

MAP3524

2-CH Quasi-Resonant Mode Buck Controller for LED Backlight

General Description

MAP3524 is a 2 channel quasi-resonant mode buck controller for LED backlight application. It operates at boundary conduction mode which provides better efficiency and lower EMI.

MAP3524 features ±2% current sensing(CS) voltage accuracy and has dedicated Independent analog dimming input up to 3.3V. It can be powered from 8.5V ~ 18V supply.

MAP3524 provides MOSFET drain-source short detection for fault output, VCC over voltage protection (OVP) detection for fault output, current sense resistor short protection, short circuit protection (SCP) and VCC under voltage lockout (UVLO).

MAP3524 is available 20 leads SOIC with Halogen-free (fully RoHS compliant).



Features

- 8.5V to 18V Input Voltage Range
- Quasi-Resonant Mode
- LED Current Compensation Function
- Independent Direct PWM Dimming Input
- ±2% Current Sensing Voltage Accuracy
- Fault Output (FLT pin)
- MOSFET Drain-Source Short Detection
- VCC Over Voltage Protection Detection
- Short Circuit Protection
- Current Sense Resistor Short Protection
- VCC Under Voltage Lock Out
- 20 Leads SOIC Package with Halogen-free

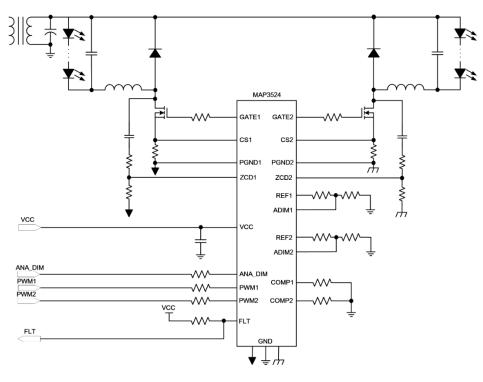
Applications

- High Brightness white LED backlighting for LCD TVs
- General LED lighting applications

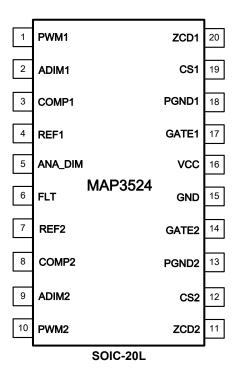
Ordering Information

Part Number	Top Marking	Ambient Temperature Range	Package	RoHS Status
MAP3524SIRH	MAP3524	-40°C to +85°C	20Leads SOIC	Halogen Free

Typical Application



Pin Configuration



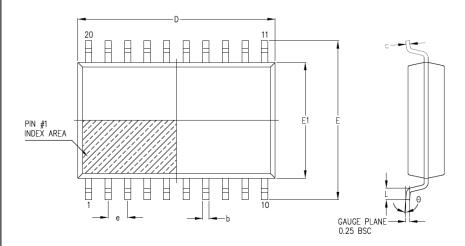
Pin Description

Pin	Name	Description	
1	PWM1	PWM Dimming for Ch1	
2 ADIM1 Inte		Internal Analog Dimming for Ch1	
3	COMP1	LED Current Accuracy Compensation for Ch1	
4	REF1	ADIM Buffer output for Ch1	
5	ANA_DIM	External Analog Dimming input	
6	FLT	Fault output	
7	REF2	ADIM Buffer output for Ch2	
8	COMP2	LED Current Accuracy Compensation for Ch2	
9	ADIM2 Internal Analog Dimming for Ch2		
10	PWM2	PWM Dimming for Ch2	
11	ZCD2 Zero Current Detection for Ch2		
12	CS2	Current Sense for Ch2	
13	PGND2	Power Ground for Ch2	
14	GATE2	GATE drive output for Ch2	
15	GND	Ground	
16	VCC	CC Power supply input	
17	GATE1 GATE drive output for Ch1		
18	PGND1	PGND1 Power Ground for Ch1	
19	CS1	Current Sense for Ch1	
20	ZCD1	Zero Current Detection for Ch1	

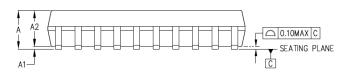
Note 1: Connect external resistor to PGNDx to sense the external power MOSFETx source current as shown in typical application

Functional Block Diagram VCC ANA_DIM ADIM REF2 LDO REF1 Enable COMP1 Current PWM1 GATE1 ZCD1 GATE DRIVER PGND1 S ADIM1 Average-Mode Q R Control Logic FLT CS1 MOSFET DS Short LEB COMP2 Current Compensation Enable PWM2 GATE2 ZCD2 GATE DRIVER PGND2 ADIM2 Average-Mode Control Logic Q CS2 FLT MOSFET DS Short LEB GND

Physical Dimensions



Symbol	Dimension (mm)			
Symbol	Min	Nom	Max	
Α	-	_	2.65	
A1	0.10	-	0.30	
A2	2.05	-	-	
b	0.31	-	0.51	
С	0.10	_	0.33	
D				
E				
E1	7.50 BSC			
е	1.27 BSC			
L	0.40	_	1.27	
Θ	0,	-	8°	



20 Leads SOIC

NOTES:

- Reference JEDEC MS-013(AC)
 Package length and width do not include mold flash, protrusions or gate burrs.
- 3. The configuration of PIN #1 identifier/chamfer feature

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