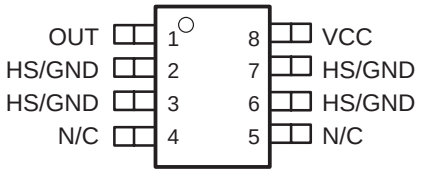
UC563
32-LINE VME BUS BIAS GENERATOR

SLUS169A - APRIL 1999 - REVISED NOVEMBER 2000

- **Complies With VME64 Standard**
- **2.94-V Regulated Output Voltage With 1% Tolerance at 25°C**
- **Provides Bias for up to 32 Lines of Active Termination for VME busses**
- **–575-mA Sourcing Current for Termination**
- **+475-mA Sinking Current for Active Negation Drivers**
- **Current Limit and Thermal Shutdown Protection**
- **Low Thermal Resistance Surface-Mount Packages**

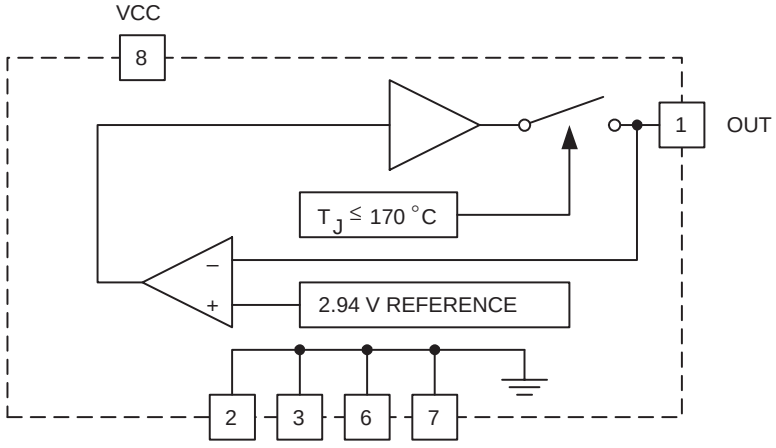
DP PACKAGE
(TOP VIEW)



description

The VME bus bias generator provides current for up to 32 lines of active termination for a VME64 parallel bus. The VME standards require termination at both ends of the bus. The voltage regulator and internal logic circuits of these parts provide all the functionality and performance necessary to bias termination resistors for the VME bus. The VME bus bias generator sink current maintains regulation with all active negation drivers negated. Internal circuit trimming is used to trim the output voltage to a 1% tolerance. The UC563 regulator source/sink will provide better VME bus performance and work with active negation drivers. The regulator with resistor provides the bus with higher pullup current than passive termination. Other features include thermal shutdown and current limit for short circuit conditions. This device is available in low thermal resistance versions of the industry standard 8-pin power SOIC.

block diagram



UDG-99094

NOTE: Indicated pinout is for the 8-pin power SOIC package.

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absolute maximum ratings over operating free-air temperature (unless otherwise noted)†

VCC . . . . . 7 V
Regulator output current . . . . . 600 mA
Storage temperature, T_{stg} . . . . . –65°C to 150°C
Junction temperature, T_J . . . . . –55°C to 150°C
Lead temperature (soldering, 10 Sec.) . . . . . 300°C

† 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 conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

‡ Currents are positive into, negative out of the specified terminal. Consult Packaging Section of Interface Products Data Book (TI Literature Number SLUD002) for thermal limitations and considerations of packages. All voltages are referenced to ground.

recommended operating conditions

VCC voltage . . . . . 4.75 V to 5.25 V

ORDERING INFORMATION

T_J	PACKAGED DEVICES
	SOIC (DP)
0°C to 70°C	UC563DP

† The DP package is available tape and reeled. Add TR suffix to each device type to order quantities of 2500 per reel.

electrical characteristics, T_A = 0°C to 70°C, V_{CC} = 5 V, C_{OUT} = 4.7 F, $T_A = T_J$, (unless otherwise specified)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Supply Current Section					
Supply current	No load		35	60	mA
	I_{OUT} = –575 mA		610	635	mA
Regulator Section					
Output voltage	25°C, No load	2.91	2.94	2.97	V
Load regulation	–575mA ≤ I_{OUT} ≤ 475 mA, See Note 1		25	30	mV
Line regulation	4.875 V ≤ V_{CC} ≤ 5.25 V, No load		10	20	mV
Short circuit current	V_{OUT} = 0 V		–1200	–600	mA
	V_{OUT} = 3.5 V	500	1200		mA
Thermal shutdown	See Note 2		170		°C
Thermal shutdown hysteresis	See Note 2		10		°C

NOTES: 1. Tested at a constant junction temperature by low duty cycle pulse testing.
2. Ensured by design. Not production tested.

pin assignments

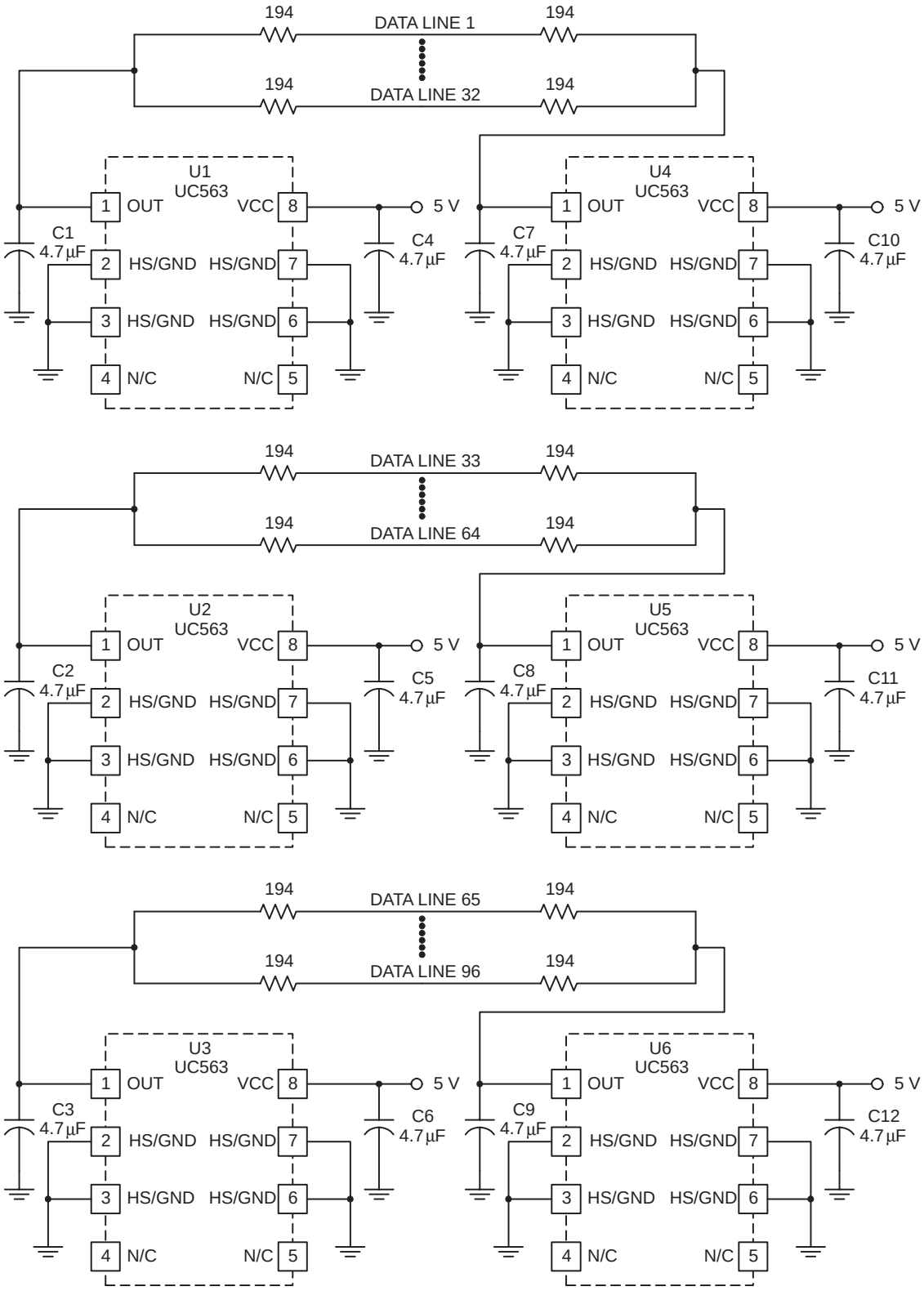
GND: Ground pin.

HS/GND: Heat sink GND. Connect to large area PC board traces to increase power dissipation capability.

OUT: 2.94-V regulated output voltage pin. The part is internally current limited for both sinking and sourcing current to prevent damage. For best performance, a 4.7-µF low ESR capacitor is recommended.

VCC: Supply voltage pin. The pin should be decoupled with at least a 2.2-µF low ESR capacitor. For best performance, a 4.7-µF low ESR capacitor is recommended. Lead lengths should be kept at a minimum.

typical application



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