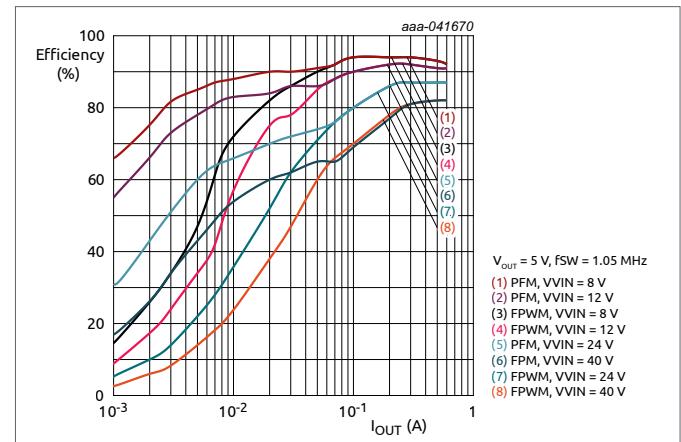
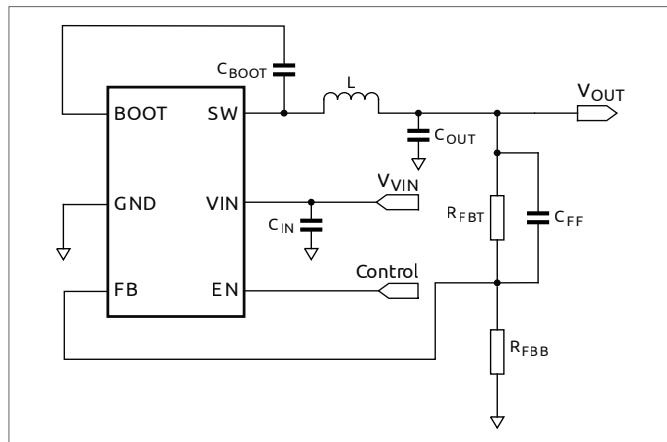
- › Wide  $V_{IN}$ , suitable for 12 V and 24 V rail input application
- › Minimized solution size
- › Low  $I_Q$ , both standby and shutdown, to extend battery run time
- › Easy to use, EMI friendly
- › Cool package, lower thermals

### Key applications

- › Industrial distributed power systems
- › Grid infrastructure: Smart E-meter
- › Battery powered home appliances

NEX40400 is a highly efficient, low quiescent current dc/dc buck converter suitable for industrial or battery-powered applications.

### Typical application



### Ordering Information

Type number	Description	Features									Package	
		$V_{in}$ range(V)	$V_{out}$ range (V)	$I_{out}$ (max) (A)	Operation Mode	Spread Spectrum (SS)	$I_q$	$I_s$	$f_{sw}$ (MHz)	Enable Pin	Package	Package size (L x W x H) mm
NEX40400ADAZ	4.5 V to 40 V 600 mA, synchronous step down converter	4.5-40	2.5-24	0.6	PFM	Off	60 $\mu\text{A}$	0.3 $\mu\text{A}$	2.1	Y	TSOP6	2.9 mm x 1.6 mm x 0.85 mm
NEX40400BDAZ	4.5 V to 40 V 600 mA, synchronous step down converter	4.5-40	2.5-24	0.6	FPWM	Off	60 $\mu\text{A}$	0.3 $\mu\text{A}$	2.1	Y	TSOP6	2.9 mm x 1.6 mm x 0.85 mm
NEX40400CDAZ	4.5 V to 40 V 600 mA, synchronous step down converter	4.5-40	2.5-24	0.6	FPWM	On	60 $\mu\text{A}$	0.3 $\mu\text{A}$	2.1	Y	TSOP6	2.9 mm x 1.6 mm x 0.85 mm
NEX40400DDAZ	4.5 V to 40 V 600 mA, synchronous step down converter	4.5-40	2.5-24	0.6	PFM	Off	60 $\mu\text{A}$	0.3 $\mu\text{A}$	1.05	Y	TSOP6	2.9 mm x 1.6 mm x 0.85 mm
NEX40400EDAZ	4.5 V to 40 V 600 mA, synchronous step down converter	4.5-40	2.5-24	0.6	FPWM	Off	60 $\mu\text{A}$	0.3 $\mu\text{A}$	1.05	Y	TSOP6	2.9 mm x 1.6 mm x 0.85 mm
NEX40400FDAZ	4.5 V to 40 V 600 mA, synchronous step down converter	4.5-40	2.5-24	0.6	FPWM	On	60 $\mu\text{A}$	0.3 $\mu\text{A}$	1.05	Y	TSOP6	2.9 mm x 1.6 mm x 0.85 mm

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