RACE READY MODULES

AIL Driver

1 Features

- Suitable for many competition rulesets:
  - Formula SAE Electric
  - Formula SAE Brazil
  - Formula Student UK
  - Formula Student Germany
  - Formula Hybrid & Electric
- Max operational voltage: >600V
- Available for both LED & Neon AILs (Accumulator Indicator Lights)
- Wide operating temperature: -20°C to 100°C

2 Applications

- Formula Student Accumulator Indicator Light

3 General Description

This AIL Driver is a reliable, 600V, constant current driver available for LED or Neon Lamp Indicators. Available with current limits of 1mA, 5mA, & 10mA. For LEDs, typical threshold of 51V + V_f. Small footprint area of $0.72in^2$.

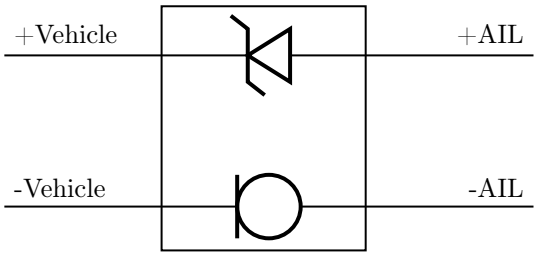

Figure 1: Simplified Schematic

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4 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

5 Pin Configuration and Functions

Table 1: Pin Functions

Pin		Type	Description
+Vehicle	1	Supply	Vehicle side of +AIR
-Vehicle	2	Ground	Vehicle side of -AIR
-AIL	3	-	Cathode (-) of AIL LED
+AIL	4	-	Anode (+) of AIL LED

6 Specifications

Table 2: Absolute Maximum Ratings

		Min	Max	Unit
V_{cc}	Supply Voltage (+Vehicle - -Vehicle)	0	700	V
T	Operating Temperature	-20	100	˚C

[1] **Note:** Stresses above those listed under Absolute Maximum Ratings can cause permanent damage to the device. This is a stress rating only. Functional operation of the device is not implied in any conditions above those indicated in the Electrical Specifications section.

All specifications are in $-20°C \leq T_A \leq 85°C$ unless otherwise noted.

Table 3: Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Indicator Voltage Threshold	V_t		51V + V_f		V	
External Clearance	CLR	12.7			mm	
External Creepage	CPG	12.7			mm	
Insulation Voltage	E_{max}[1]		900		V	

[1] Based on characterization data, not tested in production.

7 Application and Implementation

7.1 Typical Application

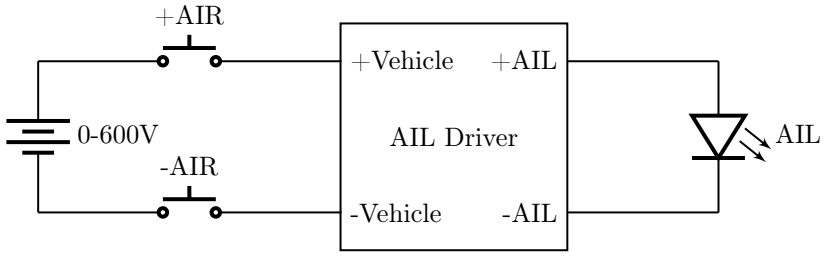

Figure 2: Application Circuit