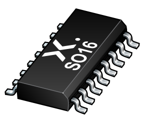


NEX82016

Multi-mode digital LLC controller

Rev. 1 — 11 July 2025 **Product data sheet**

1. General description

NEX82016 is a highly integrated and high-performance digital-analog hybrid LLC controller. It operates in multi-mode conditions, and works together with the dual channel SR controller NEX81915/6 to achieve an efficient and reliable power supply. This makes NEX82016 suitable for medium to high power isolated power supply applications.

NEX82016 has been optimized to simplify the overall design and maximize LLC performance. Advanced multiple mode control allows for independent configuration of the working status of each mode. Skip mode during light load reduces the switching loss. Adjustable dead time reduces conduction loss. Burst mode control and ultra-low static current maximize the ultra-light load efficiency and reduce standby power consumption. Efficiency can be improved across the entire load range.

NEX82016 adopts a current mode control architecture with good loop stability. Open register configuration allows for flexible configuration of various control and protection parameters, with a few peripheral components and easy design. It integrates a half-bridge drive module, capable of directly driving LLC bridge MOSFETs. In addition, NEX82016 has built-in high-voltage start-up function and X-cap discharge function, effectively simplifying peripheral components and reducing the total BOM cost of the power supply.

2. Features and benefits

- Integrates high-voltage start-up and X-cap discharge functions, with simple peripheral circuits
- Integrates a half-bridge driver, supporting a maximum frequency of 600 kHz
- High-performance digital-analog hybrid control
- Flexible configuration of various control and protection parameters
- Ultra high efficiency across the entire load range
- Out of audible noises at all operating modes
- Brown-in/brown-out protection
- Overcurrent protection (OCP)
- Overpower protection (OPP)
- Capacitive Mode Regulation (CMR)
- Short-circuit protection (SCP)
- Overvoltage protection (OVP)
- Internal and external overtemperature protection (OTP)
- Available in SO16 package

3. Applications

- Desktop and laptop adapters
- TV and monitor power supplies
- LED drivers
- AC-DC power sources

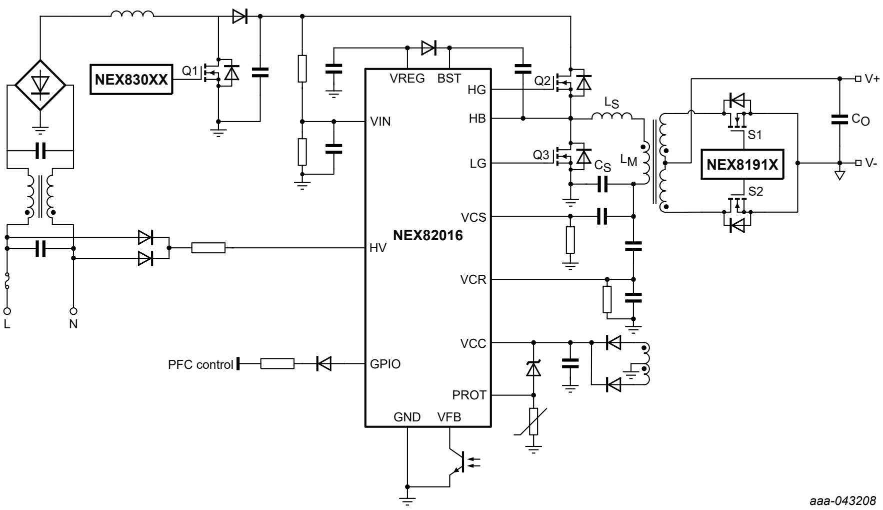


Fig. 1. Typical application circuit

nexperia

4. Ordering information

Table 1. Ordering information

Type number	Package			
	Temperature range (T_j)	Name	Description	Version
NEX82016D	-40 °C to 125 °C	SO16	plastic small outline package; 16 leads; body width 3.9 mm	SOT109-1

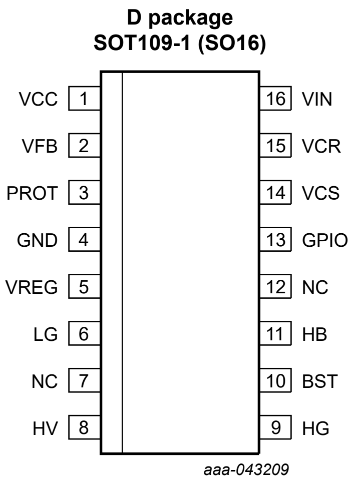
5. Marking

Table 2. Marking code

Type number	Marking code
NEX82016D	NEX82016

6. Pinning information

6.1. Pinning configuration



6.2. Pin description

Symbol	Pin	Description
VCC	1	IC power supply pin, the output of the internal HV start-up current source, also acts as the input of the auxiliary power supply
VFB	2	closed-loop feedback input
PROT	3	output overvoltage protection, and can also be used for overtemperature protection by connecting a NTC resistor
GND	4	ground terminal
VREG	5	internal voltage regulator output, as the LG power supply
LG	6	LLC low-side MOSFET gate driver output
NC	7, 12	not connected
HV	8	high voltage start pin, charging the VCC when starting; discharges the X-cap when the AC power is off
HG	9	LLC high-side MOSFET gate driver output
BST	10	HG power supply; connect to external bootstrap capacitor and diode
HB	11	the midpoint of the half-bridge and low-level reference for high-side driver
GPIO	13	can be used for PFC control
VCS	14	LLC current sense input; externally connected to the resonant current sense resistor
VCR	15	LLC capacitor voltage sense input; externally connected to divider across LLC capacitor
VIN	16	bus voltage detection; BI/BO control

7. Limiting values

Table 3. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).[1]

Symbol	Parameter	Conditions	Min	Max	Unit
V_{HV}	voltage on pin HV	I_{HV} < 50 µA	-0.3	700.0	V
I_{HV}	current on pin HV		-	20	mA
V_{BST}	HG power supply		V_{HB}	V_{HB} +14	V
V_{HB}	voltage on pin HB	DC	-3	700	V
		t < 1 µs	-14	-	V
V_{CC}	IC power supply voltage		-0.3	36.0	V
V_{REG}	voltage on pin VREG		-0.3	14.0	V
V_{HG}	MOSFET driver voltage	built-in upper MOSFET drive	V_{HB} - 0.3	V_{BS} + 0.3	V
V_{LG}	MOSFET driver voltage	built-in lower MOSFET drive	-0.3	20.0	V
V_{FB}, V_{PROT}, V_{IN}, V_{GPIO}	voltage on pin (VFB, PROT, VIN, GPIO)		-0.3	6.5	V
V_{CS}, V_{CR}	voltage on pin (VCS, VCR)		-6.5	6.5	V
P_{tot}	total power dissipation	T_{amb} = 75 °C	-	0.7	W
T_{stg}	storage temperature		-55	150	°C
T_j	operation junction temperature		-40	150	°C

[1] Stresses beyond those listed here may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under Section 10. Exposure to these limiting values for extended periods may affect device reliability.

8. ESD ratings

Table 4. ESD ratings

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{ESD}	electrostatic discharge voltage	HBM: ANSI/ESDA/JEDEC JS-001 class 1C; pin HV, BST, HG and HB	-2000	-	2000	V
		HBM: ANSI/ESDA/JEDEC JS-001 class 1C; other pins	-1500	-	1500	V
		CDM: ANSI/ESDA/JEDEC JS-002 class C2a	-500	-	500	V

9. Thermal characteristics

Table 5. Thermal characteristics

Symbol	Parameter	SOT109-1	Unit
$R_{\Theta JA}$	junction-to-ambient thermal resistance	108	°C/W

10. Recommended operating conditions

Table 6. Recommended operating conditions

Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}	DC supply voltage		0	33	V
V_{FB}, V_{PROT}, V_{IN}, V_{GPIO}	voltage on pin (VFB, PROT, VIN, GPIO)		-0.3	5.0	V
V_{CS}, V_{CR}	voltage on pin (VCS, VCR)		-5	5	V
T_j	operation junction temperature		-40	125	°C

11. Electrical characteristics

Table 7. Electrical characteristics

Where V_{CC} = 0 V to 33 V; typical values are measured at V_{CC} = 24 V; T_j = 25 °C (unless otherwise noted).

Symbol	Parameter	Conditions	T_j = -40 °C to 125 °C			Unit
			Min	Typ	Max	
Power supply pin (VCC)						
V_{CC_ON}	VCC on threshold voltage		16.1	18.2	19.6	V
V_{CC_SYSON}	system starting voltage on VCC		21.0	22.5	24.0	V
V_{CC_low}	low voltage on VCC	tracks with V_{CC_OFF}	-	12.5	-	V
V_{CC_OFF}	VCC off threshold voltage		11.3	12.4	12.7	V
V_{CC_RST}	VCC pin reset voltage		5.0	5.5	6.0	V
V_{CC_SCP}	short-circuit voltage threshold on pin VCC		1.8	1.9	2.0	V
I_{CC_normal}	operating current on pin VCC	f_{SW} = 100 kHz; HG = LG = NC	-	5.5	-	mA
I_{CC_burst}	supply current at burst mode on pin VCC		-	1.5	-	mA
High voltage starting pin (HV)						
V_{HV_ON}	current source activated threshold voltage		-	40	-	V
I_{HV2}	current limit on pin HV	$V_{CC} > V_{CC\_SCP}$	10	12	14	mA
I_{HV1}	current limit on pin HV	$V_{CC} < V_{CC\_SCP}$	0.40	0.85	1.30	mA
I_{HV_OFF}	off-state current on HV pin	V_{HV} = 400 V; V_{CC} = 24 V	6	8	10	µA
X-cap discharge function (HV)						
$t_{line\_removal}$	AC input disconnect time		-	96	-	ms
$t_{line\_discharge}$	discharge time		-	32	-	ms
t_{line_detect}	detection time		-	32	-	ms
$N_{line\_discharge}$	discharge times	ends the discharge after 8 times	-	8	-	time
Internal voltage regulator output pin (VREG)						
V_{REG}	regulation voltage on pin VREG	V_{CC} = 24 V; I_{CC} = 50 mA	10.8	11.3	11.8	V
V_{REG_UVP}	undervoltage threshold on pin VREG		9.0	9.2	9.5	V
High-side driver supply pin (BST)						
V_{BST_OFF}	BST pin undervoltage threshold	V_{BST} - V_{HB}	6.2	6.8	7.4	V

Symbol	Parameter	Conditions	T_j = -40 °C to 125 °C			Unit
			Min	Typ	Max	
I_{BST_IQ}	BST quiescent current		-	-	28	µA
I_{BST}	supply current on BST		-	-	520	µA
Resonant capacitor voltage detection pin (VCR)						
V_{slop_ramp}	V_{CR} slope compensation	programmable; in 8 steps; 30 mV/µs	30	60	240	mV/µs
-	V_{CR} slope compensation accuracy	60 mV	58.2	60.0	61.8	mV/µs
Resonator current detection pin (VCS)						
V_{OCP}	overcurrent protection voltage	positive threshold	1.44	1.50	1.56	V
		negative threshold	-1.62	-1.50	-1.38	V
$V_{polarity}$	voltage threshold for current polarity	positive; in 8 steps; 20 mV/step	20	-	160	mV
		negative; in 8 steps; -20 mV/step	-160	-	-20	mV
$V_{polarity+}$	tolerance of voltage threshold for current polarity		35	40	85	mV
$V_{polarity-}$			-60	-40	-20	mV
V_{CS_zero}	current zero-crossing threshold		-30	0	30	mV
Closed-loop feedback input pin (VFB)						
V_{FB}	voltage on pin VFB		3.24	3.30	3.36	V
V_{FB_OFFSET}	internal bias voltage on pin VFB		0.50	0.51	0.52	V
I_{FB}	current on pin VFB		80	82	84	µA
R_{FB}	internal pull-up resistance on pin VFB		38	40	43	kΩ
Drive pin (LG and HG)						
I_{source_HG}	source current on pin HG		-	-1	-	A
I_{source_LG}	source current on pin LG		-	-1	-	A
$I_{\_sink\_HG}$	sink current on the HG pin		-	1.5	-	A
$I_{\_sink\_LG}$	sink current on the LG pin		-	1.5	-	A
Protection pin (PROT)						
V_{OVP}	overvoltage protection voltage	the voltage is higher than this threshold	2.40	2.50	2.60	V
V_{OTP}	external overtemperature protection	the voltage is lower than this threshold	0.76	0.80	0.84	V
I_{OTP}	source current for external OTP		78.4	80.0	81.6	µA
Universal IO pin (GPIO)						
V_{OH}	output high level		4.5	-	5.8	V
V_{OL}	output low level		0	-	0.2	V
Input protection pin (VIN)						
V_{BI}	brown-in threshold	step = 0.05 V	2.10	-	2.45	V
V_{BO}	brown-out threshold		1.70	-	2.05	V
IC internal overtemperature protection						
T_{OTP}	overtemperature protection		-	150	-	°C

12. Detailed description

12.1. Overview

NEX82016 is a digital-analog hybrid LLC controller for high-efficiency resonant power supplies. Together with the NEX8308X PFC controller and the NEX81915/6 dual SR controller, a complete resonant power supply can be built, which is easy to design and has a very low component count.

This power supply meets the efficiency regulations of Energy Star Level VI, the Department of Energy (DoE), the Eco-design directive of the European Union, the European Code of Conduct (CoC) Tier 2 external power supply standards, and other guidelines. It can be used with any power supplies with low power consumption requirements.

12.2. Functional block diagram

The NEX82016 functional block diagram is shown in Fig. 2.

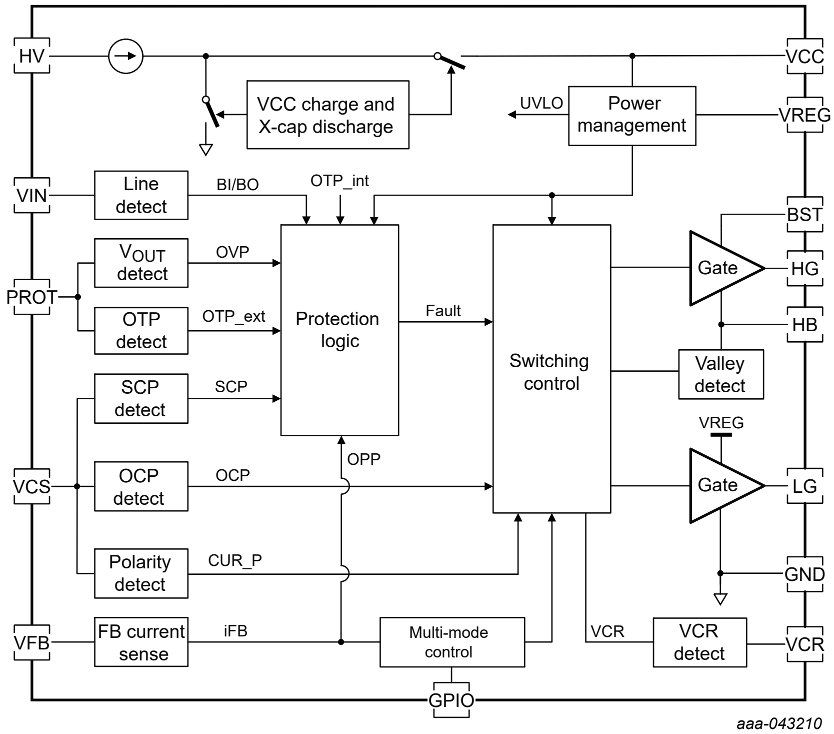


Fig. 2. Functional block diagram

12.3. Feature description

12.3.1. Supply voltage

NEX82016 includes:

- A high-voltage supply pin for start-up (HV)
- A general supply to be connected to an external auxiliary winding (VCC)
- An accurate regulated voltage (VREG)
- A floating supply for the high-side driver (BST)

12.3.1.1. Start-up and supply voltage (HV, VCC)

The startup process of NEX82016 is shown in Fig. 3. The HV pin can be connected to the output voltage of a PFC or AC input via an external resistor. Internally, a high-voltage series switch is located between the HV and VCC pins. The capacitor on VCC is charged via the HV pin if the V_{HV} is greater than V_{HV_ON}, typically 40 V.

To prevent the IC from being damaged by excessive power consumption due to VCC short to GND during startup:

- The charging current of the high-voltage current source is limited to I_{HV1} when the V_{CC} is less than V_{CC_SCP}.
- When the V_{CC} is greater than V_{CC_SCP}, the charging current of the high-voltage current source is I_{HV2}, and the V_{CC} rises rapidly.
- When the V_{CC} exceeds V_{CC_ON}, typically 18.2 V, the high-voltage current source is turned off, UVLO turns to high level, and the chip begins to detect the input voltage. During the detection period, the V_{CC} is charged and discharged back and forth between V_{CC_OFF} and V_{CC_ON}.
  - V_{CC_OFF}: V_{CC} is charged.
  - V_{CC_ON}: V_{CC} is discharged.
- When the V_{IN} is greater than the brown-in threshold V_{BI} and the duration exceeds t_{filter_BI}, the BI/BO signal becomes high, and the high-voltage current source is turned on to charge the capacitor on VCC until the V_{CC} reaches V_{CC_SYSON}, typically 22.5 V. The IC starts to output the driving signal, at the same time, the high-voltage current source is turned off.

The auxiliary winding of the transformer begins to take over the power supply of VCC as the output voltage is established. If the supply voltage of the auxiliary winding is insufficient, causing V_{CC} to drop to 12.5 V, the high-voltage current source will restart to charge the VCC capacitor. This prevents the V_{CC} from dropping further and triggering undervoltage protection. If the V_{CC} is less than 5.5 V, IC will be latched and can only be restarted after powered on again.

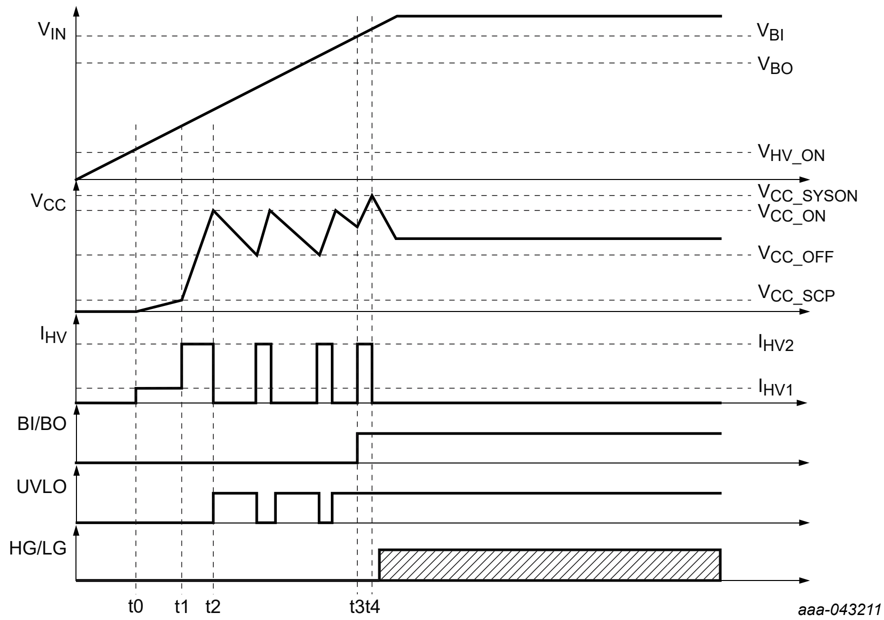


Fig. 3. Start-up sequence and normal operation

12.3.1.2. Regulated supply (VREG)

The capacitor at VREG can be charged and regulated at 11 V by the internal regulator from VCC. VREG can be used to:

- Supply the internal low-side driver
- Supply the internal high-side driver through a bootstrap circuit
- External reference voltage

To ensure that the external MOSFETs receive sufficient gate voltage, the voltage on the VREG pin must reach V_{REG_UVP}, typically 9.2 V, before the system starts switching. If the V_{REG} drops below this undervoltage protection level, the system restarts.

12.3.1.3. High-side driver floating supply (BST)

The bootstrap power supply circuit is shown in Fig. 4. The external bootstrap buffer capacitor C_{BST} supplies the high-side driver. The bootstrap capacitor is connected between the high-side driver supply, the BST pin, and the half-bridge node, HB. C_{BST} is charged from the VREG pin through the bootstrap diode D_{BST}. The high-side driver is off if the V_{BST} is lower than V_{BST_OFF}.

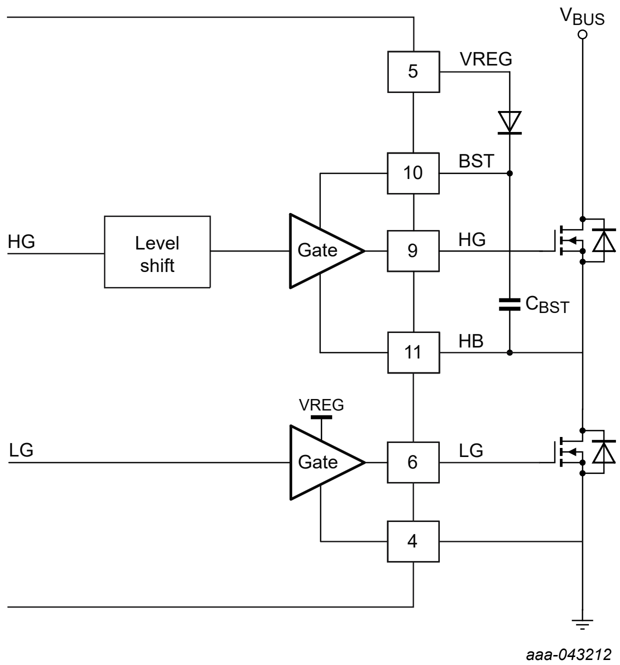


Fig. 4. Gate driver supply

12.3.2. Multi-mode control (VFB, VCR)

The system controls the output power by regulating the primary V_{Cs}. The input power of the resonant converter can be calculated with equation (1):

$$P_{in} = V_{BUS} \cdot I_{BUS} = V_{BUS} \cdot C_S \cdot \Delta V_{Cs} \cdot f_{SW} \quad (1)$$

ΔV_{Cs} is the voltage variation on the resonant capacitor.

P_{in} can be adjusted by changing the voltage variation on the primary side resonant capacitor.

$$P_{out} = V_o \cdot I_o = P_{in} \cdot \eta \quad (2)$$

η is transfer efficiency.

P_{out} is related to P_{in}, which can also be adjusted by ΔV_{Cs}.

$$I_o = \frac{V_{BUS}}{V_o} \cdot C_s \cdot \Delta V_{Cs} \cdot f_{SW} \cdot \eta \qquad (3)$$

I_O can be calculated with equation (3). When the system is regulated and the output voltage is stabilized, a small change in ΔV_{Cs} corresponds to a small change in the output current.

When the high-side switch is on, the primary side current flows through the transformer and the resonant capacitor C_S. Half of the energy provided by the input is transferred to the output. The other half charges the resonant capacitor C_S. The voltage across the resonant capacitor increases.

When the high side switch is off and the low side switch is on, the energy stored in the resonant capacitor C_S is transferred to the output and its voltage decreases. In this way, a linear relationship can be seen between the growth of the resonant capacitor voltage and the output power.

A secondary TL431 circuitry in combination with an optocoupler connected to the primary VFB pin continuously regulates the output voltage. The heavier the output load, the smaller the optocoupler current, higher V_{CR_ref} and lower switching frequency.

V_{CR} is the divided V_{Cs} voltage, when it exceeds V_{CR_ref}, the high-side MOSFET turns off, and the low-side MOSFET turns on after a configured dead time. When V_{CR} is lower than $-V_{CR\_ref}$, the low-side MOSFET turns off, and the high-side MOSFET turns on after a configured dead time. The two MOSFETs conduct symmetrically within one switching cycle as shown in Fig. 5.

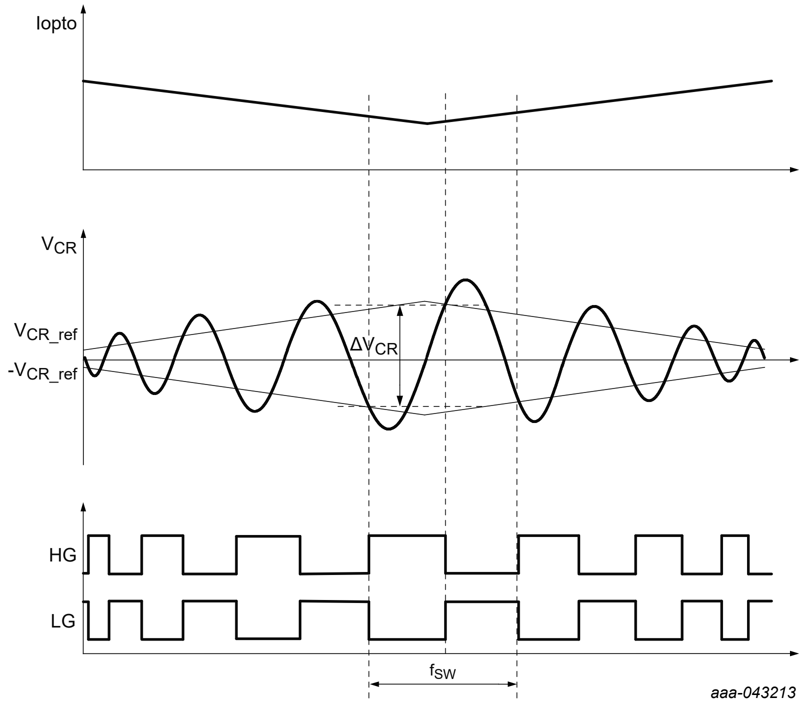


Fig. 5. Timing diagram of the regulation loop

NEX82016 adopts different control modes under different load conditions as shown in Fig. 6.

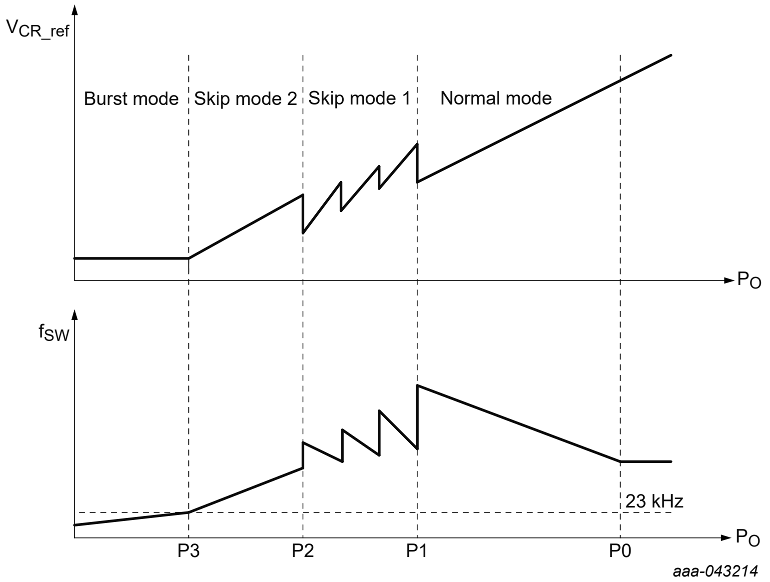


Fig. 6. Multi-mode V_{CR_ref} and frequency curve

The IC operates in normal mode at high load, the switching frequency decreases as the load increases. In extremely heavy load conditions, the minimum switching frequency can be clamped by limiting the maximum turn on time of the IC, to prevent the system temperature from rising too high.

At light loads, the operating frequency of a resonant converter increases. As a result, magnetization and switching losses increase. For this reason, the efficiency of a resonant converter drops at light loads. A newly introduced multi-mode ensures high efficiency at low loads.

When the output power drops to P1 level, the system enters skip mode 1. When the output power drops to P2 level, the system enters skip mode 2. The system continues switching for several cycles and switching off for a period within a skip cycle as shown in Fig. 7. Switch mode parameters, such as switching cycles, threshold voltage and filter time to enter or exit skip mode, valley detection method and numbers of valleys, can be enabled and configured separately. To ensure a constant output power level, it increases the energy per cycle at the same time. The result is a decrease in frequency and switching losses reduction.

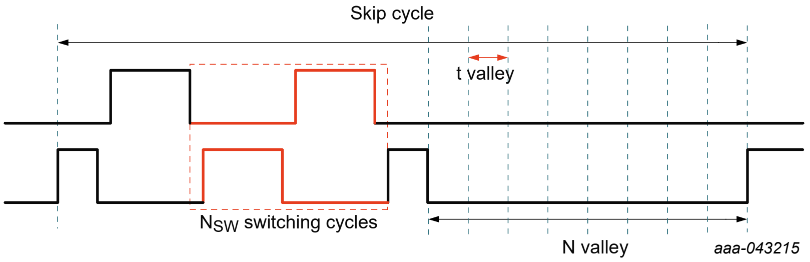


Fig. 7. Skip mode waveform

When the output power drops to P3 level, the skip cycle duration is extended to typically 43 µs, and the system enters burst mode to avoid the switching frequency entering the audible noise range.

12.3.3. Resonant current detection (VCS)

The resonant current of a tank circuit is monitored by detecting the voltage across a sense resistor which is in series with the shunt capacitor of the resonant capacitor C_S. The purposes of resonant current detection are as follows:

1. Capacitive mode detection: There are two comparators inside the IC that detect the zero-crossing state of positive and negative currents respectively. The threshold voltage V_{CMR} ranges from 20 mV to 160 mV and is divided into 8 levels on average, which can be selected according to applications.
2. Overcurrent protection: The OCP threshold is 1.5 V.

3. Zero-crossing detection: When the system operates in skip mode and the switch mode is set to L-H-L-H-IDLE, the last high-side MOSFET will be turned off when the resonant current is crossing zero.

12.3.4. Dead zone regulation (HB)

To avoid cross-conduction of the high and low-side MOSFETs, there needs to be a certain dead time between the drivers of the high and low-side. Customers can configure the dead time through the GUI interface according to applications.

12.3.5. Protection control

NEX82016 has comprehensive protections to ensure the reliability of the system as shown in Table 8, such as brown-in/ brown-out protection, overpower protection (OPP), overcurrent protection (OCP), short-circuit protection (SCP), overvoltage protection (OVP), overtemperature protection (OTP), and capacitive mode regulation (CMR). The protection method, restart time and number of restarts of OPP, SCP, OVP, and OTP can be configured independently.

Table 8. Protection modes

Protection	Notes	Mode
BI/BO	input brown-in/brown-out	real-time protection
OPP	overpower protection	retry, hiccup, latch
CMR	capacitive mode regulation	cycle-by-cycle
OCP	overcurrent protection	cycle-by-cycle
SCP	output short-circuit protection	retry, hiccup, latch
OVP	output overvoltage protection	retry, hiccup, latch
OTP	external overtemperature protection	retry, hiccup, latch

If the protection is configured as latch mode, the system can only resume after powered off and on again.

If the protection is configured as retry or hiccup mode, the system stops working for a period of time and then restarts.

12.3.5.1. Input brown-in/brown-out protection (VIN)

The VIN pin is connected to the DC bus (front stage PFC output) through a voltage divider resistor for brown-in/brown-out state detection.

If the V_{IN} is greater than the brown-in threshold voltage V_{BI} and the duration exceeds the GUI configured filtering time $t_{filter(BI)}$, NEX82016 starts switching once V_{CC} is higher than the V_{CC_SYSON} threshold.

If the V_{IN} is less than the brown-out threshold voltage V_{BO} and the duration exceeds the GUI configured filtering time $t_{filter(BO)}$, NEX82016 stops switching until brown-in is detected again.

12.3.5.2. Output overvoltage protection/external overtemperature protection (PROT)

Output overvoltage protection (OVP) and external overtemperature protection (OTP) can be configured on the PROT pin.

Fig. 8 shows the connection methods for different applications. The typical source current of the PROT pin is 80 µA. The overtemperature protection threshold voltage is 0.8 V, and OTP will be triggered once V_{PROT} is lower than this threshold. The overvoltage protection threshold voltage is 2.5 V, and OVP will be triggered once V_{PROT} is higher than this threshold.

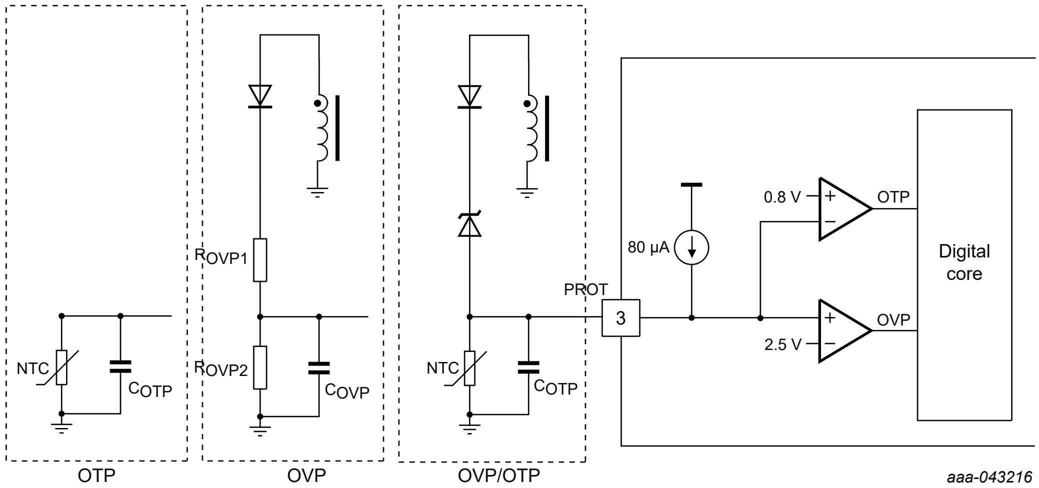


Fig. 8. External OVP and OTP connection

12.3.5.3. Overpower protection (OPP)

When the optocoupler current is lower than the set value for a certain period (filter time t_{filter_OPP}), the overpower protection is triggered.

12.3.5.4. Overcurrent protection (OCP)

The system measures the primary current continuously via a sense resistor connected to the VCS pin. If the measured voltage exceeds the overcurrent level (V_{OCP}), typically 1.5 V, the system stops switching and enters OCP mode.

12.3.5.5. Output short-circuit protection (SCP)

If OCP occurs, the internal counter will change to increase. If OCP does not occur for consecutive N_{SCP_RST} switching cycles, where N_{SCP_RST} is the reset counter value, the counter will be reset. If consecutive OCP times is greater than $N_{SCP\_trigger}$, where $N_{SCP\_trigger}$ is the trigger counter value, SCP will be triggered.

12.3.5.6. Capacitive mode regulation (CMR)

NEX82016 has Capacitive Mode Regulation (CMR) that ensures that the system is always operating in inductive mode.

At lower input voltage or higher output power and depending on the resonant design, the resonant current could have already approached zero before the capacitor voltage reaches the regulation level. When the resonant current has changed polarity before one switch is turned off and the other switch is turned on, hard switching occurs. This event is called capacitive mode.

To prevent the system from operating in capacitive mode, the system switches off the high-side/low-side switch when the resonant current approaches zero, the threshold of which can be configured, typically -40 mV and 40 mV.

12.3.5.7. X-cap discharge (HV)

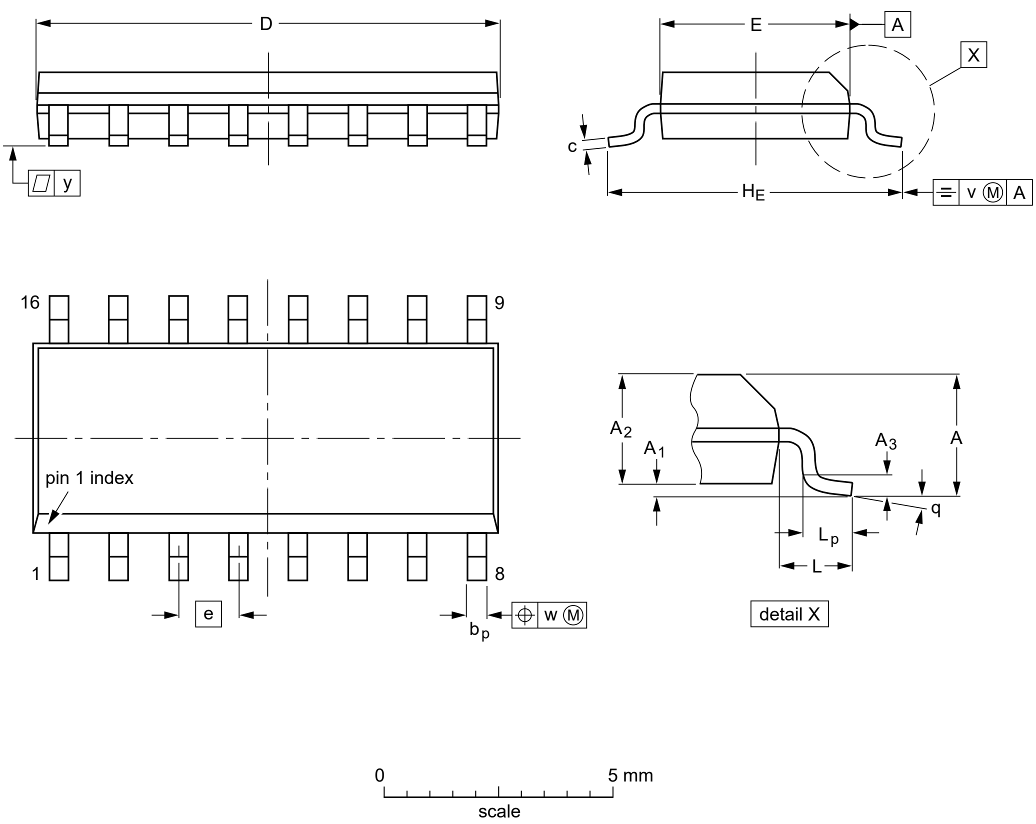
NEX82016 integrates an intelligent X-cap discharge circuit. The circuit will automatically discharge the X-cap when AC is off, while remaining off during normal operation. If the HV pin is connected to the PFC output, the X-cap discharge function needs to be turned off. The X-cap discharge function can be turned on or off through a GUI configuration.

12.3.6. System standby optimization (GPIO)

When the system operates in normal or skip mode, GPIO outputs low. When the system operates in burst mode, GPIO outputs high during the burst-off period while keeps low during the burst-on period. The maximum sink and source current of the pin GPIO is 10 mA. GPIO signal can be used to control the operation state of the previous PFC stage, such as shut down PFC, decrease the bus voltage by changing the feedback loop of PFC at light load to optimize the system standby power, etc.

13. Package outline

SO16: plastic small outline package; 16 leads; body width 3.9 mm **SOT109-1**



Dimensions (inch dimensions are derived from the original mm dimensions)

Unit		A	A_1	A_2	A_3	b_p	c	D(1)	E(1)	e	H_E	L	L_p	v	w	y	θ
mm	max	1.75	0.25			0.51	0.25	10.0	4.0		6.2		1.27				8°
	nom				0.25					1.27		1.05		0.2	0.25	0.1	
	min		0.10	1.25		0.31	0.10	9.8	3.8		5.8		0.4				0°
inches	max	0.069	0.010			0.020	0.010	0.394	0.16		0.244		0.05				8°
	nom				0.01					0.05		0.041		0.008	0.01	0.004	
	min		0.004	0.049		0.012	0.004	0.386	0.15		0.228		0.016				0°

Note

1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

sot109-1_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT109-1		MS-012				~~03-02-19~~ 23-10-27

Fig. 9. Package outline SOT109-1 (SO16)

14. Abbreviations

Acronym	Description
ANSI	American National Standards Institute
BI	Brown-in
BO	Brown-out
CDM	Charged Device Model
CMR	Capacitive Mode Regulation
DoE	Department of Energy
ESD	ElectroStatic Discharge
ESDA	ElectroStatic Discharge Association
GUI	Graphical User Interface
HBM	Human Body Model
IC	Integrated Circuit
IEC	International Electrotechnical Commission
JEDEC	Joint Electron Device Engineering Council
MOSFET	Metal-Oxide-Semiconductor Field-Effect Transistor
OCP	OverCurrent Protection
OPP	OverPower Protection
OTP	OverTemperature Protection
OVP	OverVoltage Protection
PFC	Power Factor Correction
SCP	Short-Circuit Protection
SR	Synchronous Rectifier
UVLO	Under-Voltage LockOut
X-cap	X-Capacitor

15. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
NEX82016 v.1	20250711	Product data sheet	-	-

16. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.
[2] The term 'short data sheet' is explained in section "Definitions".
[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at https://www.nexperia.com.

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