

HIGH CURRENT – 1.5A - POWER LED DRIVER

GENERAL DESCRIPTION

The BSC74K9135 is a PWM power LED driver which has the capability to drive an output current from a few mA up to 1.5A. It is ideal for high brightness power LED operating at high efficiency from 4V_{DC} to 40V_{DC} and up to 200KHz operating frequency by only 5 external components.

The BSC74K9135 device is ideal to the applications for high power LED related end products.

FEATURES

- High Level of Component Integration
 - Only 5 external components required
- Output driving current up to 1.5A
- 4V – 40V wide operation voltage range
- High efficiency
- ESD protection, HBM 2kV
- TO-252 power package

APPLICATIONS

LED Lighting Devices
Automobile Lighting Systems
DC to DC Conversion

PIN CONFIGURATION

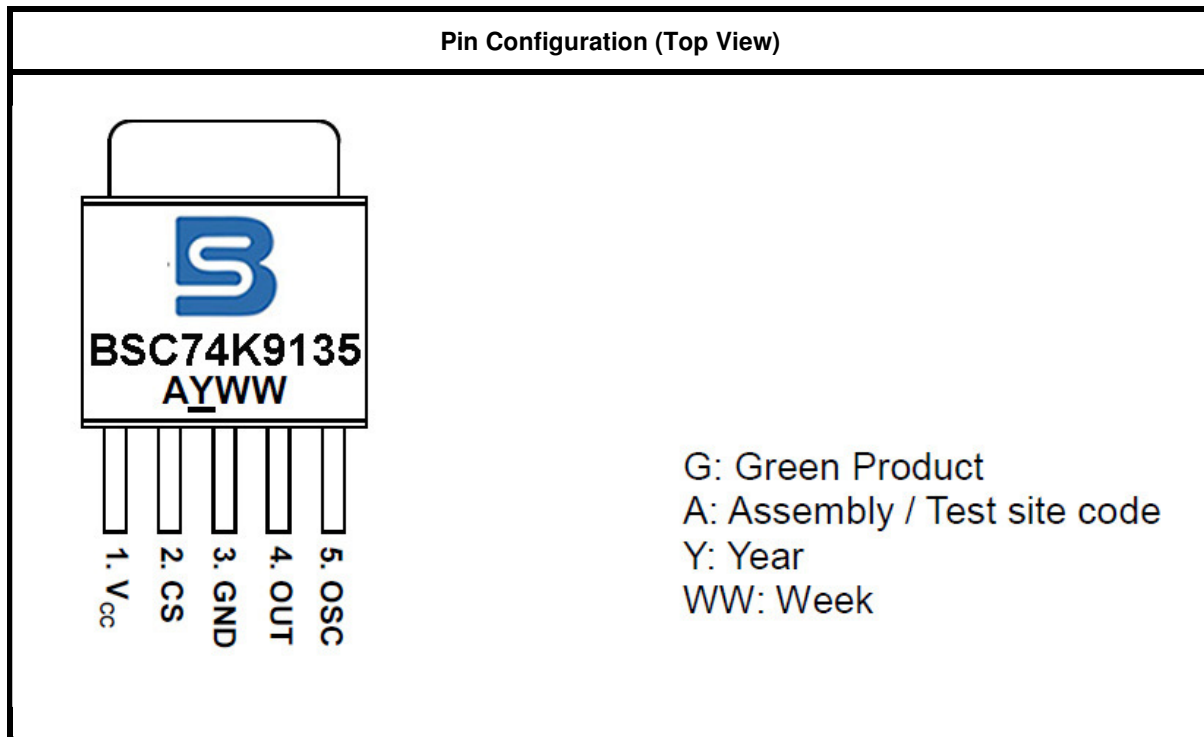


Figure 1 Pin Configuration

PIN DESCRIPTION

No.	Pin	Description
1	V _{CC}	Input Voltage – 4V – 40V
2	CS	Peak Current Sense Pin
3	GND	Ground
4	OUT	Driver Output Pin
5	OSC	Oscillator Timing Capacitor

ABSOLUTE MAXIMUM RATINGS¹

Parameter	Symbol	Ratings	Unit
Maximum Supply Voltage	V _{CC}	-0.3 to 40	V
Maximum Output Current	I _{OUT}	1.5	A
Minimum Output Voltage	V _{OUT}	-0.3 to 40	V
Maximum junction temperature ²	T _J	150	°C
Thermal Resistance TO-252 5L	θ _{JA}	95	°C/W
Storage Junction Temperature	T _{STG}	-55 to 150	°C
Lead Temperature (Soldering 10 secondes)		260	°C

Note 1: Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other condition beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

RECOMMENDED OPERATING CONDITIONS

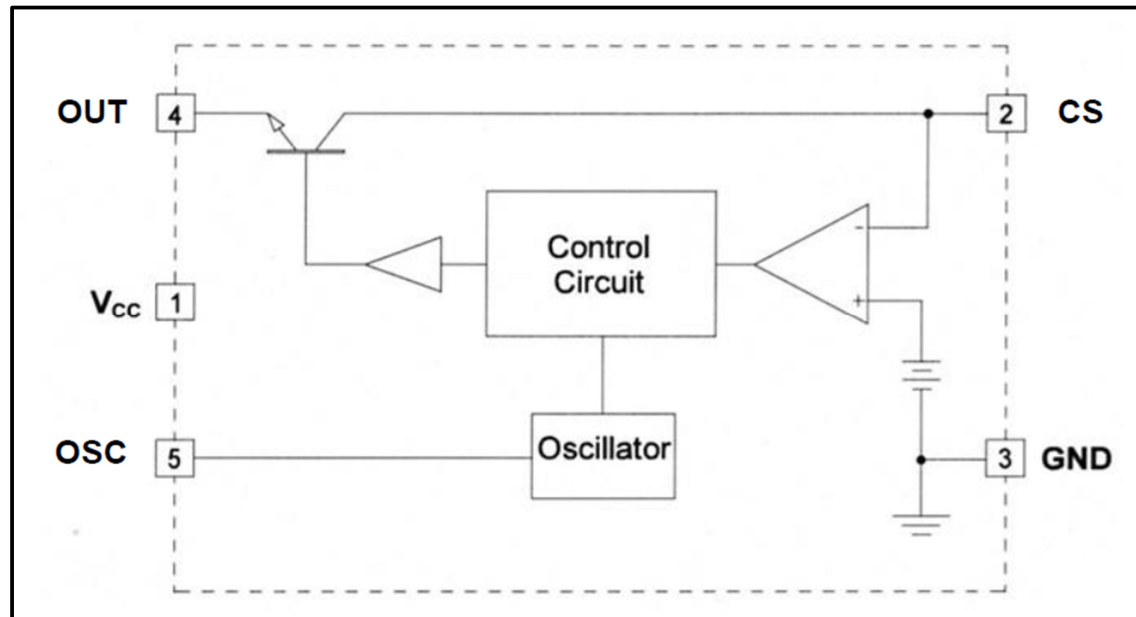
Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Supply Voltage	V _{CC}	4		40	V
Output Current	I _{OUT}			1.5	A
Operating Free-Air Temperature Range	T _A	-40		85	°C

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified: T_A = 25°C, V_{CC} = 5V)

Parameter	Condition	Symbol	Value			Unit
			Min	Typ	Max	
Supply Current	V _{CC} = 4 to 40V	I _{CC}			4	mA
Output Drop Out Voltage	I _{OUT} = 1 A	V _{DP}		1	1.31	V
Output Off Current	V _{CS} – V _{OUT} = 40 V	I _{OFF}		200	300	µA
Current Sense Voltage		V _{CS}	300	330	360	mV
Duty Cycle	V _{CS} = V _{CC}	D		85		%
OSC Charge Current		I _{CHG}		35		µA

FUNCTIONAL BLOCK DIAGRAM



TYPICAL APPLICATION CIRCUITS

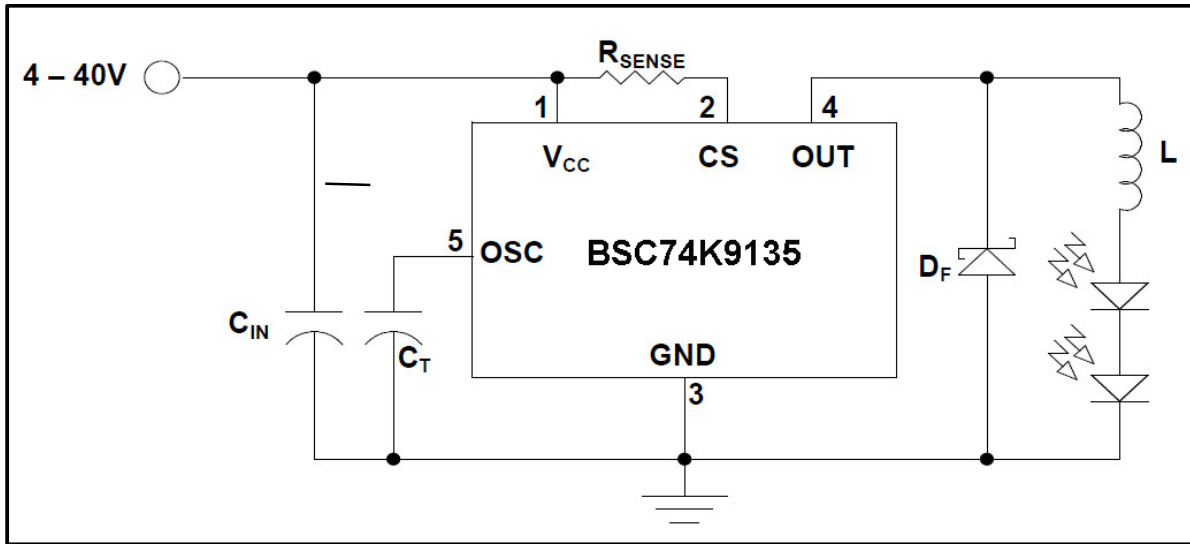
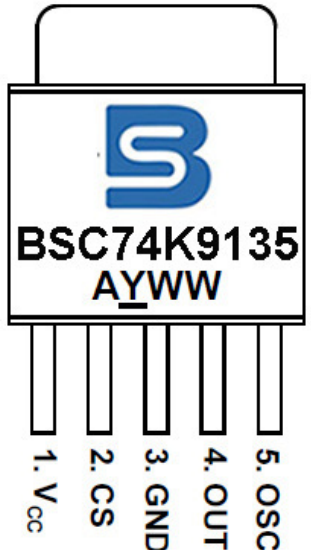


Figure 2 Typical Application Circuit

DEVICE MARKING

Device Marking (Top View)



G: Green Product
 A: Assembly / Test site code
 Y: Year
 WW: Week

ORDERING INFORMATION

Industrial Range: -40°C To +125°C

Order Part No.	Package	QTY
BSC74K9135-TC5RG	TO-252-5L, Lead-free Tape and Reel	2500 Units /Reel

Note:

Green products

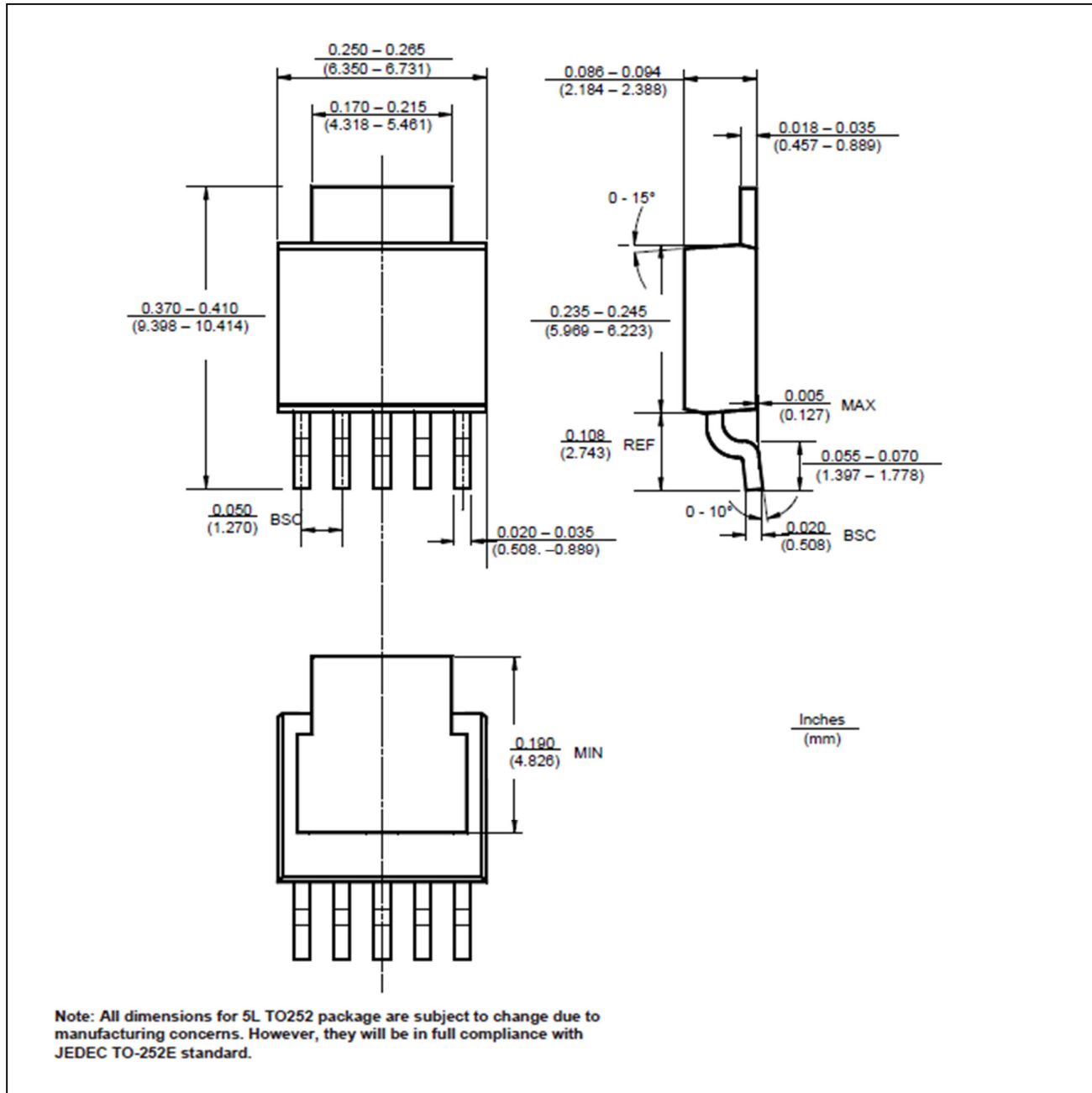
- Lead free (RoHS compliant)
- Halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight)

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PACKAGE INFORMATION

Package Outline Dimensions – TO-252 5L



PACKAGE THERMAL RESISTANCE

Package	θ_{JA} Thermal Resistance Junction-to-Ambient
TO-252 5L	95°C/W

*2 square inches of FR-4, double sided, 1oz, minimum copper weight, is recommended

REVISION HISTORY

Revision	Detail Information	Date
A	Initial Release	2021.09.03

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