



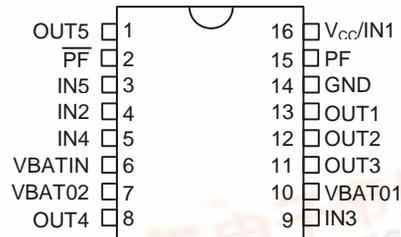
DS1336 Afterburner Chip

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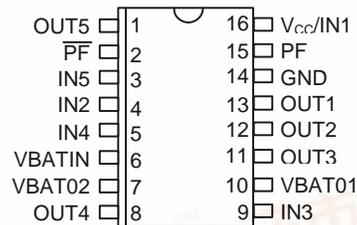
FEATURES

- Provides power switching of up to 1.5 amps at voltages between 3.0 and 5.0 volts
- Five separate power switches
- Selectable battery switches for use with battery-backed systems
- Very low on impedance of 0.7Ω
- Battery backup current of 4 mA
- Diode-isolated battery path
- Available in 16-pin DIP or 16-pin SOIC surface mount package
- Low voltage drop battery path
- Connects directly to a variety of Dallas Semiconductor devices, adding increased switching capability for large battery backup current applications

PIN ASSIGNMENT



16-Pin DIP (300-mil)
See Mach. Drawings
Section



16-Pin DIP SOIC (300-mil)
See Mach. Drawings
Section

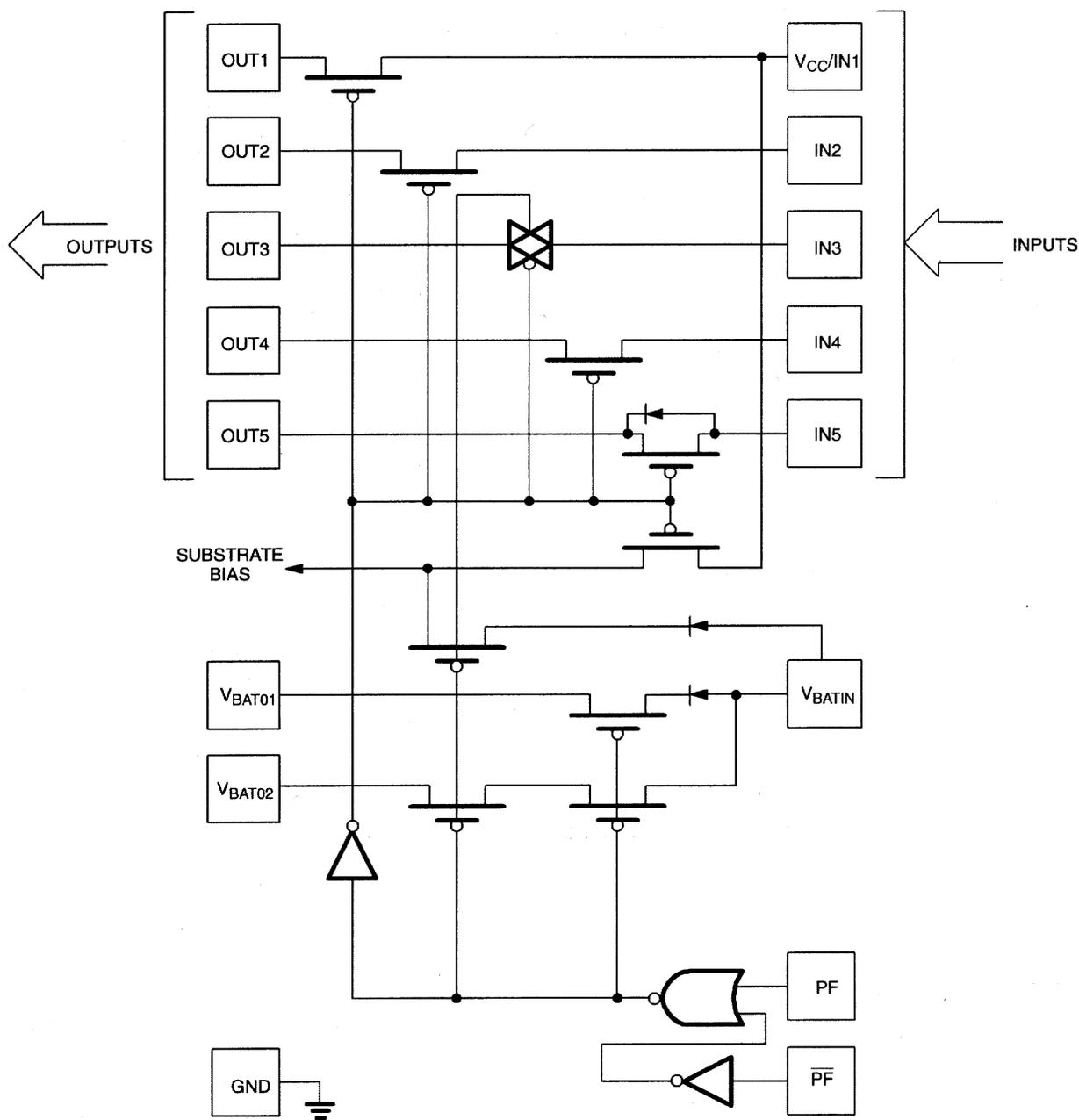
PIN DESCRIPTION

- V_{CC}/IN1 - +5V Input and Input 1
- IN2 - IN5 - Inputs 2 - 5
- OUT1 - 5 - Outputs 1 - 5
- V_{BATIN} - External Battery Input
- V_{BAT01} - Diode Protected Battery Output
- V_{BAT02} - Low Voltage Drop Battery Output
- PF, PF - Power-fail Inputs
- GND - Ground

DESCRIPTION

The DS1336 Afterburner Chip is designed to provide power switching between a primary power supply (V_{CC}) and a backup battery power supply (V_{BAT}). Five V_{CC} and two battery paths are provided which can be used individually or in parallel to supply uninterrupted power in applications such as SRAM networks. When used with one of the Dallas power monitoring devices listed in Table 1, the DS1336 allows a load to be switched from its main power supply V_{CC} to a battery backup supply when V_{CC} falls out of tolerance. A user may selectively tie together any combination of the output pins to provide the desired high current supply, providing up to 300 mA per OUT pin or a maximum of 1.5A. Depending upon the user's backup supply load requirements, either of the V_{BAT} outputs may be tied to the OUT pins to supply

DS1336 BLOCK DIAGRAM Figure 2



DALLAS SEMICONDUCTOR DEVICES WHICH PROVIDE PF OR $\overline{\text{PF}}$ INPUT TO NIL Table 1

DEVICE	SWITCH > V_{BAT}	SWITCH AT V_{BAT}	DEVICE	SWITCH > V_{BAT}	SWITCH AT V_{BAT}
DS1211	X		DS1238	X	X
DS1212	X		DS1239	X	X
DS1231	X		DS1259	X	
DS1232	X		DS1260	X	
DS1233	X		DS1610	X	
DS1233A		X	DS1632	X	
DS1233D	X		DS1833	X	
DS1234	X		DS5001	X	X
DS1236	X	X	DS5340	X	X
DS1237	X				

ABSOLUTE MAXIMUM RATINGS*

Voltage on Any Pin Relative to Ground	-0.3V to +7.0V
Operating Temperature	0°C to 70°C
Storage Temperature	-55°C to +125°C
Soldering Temperature	260°C for 10 seconds

* This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operation sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.

DC OPERATING CONDITIONS $(t_A = 0^\circ\text{C to } 70^\circ\text{C}; V_{CC} = 5\text{V} \pm 10\%)$

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Supply Voltage	V_{CC1}	3.0	5.0	5.5	V	1
Supply Current	I_{CC1}		0.25	1.0	mA	
Supply Current	I_{CC2}		50	100	nA	3
Input Low Voltage	V_{IL}			0.8	V	1
Input High Voltage	V_{IH}	2.0		V_{CC}	V	1
Current Output $V_{CC}=V_{CC1}$, PF=0, $\overline{\text{PF}}=1$	I_{CCO}			300	mA	2
Current Output $V_{CC}=0$, PF=1, $\overline{\text{PF}}=0$	$I_{BAT01-2}$			4.0	mA	4
Current, Forward Bias of V_{CC5} Diode	I_{FB}			20	mA	
Off Impedance	R_{OFF1}	5.0			$M\Omega$	5
Off Impedance	R_{OFF2}	10			$M\Omega$	6
On Impedance	R_{ON1}			0.7	Ω	7
On Impedance	R_{ON2}			50	Ω	8

AC CHARACTERISTICS $(t_A = 0^\circ\text{C to } 70^\circ\text{C}; V_{CC} = 5\text{V} \pm 10\%)$

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
Propagation Delay	t_{PD}		10		ns	9
Switch Delay Power-fail	t_{PF}		100		ns	
Switch Delay Power-on	t_{PON}			100	ns	
Capacitance PF, $\overline{\text{PF}}$	C_I			7	pF	

NOTES:

- All voltages referenced to ground.
- I_{CCO} with a voltage drop of 0.2 volts from any V_{CCO} output.
- $V_{CC}=0$, $V_{BATIN}=3.0$ volts.
- V_{BAT01} with a voltage drop of 1.0 volts.
- R_{OFF1} applies to $V_{CCO1, 2, 3, 4}$.
- R_{OFF2} applies to $V_{BAT01, 2}$.

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7. Applies to V_{CCO1-5} , 300 mA.
 8. Applies to $V_{BATO1-2}$, 4 mA.
 9. V_{CCI3} to V_{CCO3} delay when used as chip enable control for write protection of a memory device. In this application a current 8 mA source current on V_{CCI3} with 50 pF load on V_{CCO3} can be accommodated.