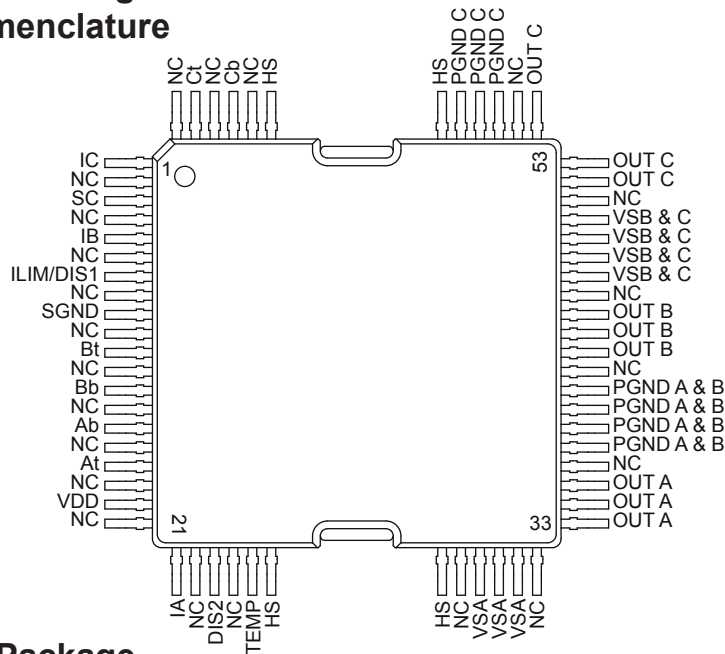


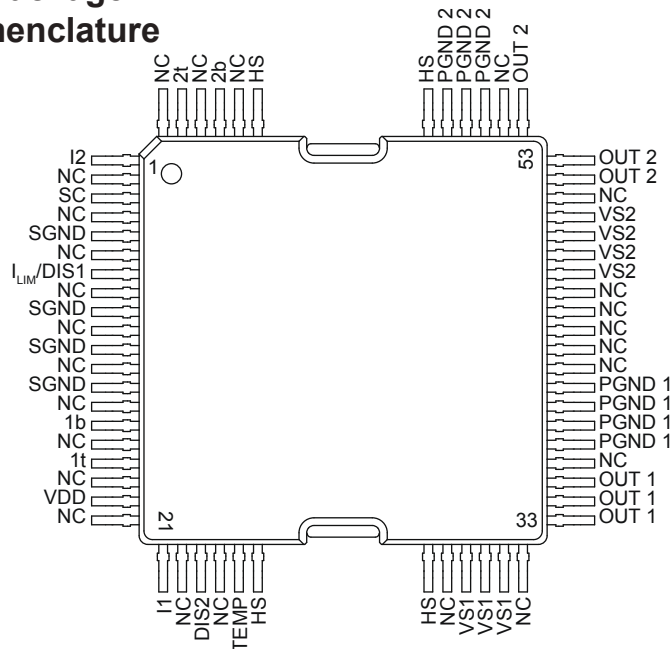
## Comparison Between SA57 and SA306

As of June 2010, both the SA306-IHZ and SA57-IHZ are transitioning to a new packaging form factor. As available product inventories are reduced, the SA306-IHZ can be used as a substitute for the SA57-IHZ. Both devices have been using an identical package and the pin designation assignments are shown in the figures below. In applications requiring the SA57, the SA306 is interchangeable as long as it is connected as indicated in the SA57 data sheet. Please refer to the SA57 data sheet and to the pin out table and block diagrams provided in this Tech Alert. The HQ package currently used by these ICs is being replaced by the HU or HR package. These devices provide thermal transfer through the heat slug. The heat slugs are available on either top side (HU) or bottom side (HR - SA306 only) providing for flexible heat sinking options. Refer to the data sheets for packaging details.

**Figure 1. SA306 HQ Package Device Pin-Out Nomenclature**



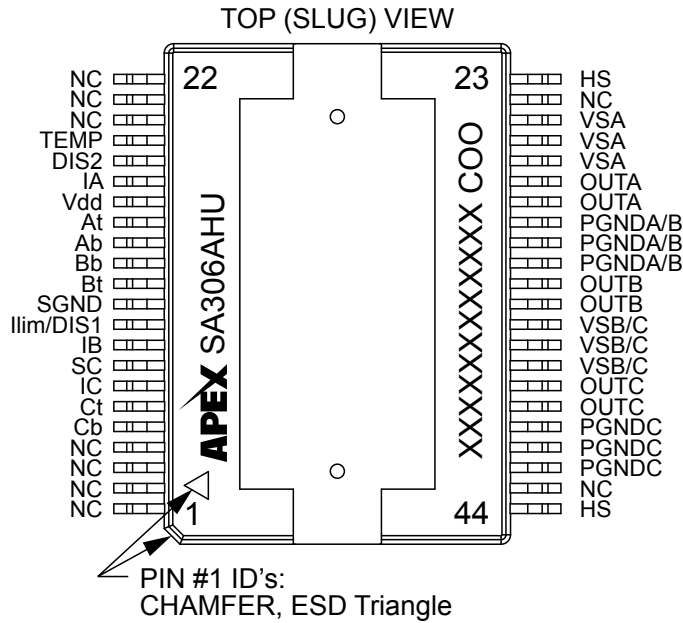
**Figure 2. SA57 HQ Package Device Pin-Out Nomenclature**



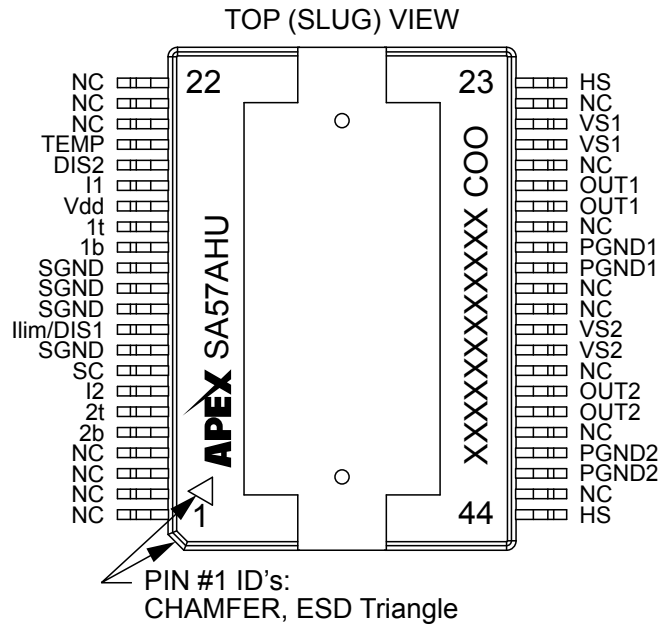
# Tech Alert

The SA306 may be used to replace the SA57. Both devices are available in the HU package and the SA306 is also available in the HR (slug down) package. The external connections are shown in the figures. The SA306 can be used in applications requiring the SA57 by connecting the SA306 using the SA57 external connections. Please refer to the figures showing external connections and to the Pin Description Tables.

**Figure 3. SA306 HU Package Device Pin-Out Nomenclature**



**Figure 4. SA57 HU Package Device Pin-Out Nomenclature**



**Figure 5. SA306 HR Package Device Pin-Out Nomenclature**

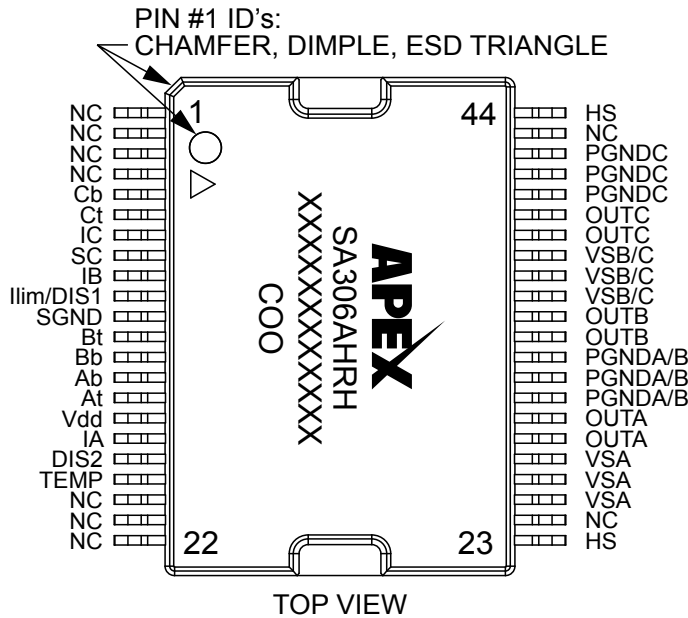


Figure 6. SA306 Block Diagram

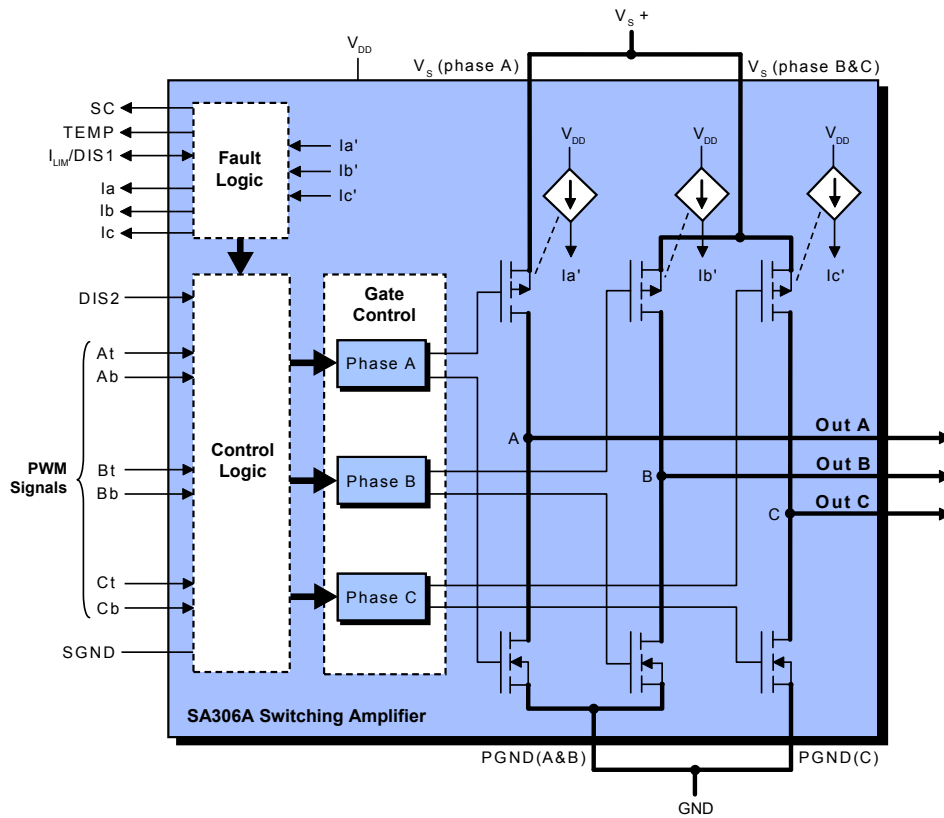
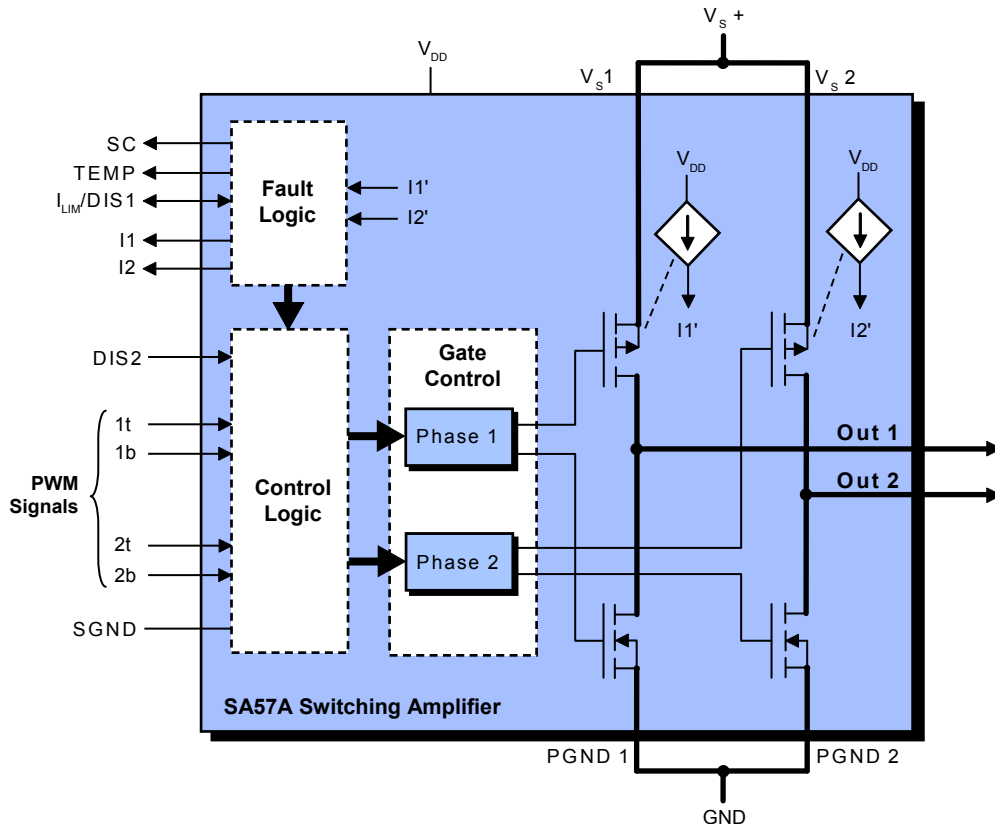


Figure 7. SA57 Block Diagram



## Tech Alert

---

This table indicates the pin name correspondence between the SA306 and SA57.

<b>SA306</b>	<b>SA57 Equivalent</b>
V <sub>s</sub> (phase A)	V <sub>s</sub> (phase 1)
V <sub>s</sub> (phase B&C)	V <sub>s</sub> (phase 2)
PGND (phase A&B)	PGND (phase 1)
PGND (phase C)	PGND (phase 2)
Ia	I1
Ib	N/A (do not connect on SA306)
Ic	I2
At	1t
Ab	1b
Bt	N/A (do not connect on SA306)
Bb	N/A (do not connect on SA306)
Ct	2t
Cb	2b
OUT A	OUT 1
OUT B	N/A (do not connect on SA306)
OUT C	OUT 2

The SA306 will provide the same function as the SA57 when connected using the SA57 pin assignments as indicated in the tables.

<b>Table 2.</b>			
<b>SA306 Connection Table HQ Package</b>		<b>SA57 Connection Table HQ Package</b>	
<b>Pin #</b>	<b>Pin Name</b>	<b>Pin #</b>	<b>Pin Name</b>
29,30,31	V <sub>s</sub> (phase A)	29,30,31	V <sub>s</sub> (phase 1)
51,52,53	OUT C	51,52,53	OUT 2
55,56,57	PGND (phase C)	55,56,57	PGND (phase 2)
3	SC	3	SC
61	Cb	61	2b
63	Ct	63	2t
1	lc	1	I2
5	lb		
7	I <sub>LM</sub> /DIS1	7	I <sub>LM</sub> /DIS1
9	SGND	5,9,11,13	SGND
11	Bt		
13	Bb		
15	Ab	15	1b
17	At	17	1t
19	V <sub>DD</sub>	19	V <sub>DD</sub>
21	la	21	I1
23	DIS2	23	DIS2
25	TEMP	25	TEMP
42,43,44	OUT B		
46,47,48,49	V <sub>s</sub> (phase B&C)		
33,34,35	OUT A	33,34,35	OUT 1
37,38,39,40	PGND (phase A&B)	37,38,39,40	PGND (phase 1)
26,27,58,59	HS	26,27,58,59	HS
2,4,6,8,10,12,14, 16,18,20,22,24,28, 32,36,41,45,50,54, 60,62,64	NC	2,4,6,8,10,12,14, 16,18,20,22,24,28, 32,36,41,42,43,44, 45,50,54,60,62,64	NC

<b>Table 3.</b>			
<b>SA306 Connection Table HU Package</b>		<b>SA57 Connection Table HU Package</b>	
<b>Pin #</b>	<b>Pin Name</b>	<b>Pin #</b>	<b>Pin Name</b>
25,26,27	V <sub>s</sub> (phase A)	25,26	V <sub>s</sub> (phase 1)
38,39	OUT C	38,39	OUT 2
40,41,42	PGND (phase C)	41,42	PGND (phase 2)
8	SC	8	SC
5	Cb	5	2b
6	Ct	6	2t
7	IC	7	I2
9	IB		
10	I <sub>LIM</sub> /DIS1	10	I <sub>LIM</sub> /DIS1
11	SGND	11,12,13	SGND
12	Bt		
13	Bb		
14	Ab	14	1b
15	At	15	1t
16	V <sub>DD</sub>	16	V <sub>DD</sub>
17	IA	17	I1
18	DIS2	18	DIS2
19	TEMP	19	TEMP
33,34	OUT B		
35,36,37	V <sub>s</sub> (phase B&C)	35,36	V <sub>s</sub> (phase 2)
28,29	OUT A	28,29	OUT 1
30,31,32	PGND (phase A&B)	31,32	PGND (phase 1)
23,44	HS	23,44	HS
1,2,3,4,20,21,22, 24,43	NC	1,2,3,4,20,21,22, 24,27,30,33,34,37, 40,43	NC

## NEED TECHNICAL HELP? CONTACT APEX SUPPORT!

For all Apex Microtechnology product questions and inquiries, call toll free 800-546-2739 in North America.

For inquiries via email, please contact [apex.support@apexanalog.com](mailto:apex.support@apexanalog.com).

International customers can also request support by contacting their local Apex Microtechnology Sales Representative.

To find the one nearest to you, go to [www.apexanalog.com](http://www.apexanalog.com)

### IMPORTANT NOTICE

Apex Microtechnology, Inc. has made every effort to insure the accuracy of the content contained in this document. However, the information is subject to change without notice and is provided "AS IS" without warranty of any kind (expressed or implied). Apex Microtechnology reserves the right to make changes without further notice to any specifications or products mentioned herein to improve reliability. This document is the property of Apex Microtechnology and by furnishing this information, Apex Microtechnology grants no license, expressed or implied under any patents, mask work rights, copyrights, trademarks, trade secrets or other intellectual property rights. Apex Microtechnology owns the copyrights associated with the information contained herein and gives consent for copies to be made of the information only for use within your organization with respect to Apex Microtechnology integrated circuits or other products of Apex Microtechnology. This consent does not extend to other copying such as copying for general distribution, advertising or promotional purposes, or for creating any work for resale.

APEX MICROTECHNOLOGY PRODUCTS ARE NOT DESIGNED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN PRODUCTS USED FOR LIFE SUPPORT, AUTOMOTIVE SAFETY, SECURITY DEVICES, OR OTHER CRITICAL APPLICATIONS. PRODUCTS IN SUCH APPLICATIONS ARE UNDERSTOOD TO BE FULLY AT THE CUSTOMER OR THE CUSTOMER'S RISK.

Apex Microtechnology, Apex and Apex Precision Power are trademarks of Apex Microtechnology, Inc. All other corporate names noted herein may be trademarks of their respective holders.