

# Product Overview



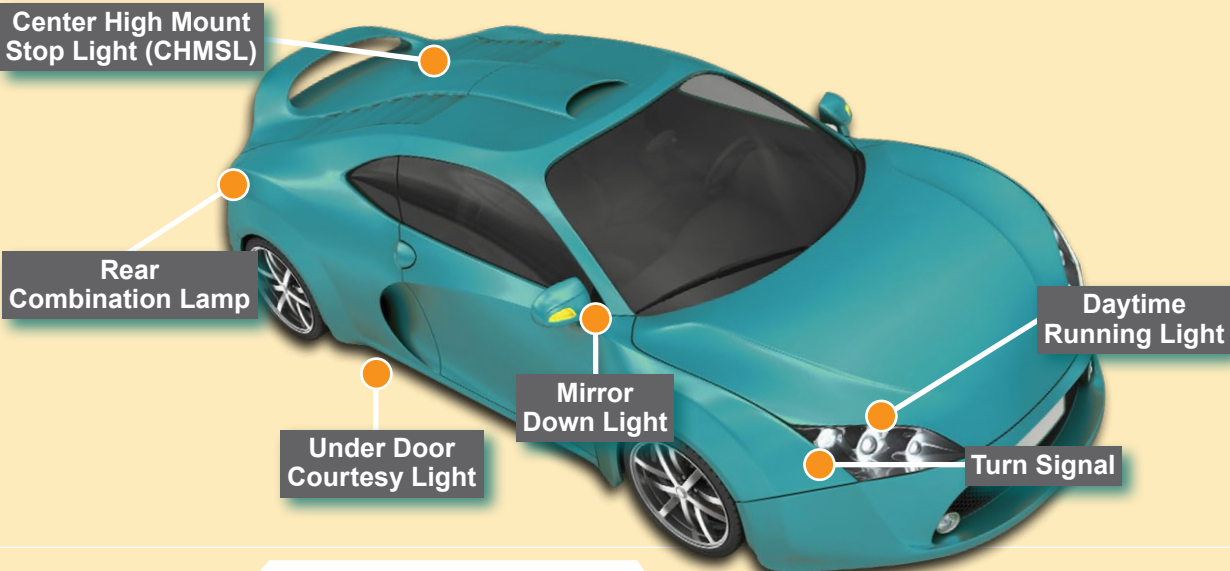
SEMTECH POWER MANAGEMENT

## Semtech Automotive Solutions: LED Lighting

### Interior LED Lighting



### Exterior LED Lighting



# Semtech Automotive Solutions: LCD Backlighting



## Rugged High Brightness LED Drivers

Semtech's SC446, SC441A and SC441C LED drivers power high brightness LEDs in interior and exterior automotive lighting applications: from turn signal and brake lights, to instrument cluster lighting, and LCD backlighting for navigation and infotainment.

**SC446**  
**3-Channel**

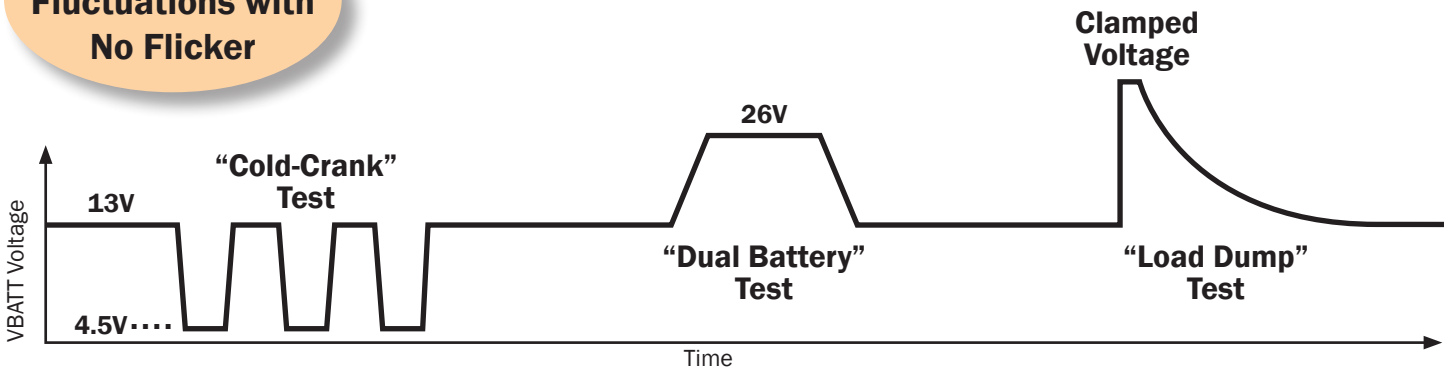
## SC446, SC441A, SC441C

- Wide input voltage range
- Thermally-enhanced TSSOP packaging
  - Low operating temperature and long life at high ambient conditions
  - 1mm pin spacing for no pin-to-pin shorts
  - Large thermal paddle for low  $R_{\theta(J-A)}$
- PWM dimming up to 50kHz
  - Eliminates audio noise

**SC441A/C**  
**4-Channel**

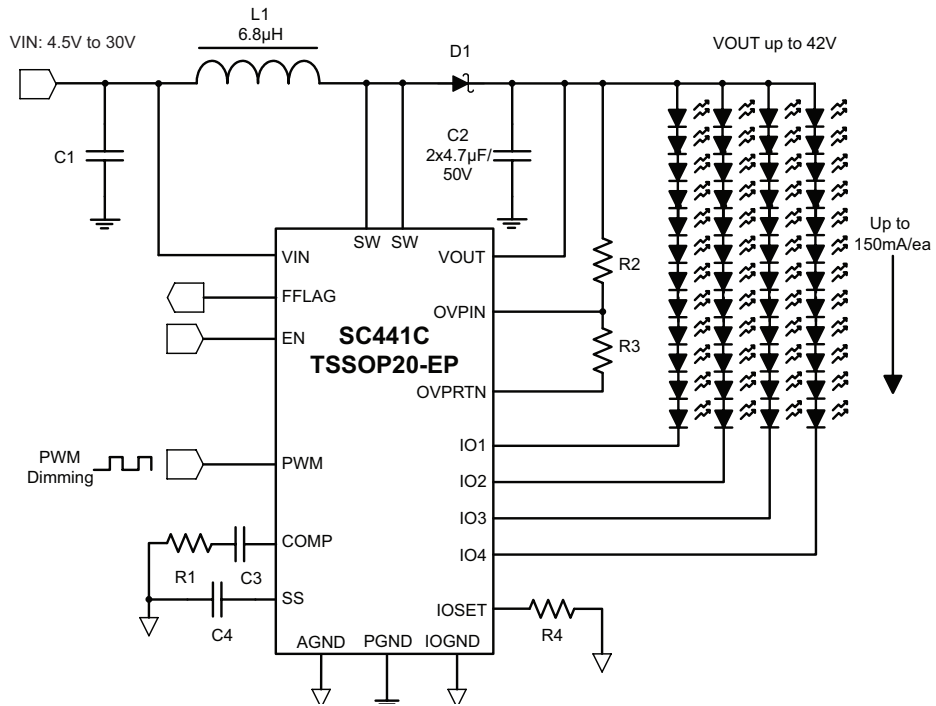


### Voltage Fluctuations with No Flicker

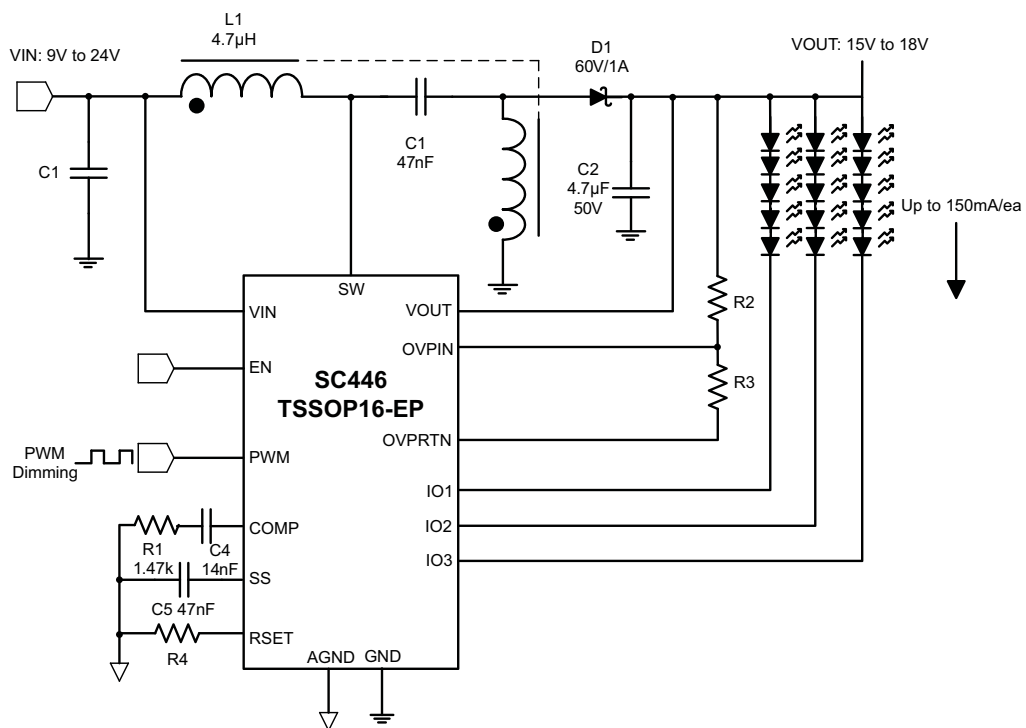


Part Number	VIN Range		Output Range	Number of HB LEDs	Auto-Grade AEC-Q100
	Operating	Abs Max			
SC441A	4.5 to 21V	25V	Up to 36V	Up to 40 @ 150mA/each	✓
SC441C	4.5 to 27V	30V	Up to 42V	Up to 48 @ 150mA/each	Planned
SC446	4.5 to 27V	30V	Up to 42V	Up to 36 @ 100mA/each	Planned

## Boost Survives Load Dump and Cold Crank



## SEPIC Provides High Efficiency when VIN Voltage is Near VOUT



## Semtech Automotive Solutions: Boost LED Drivers

Part Number	# LEDs	Total Current (mA)	Current (mA/S)	# LED Strings	# LEDs per String	VOUT (V)	VIN (V)			fsw (MHz)	Dimming	Package (footprint x H max)	Auto-Grade AEC-Q100
	Max	Max	Max	Max	Max	Max	Min	Max	Abs Max	Nom	Max freq.		
SC441A	40	600	150	4	10	36	4.5	21	25	0.7	PWM Up to 50kHz	TSSOP-20 EDP	✓
SC441C	48	600	150	4	12	42	4.5	27	30	0.7	PWM Up to 50kHz	TSSOP-20 EDP	Planned
SC446	36	300	100	3	12	42	4.5	27	30	0.7	PWM Up to 50kHz	TSSOP-16 EDP	Planned
SC442	120	300	30	10	12	42	4.5	21	25	0.5-1.0	PWM Up to 50kHz	MLPQ-UT-28 (4x4 x0.6mm)	
SC440A	72	180	30	6	12	42	4.5	27	30	0.8	PWM Up to 50kHz	ML PQ-24 (4x4 x1.0mm)	
SC443	36	90	30	3	12	42	4.5	27	30	0.2-1.2	PWM Up to 50kHz	MLPQ-UT-16 (3x3 x0.6mm)	
SC4540	10	30	30	1	10	38	2.8	12	20	0.8	PWM Up to 50kHz	MLPD-UL8 (2x2 x0.6mm)	
SC4509	5	30	N/A	1	5	20	2.7	10	20	1.2	PWM Up to 10kHz	MLPD-W8 (2x2 x0.8mm), SOT23-6	

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