Specifications

Absolute Maximum Ratings	
Input voltage	-0.5V to +50VDC Continous, 80V, 100 msec
Power output	Internally limited (6.5W typical)
Soldering temperature	300°C for 10 seconds
Operating case temperature	-55°C to +125°C
Storage case temperature	-65°C to +135°C

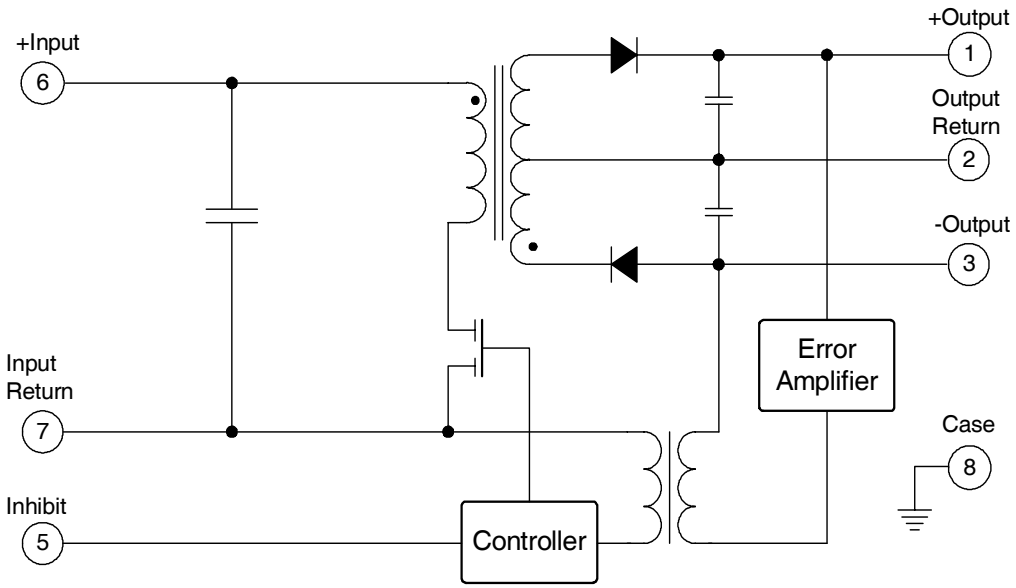
TEST	Conditions $-55° \le T_C \le +125°C$ V_{IN} = 28V dc ±5% C_L = 0 unless otherwise specified	Group A Subgroups	ASA2805D/XX		ASA2812D/XX		ASA2815D/XX		Unit
			Min	Max	Min	Max	Min	Max	
Output voltage	I_{OUT} = 0	1	±4.95	±5.05	±11.88	±12.12	±14.85	±15.15	V
		2, 3	±4.90	±5.10	±11.76	±12.24	±14.70	±15.30	
Output current [1, 2]	V_{IN} = 16, 28, and 40 V dc either output	1, 2, 3	200	1000	84	333	67	267	mA
Output ripple voltage [3, 4]	V_{IN} = 16, 28 and 40 V dc	1, 2, 3		470		200		290	mV_{PP}
Line regulation [4]	V_{IN} = 16, 28, and 40 V dc I_{OUT} = 0, 50%, 100% I_{MAX}	1, 2, 3		50		50		50	mV
Load regulation [4]	V_{IN} = 16, 28, and 40 V dc I_{OUT} = 0, 50%, 100% I_{MAX}	1, 2, 3		50		50		50	mV
Cross regulation [5]	20% to 80% load change	1, 2, 3		15		8.0		8.0	%
Input current	I_{OUT} = 0 Pin 5 connected to pin 7	1, 2, 3		12		12		12	mA
	I_{OUT} = 0 Pin5 open			60		60		60	
Input ripple current [3, 4]	$I_{OUT} = I_{MAX}$	1, 2, 3		100		100		100	mA_{PP}
Efficiency [4]	$I_{OUT} = I_{MAX}$	1, 3	70		71		71		%
		2	66		68		68		
Isolation	Input to output or any pin to case (except pin 8) at 500 V dc, Tc = +25° C	1	100		100		100		MΩ
Capacitive load [6, 7]	No effect on dc performance, total for both outputs	4	200			200		200	µF
Power dissipation load fault	Overload [8]	1, 2, 3		4.0		4.0		4.0	W
	Short circuit			2.0		2.0		2.0	
Switching frequency [4]	$I_{OUT} = I_{MAX}$	4, 5, 6	500	600	500	600	500	600	KHz
Output response to step transient load changes [4, 9]	I_{OUT} = 50% ⇔ 100% I_{MAX}	4, 5, 6	-400	+400	-400	+400	-400	+400	mV pk
	I_{OUT} = 0 ⇔ 50% I_{MAX}		-800	+800	-800	+800	-800	+800	
Recovery time, step transient load changes [4, 9, 10]	I_{OUT} = 50% ⇔ 100% I_{MAX}	4, 5, 6		100		100		100	µs
	I_{OUT} = 0 ⇔ 50% I_{MAX}			2000		2000		2000	
Output response transient step line changes [4, 7, 11]	V_{IN} =16⇔ 40Vdc, I_{OUT}= I_{MAX}	4, 5, 6	-750	+750	- 750	+750	-750	+750	mV pk
Recovery time transient step line changes [4, 7, 10, 11]	V_{IN}=16⇔ 40Vdc, I_{OUT}= I_{MAX}	4, 5, 6		1200		1200		1200	µs
Turn on overshoot [4]	I_{OUT} = 0 and I_{MAX}	4, 5, 6		600		600		600	mV pk
Turn on delay [4, 12]	I_{OUT} = 0 and I_{MAX}	4, 5, 6		25		25		25	ms
Load fault recovery [7]		4, 5, 6		25		25		25	ms

For Notes to Specifications, refer to page 3

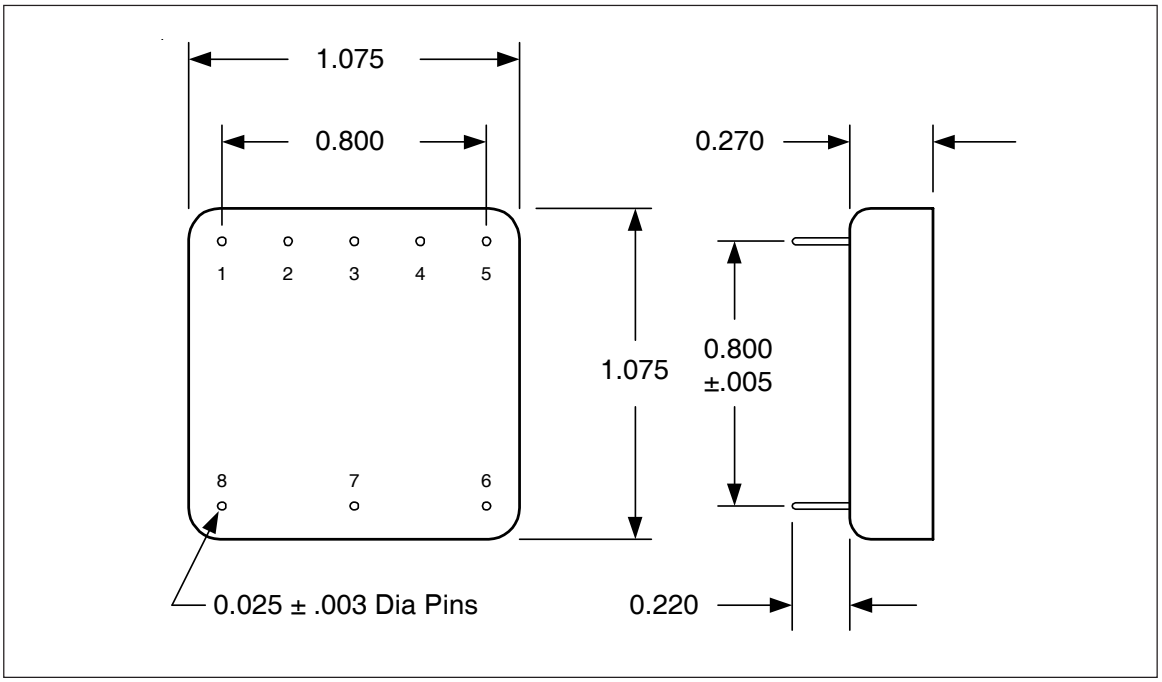
Notes to Specifications

1. Parameter guaranteed by line, load, and cross regulation tests.
2. Up to 80% of full power is available from either output provided the total output does not exceed 5W.
3. Bandwidth of DC to 20MHz is guaranteed by design. Tested for 20KHz to 2MHz.
4. Load current split equally between $+V_{OUT}$ and $-V_{OUT}$.
5. 1.0W load on output under test, 1.0W to 4.0W load change on other output.
6. Capacitive load may be any value from 0 to the maximum limit without compromising DC performance. A capacitive load in excess of the maximum limit will not disturb loop stability but may interfere with the operation of the load fault detection circuitry, appearing as a short circuit during turn-on.
7. Parameter shall be tested as part of design characterization and after design or process changes. Thereafter, parameters shall be guaranteed to the limits specified.
8. An overload is a condition with a load in excess of rated but less than that necessary to trigger the short circuit protection and is the condition of maximum power dissipation.
9. Load step transition time between 2µs and 10µs.
10. Recovery time is measured from the initiation of the transient to where V_{OUT} has returned to within ±1% of V_{OUT} at 50% load.
11. Input step transition time between 2µs and 10µs.
12. Turn-on delay time measurements is for either a step application of power at the input or the removal of ground connection from enable pin (pin 5) with power applied to the input.

Block Diagram



Mechanical Outline



Pin Designation

Pin #	Designation
1	+ Output
2	Output Return
3	- Output
4	NC
5	Inhibit
6	+ Input
7	Input Return
8	Case Ground

Standard Microcircuit Drawing Equivalence Table

Standard Microcircuit Drawing Number	IR Standard Part Number
5962-94649	ASA2815D
5962-95648	ASA2812D

Device Screening

Requirement	MIL-STD-883 Method	No Suffix	ES ②	HB	CH
Temperature Range	—	-20°C to +85°C	-55°C to +125°C ③	-55°C to +125°C	-55°C to +125°C
Element Evaluation	MIL-PRF-38534	N/A	N/A	N/A	Class H
Non-Destructive Bond Pull	2023	N/A	N/A	N/A	N/A
Internal Visual	2017	①	Yes	Yes	Yes
Temperature Cycle	1010	N/A	Cond B	Cond C	Cond C
Constant Acceleration	2001, Y1 Axis	N/A	500 Gs	3000 Gs	3000 Gs
PIND	2020	N/A	N/A	N/A	N/A
Burn-In	1015	N/A	48 hrs@hi temp	160 hrs@125°C	160 hrs@125°C
Final Electrical (Group A)	MIL-PRF-38534 & Specification	25°C	25°C ②	-55°C, +25°C, +125°C	-55°C, +25°C, +125°C
PDA	MIL-PRF-38534	N/A	N/A	N/A	10%
Seal, Fine and Gross	1014	Cond A	Cond A, C	Cond A, C	Cond A, C
Radiographic	2012	N/A	N/A	N/A	N/A
External Visual	2009	①	Yes	Yes	Yes

Notes:
① Best commercial practice
② Sample tests at low and high temperatures
③ -55°C to +105°C for AHE, ATO, ATW

Part Numbering

ASA 28 05 D /CH

- Model
- Input Voltage
  28 = 28V
- Output Voltage
  05 = ±5V
  12 = ±12V
  15 = ±15V
- Output
  D = Dual
- Screening Level
  (Please refer to Screening Table)
  No Suffix, ES, HB, CH

International
IOR Rectifier

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Data and specifications subject to change without notice. 01/2007