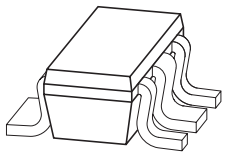
Low-Drop LED Driver

TLE 4240 G

Target Data

Features

- Output current tolerance ≤ ± 20%
- 60 mA output current
- Low drop voltage
- Suitable for use in automotive electronics
- Wide operation range: up to 45 V
- Wide temperature range: – 40 °C ≤ T_j ≤ 150 °C
- Output protected against short circuit
- Overtemperature protection
- Reverse polarity proof
- Very small SMD-Package SCT 595
- Status output for open Load



SCT 595

Type	Ordering Code	Package
▼ TLE 4240 G		SCT-595 (SMD)

▼ New type

Functional Description

The TLE 4240 G is a monolithic integrated low-drop LED Driver in the very small SMD package SCT 595. It is designed to supply LEDs under the severe conditions of automotive applications. Therefore the device is equipped with additional protection functions against overload, short circuit and reverse polarity and overtemperature.

The output is a constant current source which drives LEDs to 60 mA within an accuracy of ± 20%.

Pin Configuration
(top view)

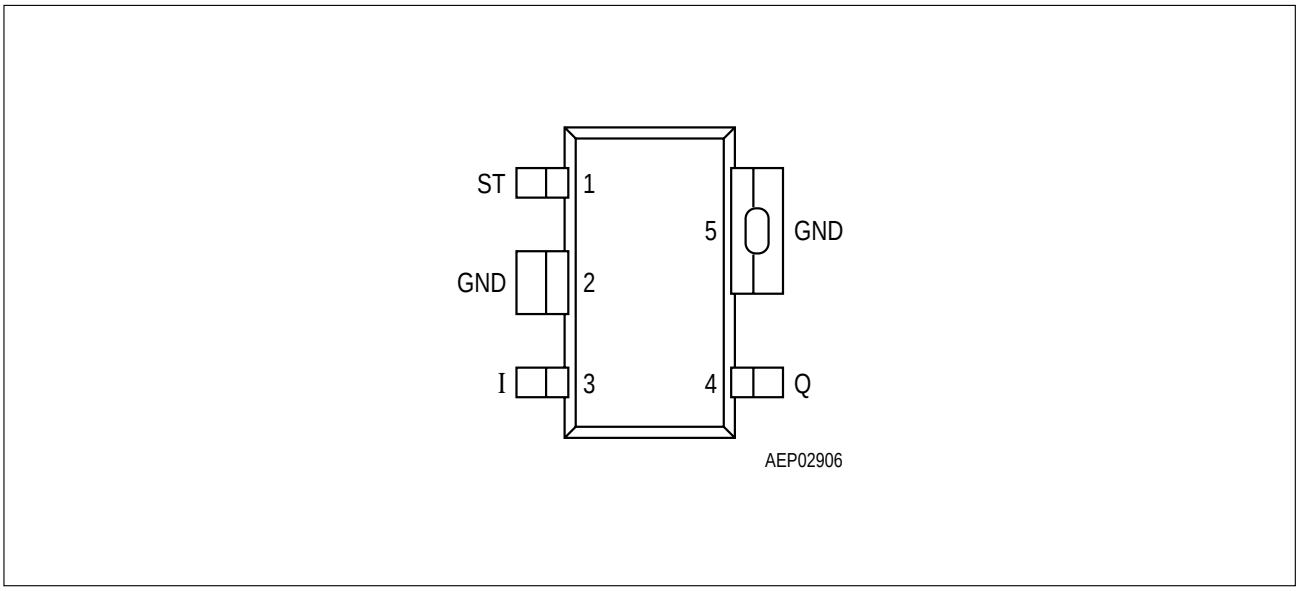


Figure 1

Pin Definitions and Functions

Pin No.	Symbol	Function
1	ST	**Status output**; low level for open load
2	GND	**Ground**; internally connected to pin 5
3	I	**Input voltage**
4	Q	**Output**
5	GND	**Ground**

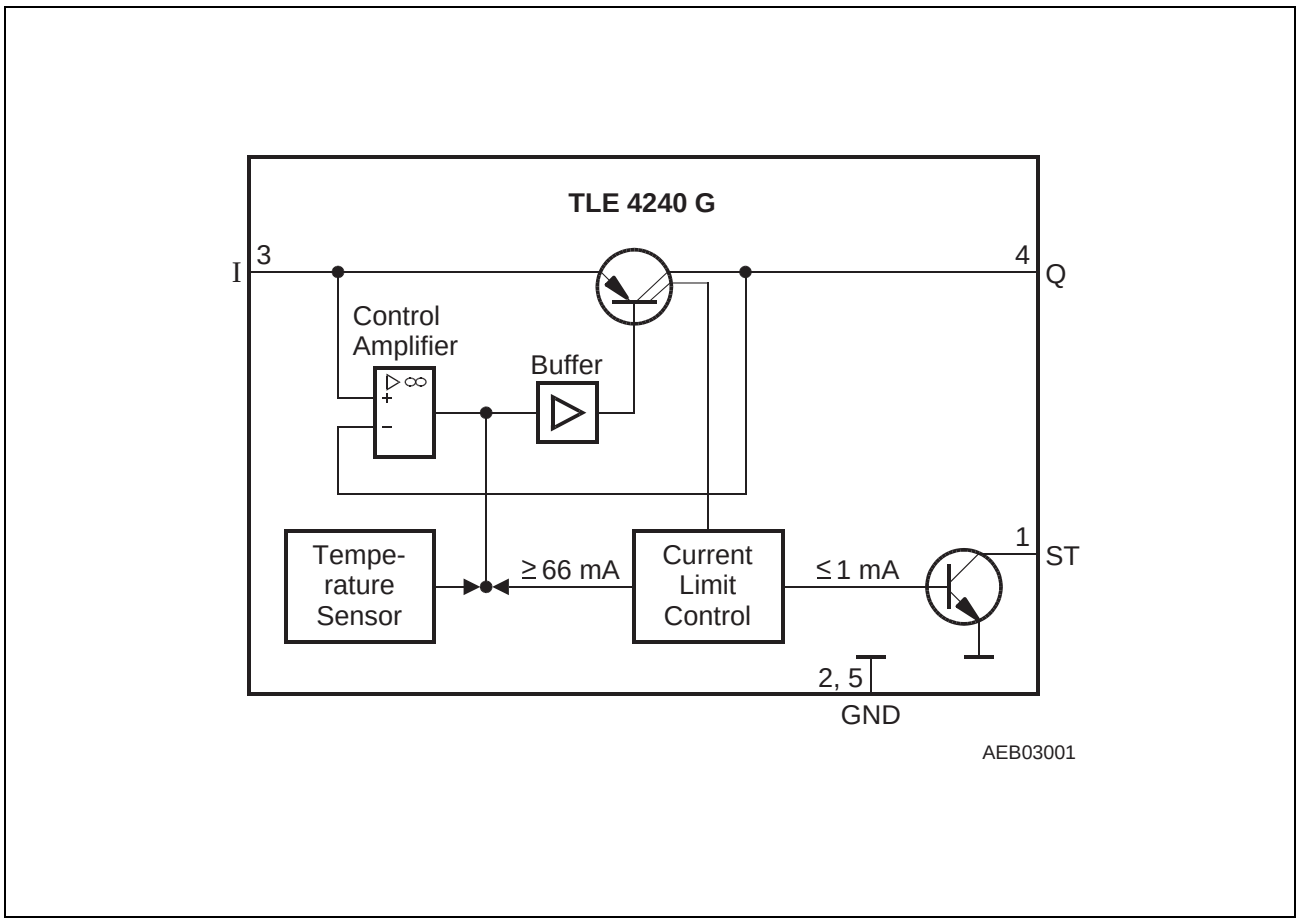


Figure 2 Block Diagram

Absolute Maximum Ratings

– 40 °C < T_j < 150 °C

Parameter	Symbol	Limit Values		Unit	Remarks
		min.	max.		
Input					
Voltage	V_I	– 42	45	V	–
Current	I_I	–	–	mA	internally limited
Output					
Voltage	V_Q	– 1	40	V	–
Current	I_Q	–	–	mA	internally limited
Status					
Voltage	V_{ST}	– 0.3	40	V	–
Current	I_{ST}	– 5	5	mA	internally limited
Temperatures					
Junction temperature	T_j	– 40	150	°C	–
Storage temperature	T_{stg}	– 50	150	°C	–
Thermal Resistances					
Junction ambient	R_{thja}	–	179	K/W	zero heat sink area, zero airflow

Note: Maximum ratings are absolute ratings; exceeding any one of these values may cause irreversible damage to the integrated circuit.

Operating Range

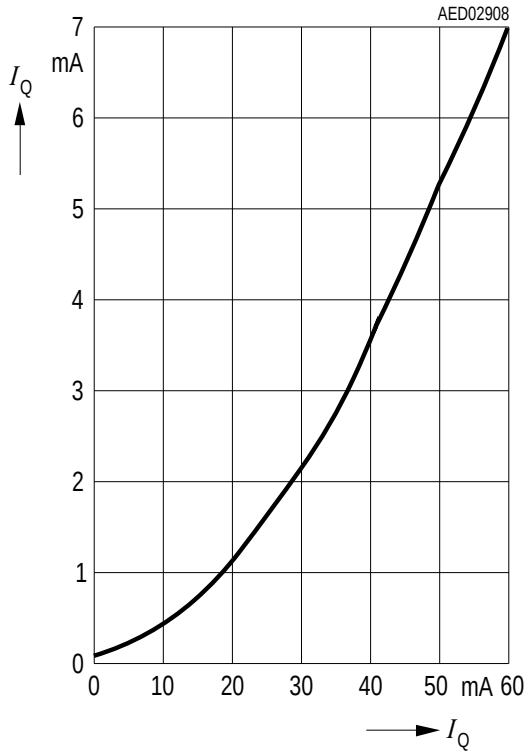
Parameter	Symbol	Limit Values		Unit	Remarks
		min.	max.		
Input voltage	V_I	3	45	V	–
Status output voltage	V_{ST}	–	7	V	–
Junction temperature	T_j	– 40	150	°C	–

Electrical Characteristics

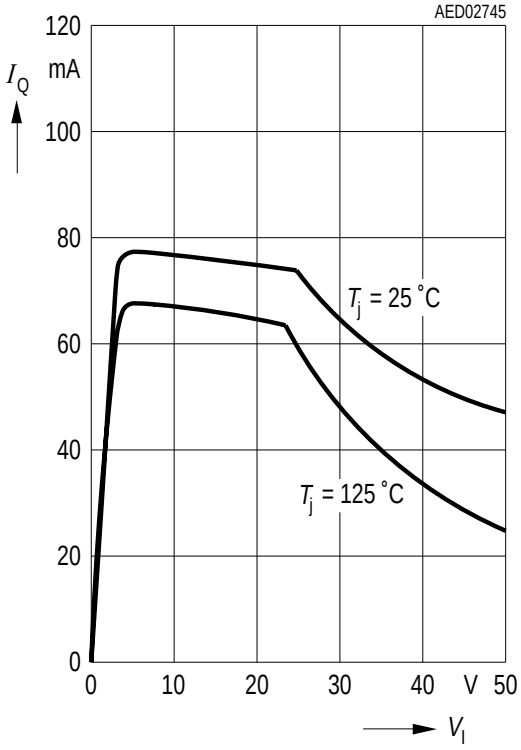
V_I = 13.5 V; – 40 °C < T_j < 150 °C; unless otherwise specified

Parameter	Symbol	Limit Values			Unit	Test Condition
		min.	typ.	max.		
Output						
Drop voltage	V_{dr}	–	0.5	0.7	V	I_Q = 60 mA
Output current	I_Q	53	66	79	mA	9 V < V_I < 16 V T_j < 125 °C
Current consumption $I_q = I_I - I_Q$	I_q	–	7	10	mA	I_Q = 60 mA T_j = 25 °C
Status Output						
Status Output Voltage	V_{ST}	–	–	0.8	V	I_Q = 1mA R_{ext} = 10 kΩ

Current Consumption I_q versus Output Current I_Q

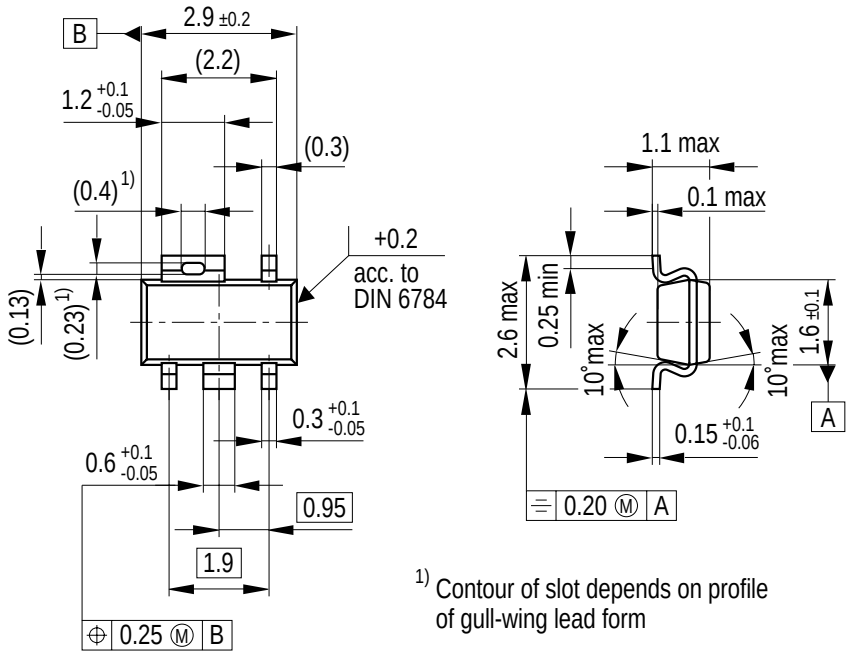


Output Current I_Q versus Input Voltage V_I



Package Outlines

SCT-595
(Special Package)



1) Contour of slot depends on profile of gull-wing lead form

Sorts of Packing
Package outlines for tubes, trays etc. are contained in our Data Book “Package Information”.
SMD = Surface Mounted Device

Dimensions in mm

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