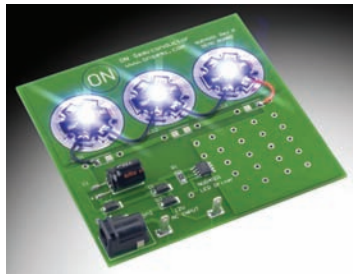


ON Semiconductor®



LED Driver Solutions

ON Semiconductor offers solutions for a wide range of LED applications whether run off an AC main or battery powered. With a broad portfolio of LED driver solutions, ON Semiconductor addresses everything from LCD backlighting, flashlights, wide DC-input range of applications, including automotive, solar powered, and commercial/landscape lighting powered from 12V DC/AC, to offline applications such as lighting ballasts and power factor correction solutions.



Features ▶

- Linear and switching topologies
- Wide-input DC-DC solutions to 40V
- Extended temperature range from -40°C to +125°C
- Optimized portable backlighting solutions
- Broad choice of packages

Benefits ▶

- Enhanced designer flexibility
- Suitable for automotive environment
- Robust and highly reliable
- Low passive parts count
- Demo boards and application notes available

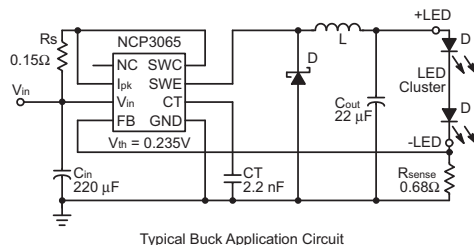
Applications ▶

- Backlighting (small to medium LCD panels)
- Flashlights (torch and camera flash)
- Transportation (interior/exterior lighting, displays, and marine)
- General lighting (architectural, landscape, streetlighting, task lighting, and low-voltage AC/DC)
- Signage (addressable and neon replacement)

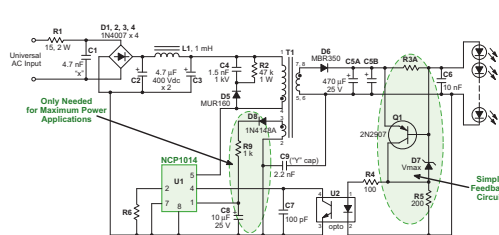
Product Specifications ▶												
Part Number	Type	Dimming Type	Number of LEDs/String	Number of Strings	Configuration	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Peak Efficiency (%)	Diagnostic Capabilities*	Interface	Markets
NCP3066	Boost/buck/SEPIC	PWM/analog	12	1	Series	3-40	40	1,200	89	TSD	Enable control	CL TR BL
NCP3065		PWM/analog	12	1	Series	3-40	40	1,200	89	TSD	-	CL TR BL
NCP/NCV3063		PWM/analog	12	1	Series	3-40	40	1,200	89	TSD	Enable control	CL TR BL
CAT4201	Buck	PWM/analog	8	1	Series	7-36	32	350	94	TSD	PWM/analog	CL TR SI
NCP1034		PWM/analog	20	1	Series	12-100	80V	Flexible/controller >1A	92	SS/OCP/UVLO	PWM	CL BL
NCP1013	Fixed frequency flyback	PWM/analog	-	1	Series	85-305 VAC	Depends on V _{IN}	5W-up to 1,000	83	TSD/OVP/SS/UVLO	-	CL SI
NCP1014		PWM/analog	-	1	Series	85-305 VAC	Depends on V _{IN}	8W-up to 1,000	83	TSD/OVP/SS/UVLO	-	CL SI
NCP1028		PWM/analog	-	1	Series	85-305 VAC	Depends on V _{IN}	15W-up to 1,000	83	TSD/OVP/SS/UVLO	-	CL SI
NCP1216		PWM/analog	-	1	Series	85-305 VAC	Depends on V _{IN}	Flexible/controller	90	OCP/UVLO/TSD	-	CL BL
NCP1351	Variable OFF time flyback	PWM/analog	-	1	Series	85-305 VAC	Depends on V _{IN}	Flexible/controller	90	OCP/UVLO/TSD/OPP	-	CL BL
NCP1607B	PFC boost or flyback	PWM/analog	-	1	Series	85-305 VAC	Depends on V _{IN}	Flexible/controller >1A	90	OVP/UVLO	PWM/analog	CL SI
CAT4016	Low drop out driver (LDO)	PWM	1	16	Parallel	3-5.5	7	100	-	TSD	Serial	SI
CAT4101	Linear	PWM	6	1	Series	3-5.5	25	1,000	-	TSD	PWM	CL FL
CAT4109		PWM	6	3	Parallel	3-5.5	25	175	-	TSD	PWM	CL BL SI
NUD4001		PWM/analog	8	1	Series	3.6-30 and 60V for load dump	27	500	-	-	Enable	CL TR BL SI
NUD4011		PWM/analog	50	1	Series	5-200	198	50	-	-	Enable	BL

MARKETS LEGEND CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION BL BACKLIGHTING SI SIGNAGE

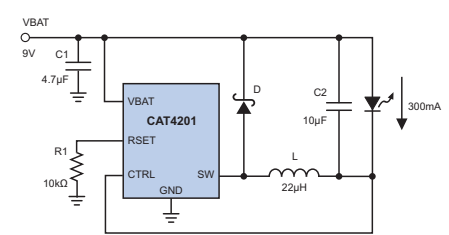
*Diagnostic capabilities: TSD: Thermal shutdown, OVP: Overvoltage protection, SS: Soft start, UVLO: Under voltage lock out, OCP: Overcurrent protection, OPP: Overpower protection



NCP3065 LED driver—buck configuration



NCP1014 configured as a constant-current isolated offline LED driver



1W step-down, inductor-based LED driver for multivolt (6V to 36V) systems

LED Driver Solutions for Handheld Applications

ON Semiconductor®



Portable applications require solutions that provide high efficiency, require minimal board space, and low height. ON Semiconductor offers LED driver solutions in linear, charge pump, and inductive DC-DC converter topologies for optimal space savings and inductive solutions for optimal power efficiency. In addition, ON Semiconductor offers a broad selection of high-current drivers to support flashlight and camera flash applications, and highly integrated lighting management ICs that support backlight of the display, keyboard, and color indicators.

Features ▶

- Linear, inductive, and charge pump solutions
- High efficiency
- Highly integrated solutions
- Ultra-thin micro package 0.55 mm
- Simple to use

Benefits ▶

- Enhanced designer flexibility
- Extended battery life
- Low overall parts count
- Thinner and smaller end products
- Demo boards and application notes available

Applications ▶

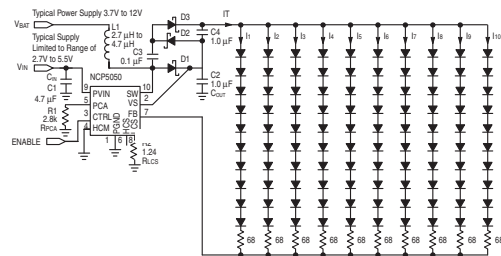
- Small and medium size LCD backlighting
- Keyboard backlighting
- Flashlights, torch, and headlamps
- Camera flash
- Medical instruments



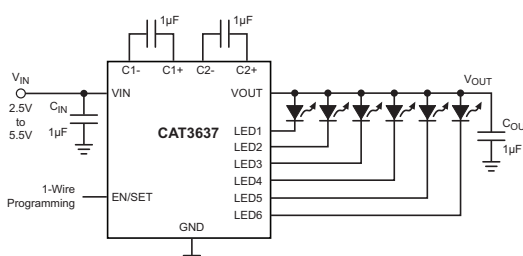
Product Specifications ▶												
Part Number	Type	Dimming Type	Number of LEDs/String	Number of Strings	Configuration	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Peak Efficiency (%)	Diagnostic Capabilities*	Interface	Markets
NCP1529A	Buck	PWM	1	1	Series	2.7-5.5	5.5	1,000	96	TSD/SCP/UVLO	PWM	FL
NCP5030	Buck-boost	PWM/analog	1	1	Series	2.7-5.5	5.5	Up to 900	94	OVP/TSD/UVLO	Enable	FL
CAT4106	Boost/linear	PWM	8	4	Parallel	3.0-5.5	36	175	-	TSD/OLP/SLP	PWM	BL
NCP1400A	Boost	PWM/analog	1	1	Series	0.8-5.0	5	100	89	SS	Enable	FL
NCP1406		PWM/analog	6	1	Series	1.8-5.5	25	500 mW (25 mA@25V)	85	TSD/UVLO/SS	Enable	BL FL
NCP1422		PWM/analog	1	1	Series	1.0-5.0	5	600	92	TSD/UVLO/SS	Enable	FL
NCP5050		PWM/analog	6	1	Series	2.7-5.5	22	Up to 600	90	Timeout/OVP/TSD	Enable	BL FL
NCP5890		PWM	8	1	Series	2.7-5.5	34	25	90	TSD/UVLO/OVP	I ² C	BL
NCP5005	Boost w/enhanced RFI immunity	PWM/analog	5	1	Series	2.7-5.5	21	1,000 mW (50 mA@20V)	90	OVP/TSD	Enable	BL
NCP5010	Boost w/integrated Schottky	PWM/analog	5	1	Series	2.7-5.5	22	500 mW (25 mA@20V)	84	OVP/TSD	Enable	BL
CAT3224	Super cap charge pump	-	1	2	Parallel	2.5-5.5	5.5	2,000	-	Timeout/TSD/OCV/OVP	PWM	FL
CAT3637	Charge pump	PWM	1	6	Parallel	2.5-5.5	7	30	92	TSD/OVM/SCP	1-wire	BL
NCP5602		I ² C	1	2	Parallel	2.7-5.5	5.5	30	88	OVP/TSD	I ² C	BL
NCP5603		PWM	1	1-10	Parallel	2.7-5.5	5.5	200	90	TSD/SCP	Enable	BL FL
CAT3200		PWM	1	1-6	Parallel	5	5.5	100	90	TSD	PWM	BL
NCP5608		PWM	1	8	Parallel	2.7-5.5	5.5	4@25/4@100	86	OVP/TSD	Enable	BL FL
NCP5612		S-wire link	1	2	Parallel	2.7-5.5	5.5	30	88	OVP/TSD	Enable/dim	BL
NCP5604A/B		PWM	1	4	Parallel	2.7-5.5	4.8	30	87	OVP/SCP	Enable	BL
NCP5623A		RGB charge pump	I ² C	1	3	Parallel	2.7-5.5	5.5	30	93	OVP/SCP	I ² C
NCP5623DT	Linear RGB	I ² C	1	3	Parallel	2.7-5.5	5.2	30	-	TSD/SCP/UVLO	I ² C	CL BL

MARKETS LEGEND CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION BL BACKLIGHTING SI SIGNAGE

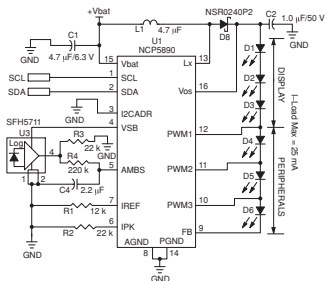
*Diagnostic capabilities: TSD: Thermal shutdown, UVLO: Under voltage lock out, SS: Soft start, OVP: Over voltage protection, SCP: Short circuit protection, SLP: Shorted LED protection, OLP: Open LED protection



NCP5050 drives 10 x 10 LED for backlighting medium-size LCD panel



CAT3637 schematic



NCP5890 typical schematic