

ADVANCE INFORMATION

February 1991

Dual 5V Regulator With Logic Controlled Startup For Automotive Applications

Features

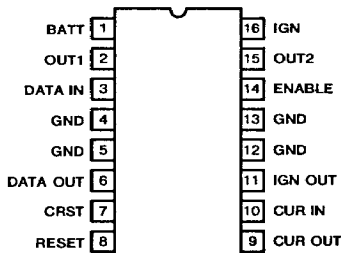
- Dual 5V Regulator
 - ▶ VOUT1 5V 50mA - Standby
 - ▶ VOUT2 5V 80mA - Enabled
 - ▶ Regulated 6.2V to 18V
 - ▶ Bandgap Voltage References
- Overvoltage Shutdown
- Short Circuit Current Limiting
- Thermal Shutdown Protection
- Power ON Delayed Reset Control
- Ignition Comparator & Logic Switch
- Data Comparator & Logic Switch
- 100x Current Multiplier/Amplifier

Description

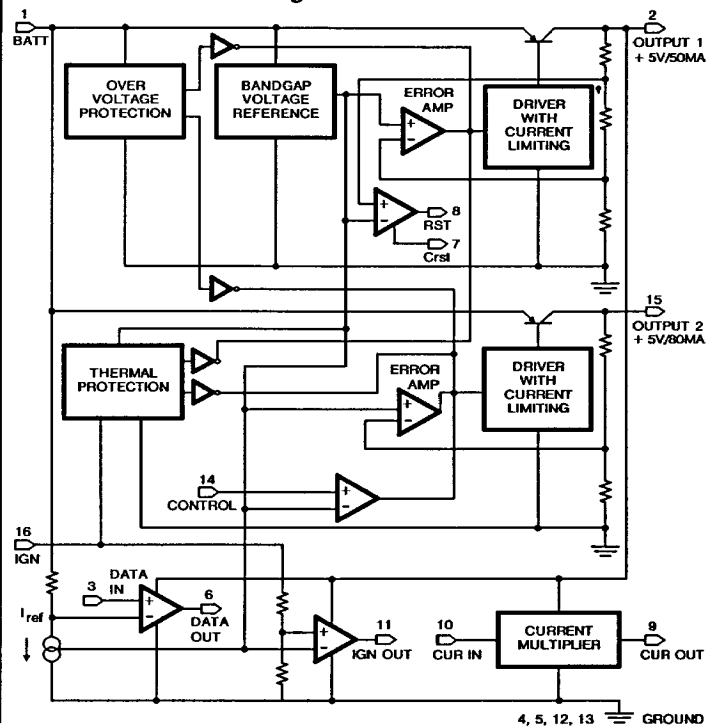
The TA14832 is a Dual 5 Voltage Regulator IC in standard silicon bipolar technology. It is supplied with features that are complementary to the shutdown and startup requirements of the microcontroller. It has short circuit current and overvoltage protection plus thermal shutdown protection to meet the wide ranging requirements of Automotive applications. The TA14832 functions are complementary to the needs of microcontroller and memory circuits. The ignition comparator provides a switched output to the microcontroller port input and the microcontroller provides a logic switched output to the regulator enable input. The standby output of the regulator supplies the microcontroller/memory circuits. Other functions of the TA14832 include a data comparator and a logic switch to transfer remote data to the microcontroller at a 5V logic level (RDI input). Data is transmitted from the microcontroller (TDO output) to the input of the TA14832 current amplifier which amplifies and translates the signal to a high level from the output of an npn transistor open collector.

Pinout

16 LEAD DUAL-IN-LINE PACKAGE
TOP VIEW



Functional Block Diagram



CAUTION: These devices are sensitive to electrostatic discharge. Proper I.C. handling procedures should be followed.
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File Number **2792**

Specifications TA14832

Absolute Maximum Ratings

	MIN	MAX	UNIT
V _{batt} (Short Duration)	-14	26	V
V _{batt} Max. Oper.	-	18	V
Max. Output 1 Load Current	-	50	mA
Max. Output 2 Load Current	-	80	mA

Power Dissipation Ratings

	MIN	MAX	UNIT
Up to 60°C	-	1.5	W
Derate Above 60°C	-	16.6	mW/°C
Ambient Operating Temp	-40	85	°C
Storage	-55	150	°C
Max Junction Temp	-	150	°C
Lead Temp. (During Solder)	-	265	°C

1/16 ± 1/32" from case, 10s max

Electrical Characteristics (T_A = +25°C, OUT1 = 50mA, OUT2 = 80mA) Unless Otherwise Specified

PARAMETER	CONDITIONS	LIMITS			UNITS
		MIN	TYP	MAX	
REG OUTPUT 1					
Output Voltage	V _{batt} = 9V to 16V	4.75	5.0	5.25	V
Dropout Voltage		-	150	800	mV
Line Reg	V _{batt} = 6.2V to 16V	-	-	40	mV
Load Reg.	0.5mA to 50mA	-	-	60	mV
Current Limit		-	-	-150	mA
REG OUTPUT 2					
Output Voltage	V _{batt} = 9V to 16V	4.75	5.0	5.25	V
Line Reg.	V _{batt} = 6.2V to 16V	-	-	40	mV
Load Reg.	0.5mA to 80mA	-	-	60	mV
Current Limit		-	-	-225	mA
Idle Current	@ 12.6 V _{batt} , No Loads, V _{enable} = V _{ign} = 0V	-	360	600	μA
Enable On Current	@ 5V	-	-	50	μA
Data Out V _{OL}	V _{batt} = 16V, Data In = V _{batt} - 5V	-	-	150	mV
Data Out V _{OH}	V _{batt} = Data In = 16V	V _{OUT} -0.15	-	-	V
Current Out	Current In = -200μA	16	-	-	mA
Voltage Shutdown	V _{batt} , V _{ign} Thd	19	-	23	V
Data Comp Thd	V _{batt} = 13.5V, Measure to Batt	-3.8	-3.4	-2.8	V
Data Comp Hysteresis		-	200	-	mV
Ign Comp Thd	V _{batt} = 13.5V	5.5	6.0	6.4	V
Ign Comp Hysteresis		-	200	-	mV
Ripple Rejection	OUT1, OUT2, @ 3KHz	40	-	-	dB

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PREVIEW PRODUCTS

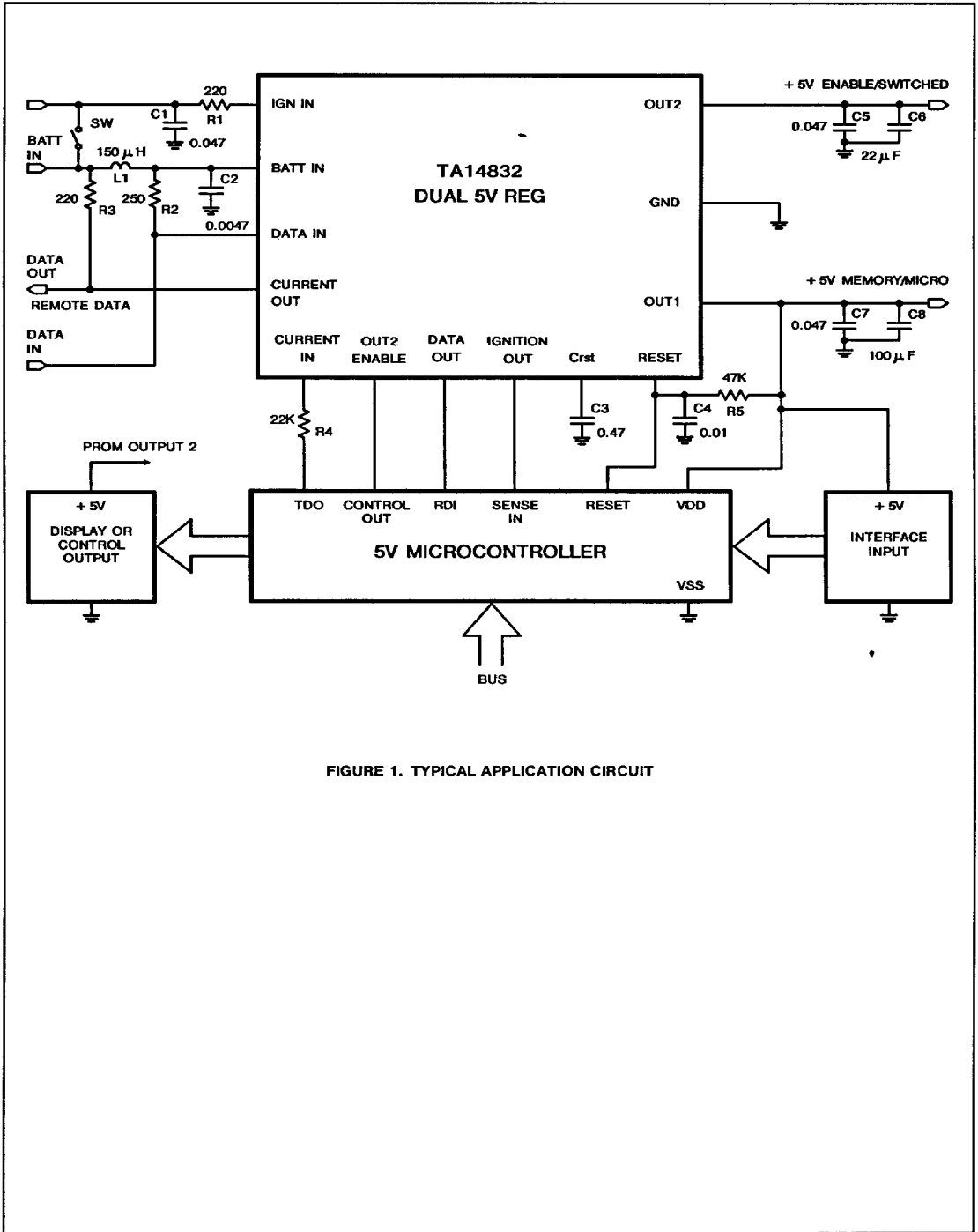


FIGURE 1. TYPICAL APPLICATION CIRCUIT