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SSL3401HN

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Low voltage Dimmable LED controller IC

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The SSL3401HN is a Switched Mode Power Supply (SMPS) controller IC. It operates in combination with a phase cut dimmer and a 12 V (AC or DC) low voltage electronic or magnetic transformer. It is designed to drive LED devices and include a dimmer conduction phase detector.

The chip includes a hysteretic controller for the power converter. It is most suitable for use with a linear LED current source. Two embedded Proportional-Integral (PI) controllers and a high resolution PWM generator, adjusted by the dimmer conduction phase, ensure excellent LED current stability for a dimming range from 100 % to less than 5 %. It also minimizes the power loss across the LED current source.

▷ Parametric search

Features and benefits

- Easy migration to existing lighting control infrastructure
- Support most available dimmers and low voltage transformation solutions
- Excellent stability of LED current
- Double PI controllers to enhance the line regulation of the LED current
- Optimized dimming curve for low voltage transformer compatibility
- Automatic supply frequency detection for seamless operation with 50 Hz, 60 Hz or DC sources
- Dimmer conduction angle detection
- Coil current limitation
- Temperature roll-back protection
- OverVoltage Protection (OVP)
- Power-On-Reset (POR)
- Shorted LED protection
- Open LED detection
- UnderVoltage LockOut (UVLO)

Quick ordering

SSL3401HN/1Y

Region [-- select your region]

Distributor   **In Stock**

OR: [Order samples]

Applications

- General LED lighting with various power requirements
- Dimmable 12 V MR16 and AR111 applications

▷ **Parametric search** all AC LED driver ICs, dimmable

All information on this product information page is subject to the subsequent disclaimers:

General product disclaimer

Quality and reliability disclaimer

Parametrics of this product

Symbol	Parameter	Conditions	Min	Typ/Nom	Max	Unit
$f_{sw(PWM)}$	PWM switching frequency			12.5		kHz
V_{DD}	supply voltage (3.3 V)		2.6	3.3	3.6	V
V_{mains}	mains voltage		100		230	V

Similar products

Package

Type number	Orderable part number	Ordering code (12NC)	Product status	Package	Packing	Marking
SSL3401HN/1	SSL3401HN/1Y	9353 018 28518	Development	SOT865-3 (HVQFN32)	Reel Dry Pack, SMD, 13"	Standard Marking

The variants in the table below are discontinued. See the table Discontinuation information at the bottom of this page for more information.

Type number	Orderable part number	Ordering code (12NC)	Product status	Package	Packing	Marking
SSL3401HN	SSL3401HNE	9353 021 69551	Withdrawn **Replacement product**	SOT865-3 (HVQFN32)	Tray Dry Pack, Bakeable, Single	Standard Marking

Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	DNC	do not connect		
2	RESET_N	reset if LOW		
3	DNC	do not connect		
4	DNC	do not connect		
5	DNC	do not connect		
6	VDD(IO)	3.3 V I/O supply voltage		
7	DNC	do not connect		
8	DNC	do not connect		
9	HYSTSET	comparator hysteresis level setting		
10	DNC	do not connect		
11	DNC	do not connect		
12	LOADPWM	output load control (input pin at rese		
13	ILATCHSETACT	input latching current setting control		
14	OTPSETACT	overtemperature setting control		
15	LEDPWM	LED current control (input pin at reset)		
16	DNC	do not connect		
17	ACMPP	analog comparator positive input		
18	ACMPREF	analog comparator reference voltage		
19	DNC	do not connect		
20	OVP	overvoltage protection sensing input		
21	DNC	do not connect		
22	PARAMSET	input latching current and OTP setting input		
23	DNC	do not connect		
24	DNC	do not connect		
25	DNC	do not connect		
26	FB	feedback loop input voltage		
27	DNC	do not connect		
28	LEDSDWN	LED current deep dimming control		
29	VDD	3.3 V supply voltage		
30	BSTDRVA	power MOSFET driver output		
31	BSTDRVB	power MOSFET driver output		
32	ACMPN	analog comparator negative input		
33	VSS	die pad ground terminal		

Package Version	Package Name	Package Description	Reference Codes	Issue Date
⇩ SOT865-3	HVQFN32	plastic thermal enhanced very thin quad flat package; no leads; 32 terminals; body 7 x 7 x 0.85 mm	MO-220 (JEDEC);	2009-02-05

Related documents

Reflow soldering
⇩ sot865-3_fr (pdf) (2009-10-08)

Discontinuation information

Type number	Ordering code (12NC)	Last-time buy date	Last-time delivery date	Replacement product	DN Notice	Status	Comments
SSL3401HN	935302169551				DN		

Quality, reliability & chemical content

Type number	Orderable part number	Chemical content	RoHS	Leadfree conversion date	RHF	IFR (FIT)	MTBF (hours)	MSL	MSL LF
SSL3401HN/1	SSL3401HN/1Y	Not available	EU/CN RoHS COMPLIANT ↗ Pb	Always Pb-free	D			3	3

The variants in the table below are discontinued. See the table Discontinuation information at the bottom of this page for more information.

Type number	Orderable part number	Chemical content	RoHS	Leadfree conversion date	RHF	IFR (FIT)	MTBF (hours)	MSL	MSL LF
SSL3401HN	SSL3401HNE	Not available	EU/CN RoHS COMPLIANT ↗ Pb	Always Pb-free	D			3	3

▶ Quality and reliability disclaimer

Discontinuation information

Type number	Ordering code (12NC)	Last-time buy date	Last-time delivery date	Replacement product	DN Notice	Status	Comments
SSL3401HN	935302169551				DN		

Ordering & availability

Type number	Ordering code (12NC)	Orderable part number	Region	Distributor	In stock	Order quantity	Inventory date	Buy online	Samples
SSL3401HN/1	9353 018 28518	SSL3401HN/1Y							not available

Sample
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