Standard Products

ACT 8634 Rad Hard DC-DC Converter Low-Voltage Module, 8 Outputs

Preliminary

www.aeroflex.com/POWER

June 29, 2004

Features

- Voltage Outputs
  - ±12V Primary side RTN3 Ground Reference
  - ±12V and ±15V RTN5 Ground Reference
  - +5.1V RTN4 Ground Reference
  - +5.1V RTN2 Ground Reference
- Power Package – 18 Leads, 2.75" x 1.85" x 0.500"
- Operating Case Temperature -55°C to +90°C
- Space Applications
- Radiation – Total Dose 100KRads (SI)

NOTE: Aeroflex Plainview does not currently have a DSCC certified Radiation Hardened Assurance Program

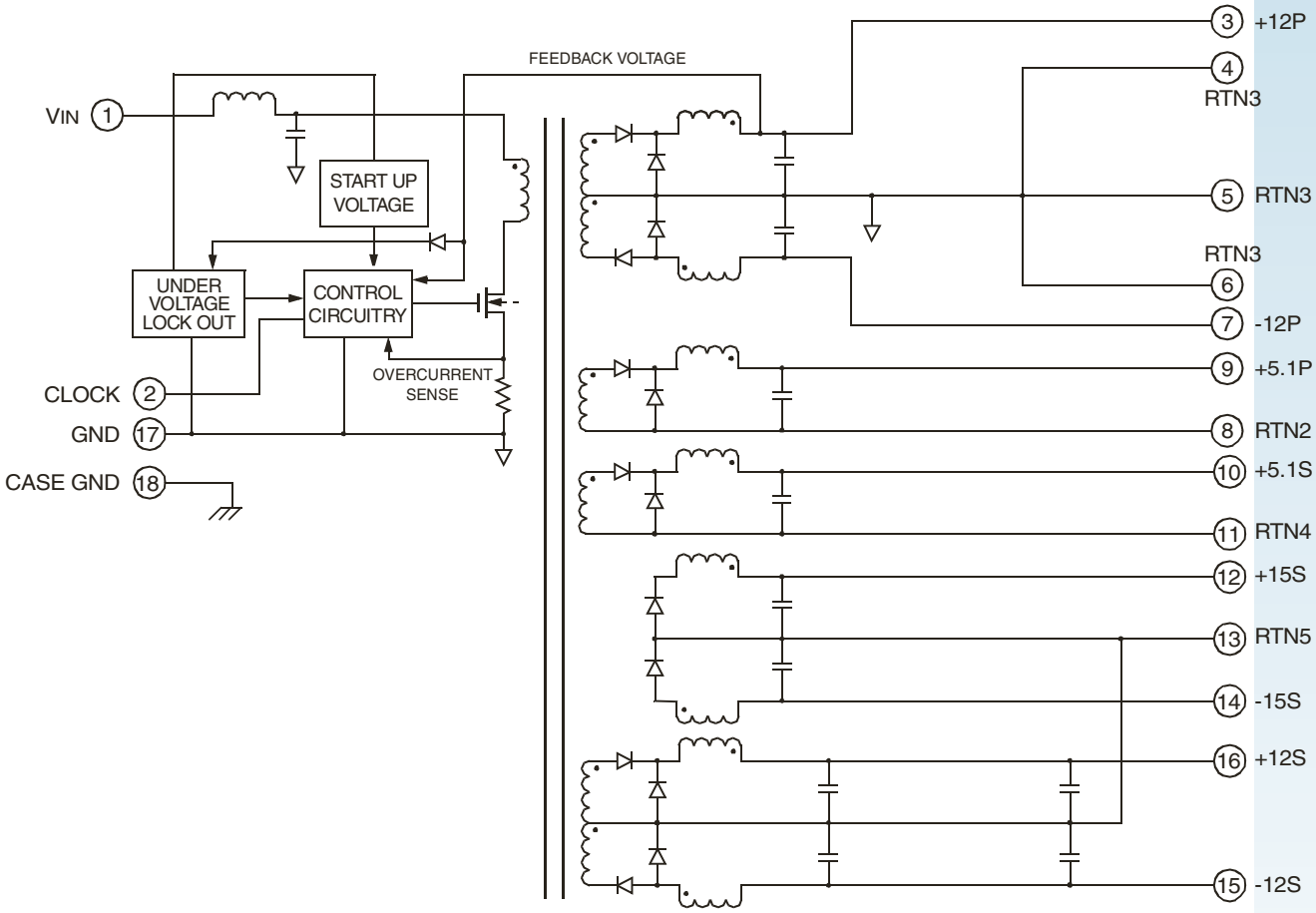


FIGURE 1 – FUNCTIONAL BLOCK DIAGRAM AND PIN CONNECTIONS

TABLE I – ABSOLUTE MAXIMUM RATINGS 1/

PARAMETER	RANGE	UNITS
Input Voltage, (V_{IN}) Max	52	Vdc, Steady State
Input Current, (I_{IN}) Max	8 2/	ADC
Input Voltage Rise Time	5 2/	V/µs
Junction Temperatures		
Diodes	+175	°C
Bipolar Transistors	+200	°C
Field Effect Transistors	+150	°C
Microcircuits	+150	°C
Storage Temperature	-65 to +150	°C
Radiation (Total Dose)	100	KRads (SI)

Notes

1/ Stresses greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device.

2/ Figure 3 illustrates an equivalent circuit for the input of the DC-DC Converter being driven by an input voltage, V_{IN}. The input voltage rise time shall be less than 5 V/µs, or a series resistor of 0.14 Ohm/Volt (supply voltage) shall be applied between the source and the device under test. The input current, I_{IN}, during start-up, must be limited (external to DC-DC Converter) to 8 A or less so that hybrid wire bonds are not overstressed.

TABLE II – RECOMMENDED OPERATING CONDITIONS

PARAMETERS	RANGE	UNIT
Input Voltage, (V_{IN})	13 to 52 3/ 4/	V_{DC}
Maximum Power Consumption/Dissipation at V_{IN} = 18V_{DC} and Tc = -55°C to +90°C 1/		
Input Power	11.0	W
Delivered Power	6.0	W
Power Dissipated	5.0 2/	W
Output Current	See Table III Output Voltage Conditions Currents 5/	
Operating Maximum Junction Temperatures 1/		
Diodes	+125	°C
Bipolar Transistors	+125	°C
Field Effect Transistors	+125	°C
Microcircuits	+100	°C

Notes:

1/ Derated per requirements of MIL-STD-975, REV K and meets or exceeds the Worst Case derating requirements of MIL-STD-1547, REV B.

2/ Figure 4 shows the Worst Case power supply efficiency for different input voltages and output power levels.

3/ For normal power supply DC-DC Converter operation, the source impedance to the power supply should be below the impedance curve illustrated in Figure 2 for frequencies between DC and 100 KHz.

4/ Figure 3 illustrates an equivalent circuit for the input of the DC-DC Converter being driven by an input voltage, V_{IN}. The input voltage rise time shall be less than 5 V/µs, or a series resistor of .14 Ohm/Volt (supply voltage) shall be applied between the source and the device under test. The input current, I_{IN}, during start-up, must be limited (external to DC-DC Converter) to 8 A or less so that hybrid wire bonds are not overstressed.

5/ Individual output currents can be less than specified in Table III provided the total delivered output power is 1.8 W or greater. Outputs that are loaded at levels less than the minimum load specified in Table III may not satisfy the respective maximum output voltage limit.

TABLE III – ELECTRICAL CHARACTERISTICS AND GROUP A INSPECTION (PRE-RADIATION)

TEST	SYM 5/ +	SYM 5/ -	CONDITIONS VIN	CONDITIONS LOAD CURRENT	SUB-GROUP 8/	MIN	MAX	UNITS
Output Voltage (Minimum to Maximum Load)	V12-13	+15S	13V, 52V, 18V 7/	6.7 ≤ IL ≤ 24.0 mA	1,2,3	13.73	15.78	VDC
	V14-13	-15S				-13.73	-15.78	
	V3-5	+12P		27.0 ≤ IL ≤ 101.0 mA		11.52	12.31	
	V7-5	-12P		24.1 ≤ IL ≤ 61.0 mA		-11.38	-12.44	
	V9-8	+5.1P		IL = 31.0 mA	1,3	4.865	5.366	
					2	4.865	5.480	
				IL = 137.0 mA	1,2,3	4.880	5.296	
				IL = 167.0 mA		4.865	5.366	
	V10-11	+5.1S		IL = 100.0 mA		4.78	5.362	
				IL = 216.0 mA		4.829	5.258	
				IL = 294.0 mA		4.78	5.362	
	V16-13	+12S		32.1 ≤ IL ≤ 83.0 mA		11.38	12.44	
	V15-13	-12S		28.8 ≤ IL ≤ 83.0 mA		-11.38	-12.44	
Efficiency 1 (Minimum Load)	$EFF1_{12-13}$	+15S	18V	IL = 6.7 mA	1	55	-	%
	$EFF1_{14-13}$	-15S			2	44	-	%
	$EFF1_{3-5}$	+12P		IL = 27.0 mA	3	42	-	%
	$EFF1_{7-5}$	-12P		IL = 24.1 mA				
	$EFF1_{9-8}$	+5.1P		IL = 31.0 mA				
	$EFF1_{10-11}$	+5.1S		IL = 100.0 mA				
	$EFF1_{16-13}$	+12S		IL = 32.1 mA				
	$EFF1_{15-13}$	-12S		IL = 28.8 mA				
Efficiency 2 (Nominal Load)	$EFF2_{12-13}$	+15S		IL = 13.3 mA	1	65	-	%
	$EFF2_{14-13}$	-15S			2,3	51	-	%
	$EFF2_{3-5}$	+12P		IL = 69.2 mA				
	$EFF2_{7-5}$	-12P		IL = 43.9 mA				
	$EFF2_{9-8}$	+5.1P		IL = 137.0 mA				
	$EFF2_{10-11}$	+5.1S		IL = 216.0 mA				
	$EFF2_{16-13}$	+12S		IL = 51.3 mA				
	$EFF2_{15-13}$	-12S		IL = 64.1 mA				

TABLE III – ELECTRICAL CHARACTERISTICS AND GROUP A INSPECTION (PRE-RADIATION) (con't)

TEST	SYM 5/ + -		CONDITIONS VIN	CONDITIONS LOAD CURRENT	SUB-GROUP 8/	MIN	MAX	UNITS
Efficiency 3 (Maximum Load)	$EFF3_{12-13}$	+15S	18V	I_L = 24.0 mA	1	69	-	%
	$EFF3_{14-13}$	-15S			2,3	55	-	%
	$EFF3_{3-5}$	+12P		I_L = 101.0 mA				
	$EFF3_{7-5}$	-12P		I_L = 61.0 mA				
	$EFF3_{9-8}$	+5.1P		I_L = 167.0 mA				
	$EFF3_{10-11}$	+5.1S		I_L = 294.0 mA				
	$EFF3_{16-13}$	+12S		I_L = 83.0 mA				
	$EFF3_{15-13}$	-12S						
Output Voltage Ripple BW = 20 MHz 4/ 9/ (Maximum Load)	$V_{RIP12-13}$	+15S	52V	1.66 ≤ C_L ≤ 3.40 µF $I_{L14-13} = I_{L12-13}$ = 24.0 mA	4,5,6	-	96	mVPP
	$V_{RIP14-13}$	-15S						
	V_{RIP3-5}	+12P		2.00 ≤ C_L ≤ 4.20 µF I_{L3-5} = 101.0 mA I_{L7-5} = 61.0 mA		-	77	
	V_{RIP7-5}	-12P						
	V_{RIP9-8}	+5.1P		3.97 ≤ C_L ≤ 8.40 µF I_{L9-8} = 167.0 mA I_{L10-11} = 294.0 mA		-	68	
	$V_{RIP10-11}$	+5.1S						
	$V_{RIP16-13}$	+12S		2.00 ≤ C_L ≤ 4.20 µF $I_{L15-13} = I_{L16-13}$ = 83.0 mA		-	77	
	$V_{RIP15-13}$	-12S						
Under Voltage Lockout Enable Output (Nominal Load)	V_{IN1}	+15S	-	$I_{L14-13} = I_{L12-13}$ = 13.3 mA	4,5,6	10.40	12.80	VDC
		-15S						
		+12P		I_{L3-5} = 69.2 mA I_{L7-5} = 43.9 mA				
		-12P						
		+5.1P		I_{L9-8} = 137.0 mA I_{L10-11} = 216.0 mA				
		+5.1S						
		+12S		I_{L16-13} = 51.3 mA I_{L15-13} = 64.1 mA				
		-12S						
Inrush Current 7/ V_{IN} Rate = 1 V/100 µS (Nominal Load)	I_{IN1}	+15S	-	$I_{L14-13} = I_{L12-13}$ = 13.3 mA	4,5,6	-	2.0	APK
		-15S						
		+12P		I_{L3-5} = 69.2 mA I_{L7-5} = 43.9 mA				
		-12P						
		+5.1P		I_{L9-8} = 137.0 mA I_{L10-11} = 216.0 mA				
		+5.1S						
		+12S		I_{L16-13} = 51.3 mA I_{L15-13} = 64.1 mA				
		-12S						

TABLE III – ELECTRICAL CHARACTERISTICS AND GROUP A INSPECTION (PRE-RADIATION) (con't)

TEST	SYM 5/	+ -	CONDITIONS VIN	CONDITIONS LOAD CURRENT	SUB-GROUP 8/	MIN	MAX	UNITS
Input Overload Current	I_{IN_2}	+15S	52V	Each Output R_{LOAD}< 0.1 Ω	4,5,6	-	0.15	ARMS
	I_{IN_3}	-15S						
	I_{IN_4}	+12P						
	I_{IN_5}	-12P						
	I_{IN_6}	+5.1P						
	I_{IN_7}	+5.1S						
	I_{IN_8}	+12S						
	I_{IN_9}	-12S						
Input Overload Current	$I_{IN_{10}}$	+15S	13V, 18V 7/	Each Output R_{LOAD}< 0.1 Ω	4,5,6	-	0.50	ARMS
	$I_{IN_{11}}$	-15S						
	$I_{IN_{12}}$	+12P						
	$I_{IN_{13}}$	-12P						
	$I_{IN_{14}}$	+5.1P						
	$I_{IN_{15}}$	+5.1S						
	$I_{IN_{16}}$	+12S						
	$I_{IN_{17}}$	-12S						
Turn-On Time 1/ (Maximum Load)	TON	+15S	14V	I_L = 24.0 mA	9,10,11	-	50	mS
		-15S						
		+12P		I_L = 101.0 mA				
		-12P		I_L = 61.0 mA				
		+5.1P		I_L = 167.0 mA				
		+5.1S		I_L = 294.0 mA				
		+12S		I_L = 83.0 mA				
		-12S						
Start-Up Overshoot	V_{OUT1} V_{OUT2}	+5.1P	52V, 13V 7/, 18V 7/	I_L = 31.0 mA I_L = 167.0 mA	9,10,11	-	300	mVPK
	V_{OUT3} V_{OUT4}	+5.1S		I_L = 100.0 mA I_L = 294.0 mA				
Shutdown Delay (Maximum Load)	TPULSE	+15S		I_L = 24.0 mA	9,10,11	Pass / Fail 2/		-
		-15S						
		+12P		I_L = 101.0 mA				
		-12P		I_L = 61.0 mA				
		+5.1P		I_L = 167.0 mA				
		+5.1S		I_L = 294.0 mA				
		+12S		I_L = 83.0 mA				
		-12S						

TABLE III – ELECTRICAL CHARACTERISTICS AND GROUP A INSPECTION (PRE-RADIATION) (con't)

TEST	SYM 5/ + -		CONDITIONS V_{IN}	CONDITIONS LOAD CURRENT	SUB-GROUP 8/	MIN	MAX	UNITS
Shutdown Recovery 1/ 3/ (Maximum Load)	T_{ON}	+15S	13V, 18V 7/, 52V 7/	I_L = 24.0 mA	9,10,11	-	50	mS
		-15S						
		+12P		I_L = 101.0 mA				
		-12P		I_L = 61.0 mA				
		+5.1P		I_L = 167.0 mA				
		+5.1S		I_L = 294.0 mA				
		+12S		I_L = 83.0 mA				
		-12S						
Isolation Leakage Current				Unpowered Test with 100V_{DC} across specified pins				
GND to RTN2	Leak1		-		1	0	5	µA
GND to RTN4	Leak2							
GND to RTN5	Leak3							
GND to Case	Leak4							
Chopper Trim Frequency Clock (Maximum Load)	f	+15S	18V	I_L = 24.0 mA	4	253	265	KHz
		-15S						
		+12P		I_L = 101.0 mA				
		-12P		I_L = 61.0 mA				
		+5.1P		I_L = 167.0 mA				
		+5.1S		I_L = 294.0 mA				
		+12S		I_L = 83.0 mA				
		-12S						
Pin 18 to Case Continuity	Ω	-	-	Unpowered Test	1	-	1	Ω

Notes:

1/ The time to go from 10 to 90% of steady state output voltage, measured on the slowest rising output.

2/ The power supply shall not shut down for an input voltage change from 18 to 12 Vdc that lasts for a duration of 100 µs at a rate up to 1 KHz with 10 to 90% rise time ≤ 10 µs, and 90 to 10% fall time ≤ 10 µs.

3/ Measure after removal of short circuit on output.

4/ Capacitors are ceramic and shall be placed external to the hybrid to meet specified output voltage ripple and to ensure that output voltages remain stable. Additional ceramic capacitors with a nominal value of 0.1 µf shall also be placed across GND to RTN2, GND to RTN4,and GND to RTN5 to meet specified output voltage ripple and electromagnetic interference (EMI) requirements. See ACT8634 Application note below.

5/ Place polarity of voltage probe across indicated case pin numbers.

7/ Specified limits are guaranteed but not tested.

8/ Subgroup 1, 2, 3: Static Tests at T_C = +25, +90, and -55°C, respectively.
Subgroup 4,5,6: Dynamic tests at T_C = +25, +90, and -55°C, respectively.
Subgroup 9, 10, 11: Switching tests at T_C = +25, +90, and -55°C, respectively.

9/ Capacitance on ±15S maybe redistributed, in the ratio of 15/12, to the ±12S V_{DC} supplies.

ACT8634 Application Note:

External capacitors are required on all Outputs to meet the ripple voltage requirements and to ensure outputs remain stable. The minimum and maximum capacitance values in Table III under the output voltage ripple section should not be exceeded.

Also, the maximum capacitance should include the effects of initial tolerance, temperature, and aging (e.g. maximum specified External Capacitance = 1 µF, Initial Tolerance = ±10%, Temperature = ±15%, Aging = ±12%, Nominal External Capacitance = 1 µF x (1 - .1 - .15 - .12) = .63 µF).

TABLE IV – ELECTRICAL CHARACTERISTICS (POST-RADIATION) 6/

TEST	SYM 5/ +	SYM 5/ -	CONDITIONS VIN	CONDITIONS LOAD CURRENT	CASE TEMP	MIN	MAX	UNITS
Output Voltage (Minimum to Maximum Load)	V12-13	+15S	13V, 52V, 18V	6.7 ≤ IL ≤ 24.0 mA	-55°C to +90°C	13.70	16.30	VDC
	V14-13	-15S				-13.70	-16.30	
	V3-5	+12P		27.0 ≤ IL ≤ 101.0 mA		11.40	12.60	
	V7-5	-12P		24.1 ≤ IL ≤ 61.0 mA		-11.04	-12.96	
	V9-8	+5.1P		IL = 31.0 mA	-55 to +60°C	4.75	5.45	
					+90°C	4.75	5.50	
				IL = 137.0 mA	-55° to +90°C	4.80	5.35	
				IL = 167.0 mA		4.75	5.45	
	V10-11	+5.1S		IL = 100.0 mA		4.75	5.45	
				IL = 216.0 mA		4.80	5.35	
				IL = 294.0 mA		4.75	5.45	
	V16-13	+12S		32.1 ≤ IL ≤ 83.0 mA		11.04	12.96	
	V15-13	-12S		28.8 ≤ IL ≤ 83.0 mA		-11.04	-12.96	
Efficiency 1 (Minimum Load)	$EFF1_{12-13}$	+15S	18V	IL = 6.7 mA	-55°C	40	-	%
	$EFF1_{14-13}$	-15S			0°C to +90°C	42	-	%
	$EFF1_{3-5}$	+12P		IL = 27.0 mA				
	$EFF1_{7-5}$	-12P		IL = 24.1 mA				
	$EFF1_{9-8}$	+5.1P		IL = 31.0 mA				
	$EFF1_{10-11}$	+5.1S		IL = 100.0 mA				
	$EFF1_{16-13}$	+12S		IL = 32.1 mA				
	$EFF1_{15-13}$	-12S		IL = 28.8 mA				
Efficiency 2 (Nominal Load)	$EFF2_{12-13}$	+15S	18V	IL = 13.3 mA	-55°C to +90°C	49	-	%
	$EFF2_{14-13}$	-15S						
	$EFF2_{3-5}$	+12P		IL = 69.2 mA				
	$EFF2_{7-5}$	-12P		IL = 43.9 mA				
	$EFF2_{9-8}$	+5.1P		IL = 137.0 mA				
	$EFF2_{10-11}$	+5.1S		IL = 216.0 mA				
	$EFF2_{16-13}$	+12S		IL = 51.3 mA				
	$EFF2_{15-13}$	-12S		IL = 64.1 mA				

TABLE IV – ELECTRICAL CHARACTERISTICS (POST-RADIATION) 6/ (con't)

TEST	SYM 5/ + -		CONDITIONS VIN	CONDITIONS LOAD CURRENT	CASE TEMP	MIN	MAX	UNITS
Efficiency 3 (Maximum Load)	$EFF3_{12-13}$	+15S	18V	I_L = 24.0 mA	-55°C to +90°C	53	-	%
	$EFF3_{14-13}$	-15S						
	$EFF3_{3-5}$	+12P		I_L = 101.0 mA				
	$EFF3_{7-5}$	-12P		I_L = 61.0 mA				
	$EFF3_{9-8}$	+5.1P		I_L = 167.0 mA				
	$EFF3_{10-11}$	+5.1S		I_L = 294.0 mA				
	$EFF3_{16-13}$	+12S		I_L = 83.0 mA				
	$EFF3_{15-13}$	-12S						
Output Voltage Ripple BW = 20 MHz 4/ (Maximum Load)	$V_{RIP12-13}$	+15S	52V	1.66 ≤ C_L ≤ 3.40 µF $I_{L14-13} = I_{L12-13}$ = 24.0 mA	-55°C to +90°C	-	100	mV_{PP}
	$V_{RIP14-13}$	-15S						
	V_{RIP3-5}	+12P		2.00 ≤ C_L ≤ 4.20 µF I_{L3-5} = 101.0 mA I_{L7-5} = 61.0 mA				
	V_{RIP7-5}	-12P						
	V_{RIP9-8}	+5.1P		3.97 ≤ C_L ≤ 8.40 µF I_{L9-8} = 167.0 mA I_{L10-11} = 294.0 mA				
	$V_{RIP10-11}$	+5.1S						
	$V_{RIP16-13}$	+12S		2.00 ≤ C_L ≤ 4.20 µF $I_{L15-13} = I_{L16-13}$ = 83.0 mA				
	$V_{RIP15-13}$	-12S						
Under Voltage Lockout Enable Output (Nominal Load)	V_{IN1}	+15S	-	$I_{L14-13} = I_{L12-13}$ = 13.3 mA	-55°C to +90°C	10.40	13.00	V_{DC}
		-15S						
		+12P		I_{L3-5} = 69.2 mA I_{L7-5} = 43.9 mA				
		-12P						
		+5.1P		I_{L9-8} = 137.0 mA I_{L10-11} = 216.0 mA				
		+5.1S						
		+12S		I_{L16-13} = 51.3 mA I_{L15-13} = 64.1 mA				
		-12S						
Inrush Current V_{IN} Rate = 1 V/100 µS (Nominal Load)	I_{IN1}	+15S	-	$I_{L14-13} = I_{L12-13}$ = 13.3 mA	-55°C to +90°C	-	2.0	A_{PK}
		-15S						
		+12P		I_{L3-5} = 69.2 mA I_{L7-5} = 43.9 mA				
		-12P						
		+5.1P		I_{L9-8} = 137.0 mA I_{L10-11} = 216.0 mA				
		+5.1S						
		+12S		I_{L16-13} = 51.3 mA I_{L15-13} = 64.1 mA				
		-12S						

TABLE IV – ELECTRICAL CHARACTERISTICS (POST-RADIATION) 6/ (con't)

TEST	SYM 5/	+ -	CONDITIONS VIN	CONDITIONS LOAD CURRENT	CASE TEMP	MIN	MAX	UNITS
Input Overload Current	I_{IN_2}	+15S	52V	Each Output R_{LOAD}< 0.1 Ω	-55°C to +90°C	-	0.15	ARMS
	I_{IN_3}	-15S						
	I_{IN_4}	+12P						
	I_{IN_5}	-12P						
	I_{IN_6}	+5.1P						
	I_{IN_7}	+5.1S						
	I_{IN_8}	+12S						
	I_{IN_9}	-12S						
Input Overload Current	$I_{IN_{10}}$	+15S	13V, 18V	Each Output R_{LOAD}< 0.1 Ω	-55°C to +90°C	-	0.50	ARMS
	$I_{IN_{11}}$	-15S						
	$I_{IN_{12}}$	+12P						
	$I_{IN_{13}}$	-12P						
	$I_{IN_{14}}$	+5.1P						
	$I_{IN_{15}}$	+5.1S						
	$I_{IN_{16}}$	+12S						
	$I_{IN_{17}}$	-12S						
Turn-On Time 1/ (Maximum Load)	TON	+15S	20V	IL = 24.0 mA	-55°C to +90°C	-	50	mS
		-15S						
		+12P		IL = 101.0 mA				
		-12P		IL = 61.0 mA				
		+5.1P		IL = 167.0 mA				
		+5.1S		IL = 294.0 mA				
		+12S		IL = 83.0 mA				
		-12S						
Start-Up Overshoot	V_{OUT1} V_{OUT2}	+5.1P	52V, 13V, 18V	IL = 31.0 mA IL = 167.0 mA	-55°C to +90°C	-	300	mVPK
	V_{OUT3} V_{OUT4}	+5.1S		IL = 100.0 mA IL = 294.0 mA				
Shutdown Delay (Maximum Load)	TPULSE	+15S	-	IL = 24.0 mA	-55° to +90°C	Pass / Fail 2/		-
		-15S						
		+12P		IL = 101.0 mA				
		-12P		IL = 61.0 mA				
		+5.1P		IL = 167.0 mA				
		+5.1S		IL = 294.0 mA				
		+12S		IL = 83.0 mA				
		-12S						

TABLE IV – ELECTRICAL CHARACTERISTICS (POST-RADIATION) 6/ (con't)

TEST	SYM 5/ + -		CONDITIONS VIN	CONDITIONS LOAD CURRENT	CASE TEMP	MIN	MAX	UNITS
Shutdown Recovery 1/ 3/ (Maximum Load)	TON	+15S	13V, 18V, 52V	IL = 24.0 mA	-55°C to +90°C	-	50	mS
		-15S						
		+12P		IL = 101.0 mA				
		-12P		IL = 61.0 mA				
		+5.1P		IL = 167.0 mA				
		+5.1S		IL = 294.0 mA				
		+12S		IL = 83.0 mA				
		-12S						
Isolation Leakage Current				Unpowered Test with 100VDC across specified pins				
GND to RTN2	Leak1		-		+25°C	0	10	µA
GND to RTN4	Leak2							
GND to RTN5	Leak3							
GND to Case	Leak4							

Notes:

1/ The time to go from 10 to 90% of steady state output voltage, measured on the slowest rising output.

2/ The power supply shall not shut down for an input voltage change from 18 to 12 Vdc that lasts for a duration of 100 µs at a rate up to 1 KHz with 10 to 90% rise time ≤ 10 µs, and 90 to 10% fall time ≤ 10 µs.

3/ Measure after removal of short circuit on output.

4/ Capacitors are ceramic and shall be placed external to the hybrid to meet specified output voltage ripple and to ensure that output voltages remain stable. Additional ceramic capacitors with a nominal value of 0.1 µf shall also be placed across GND to RTN2, GND to RTN4,and GND to RTN5 to meet specified output voltage ripple.

5/ Place polarity of voltage probe across indicated case pin numbers.

6/ Guaranteed by design.

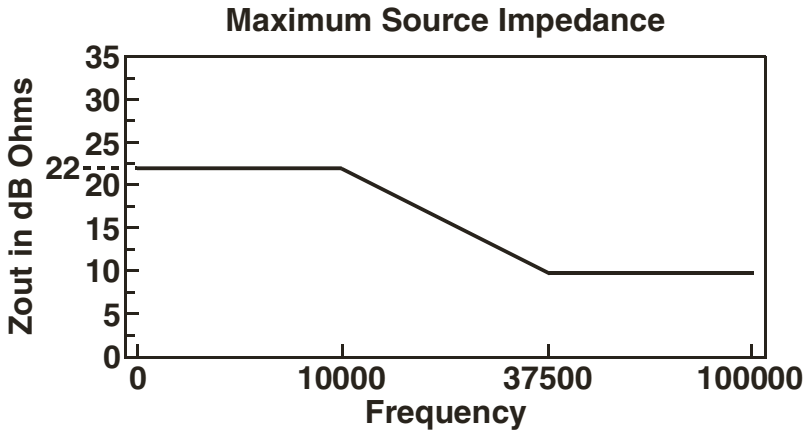


FIGURE 2 – RECOMMENDED SOURCE IMPEDANCE CURVE

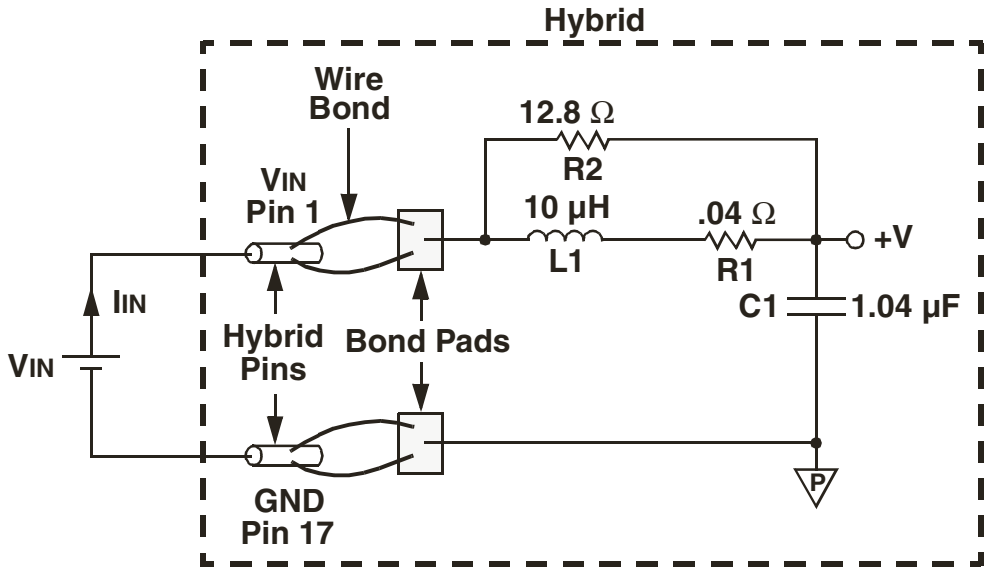


FIGURE 3 – EQUIVALENT CIRCUIT FOR INPUT OF DC-DC CONVERTER

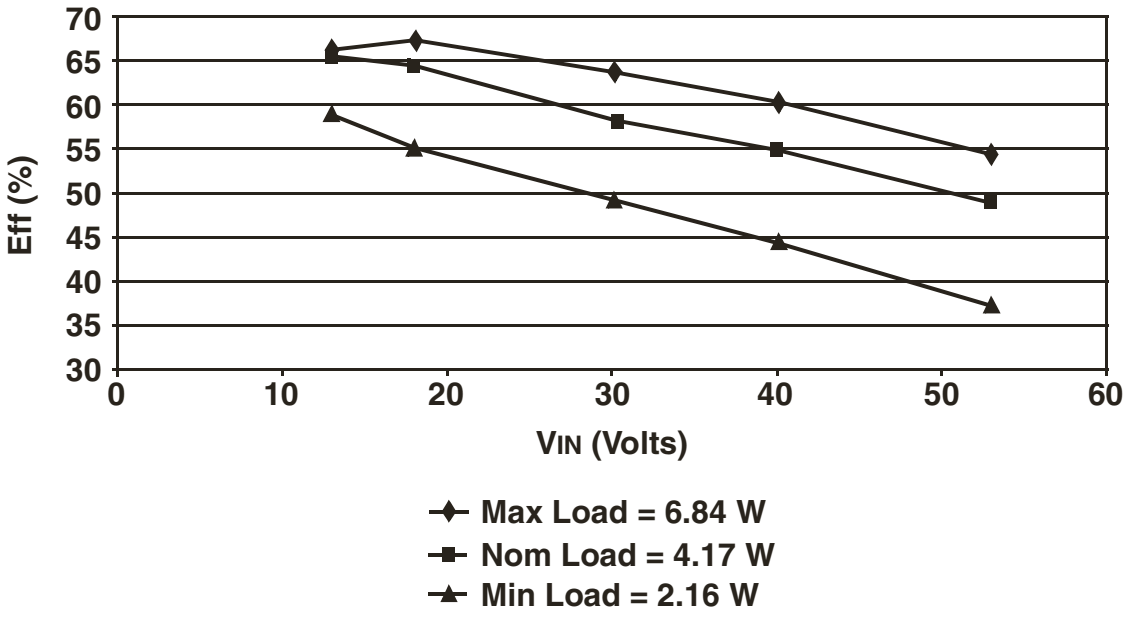
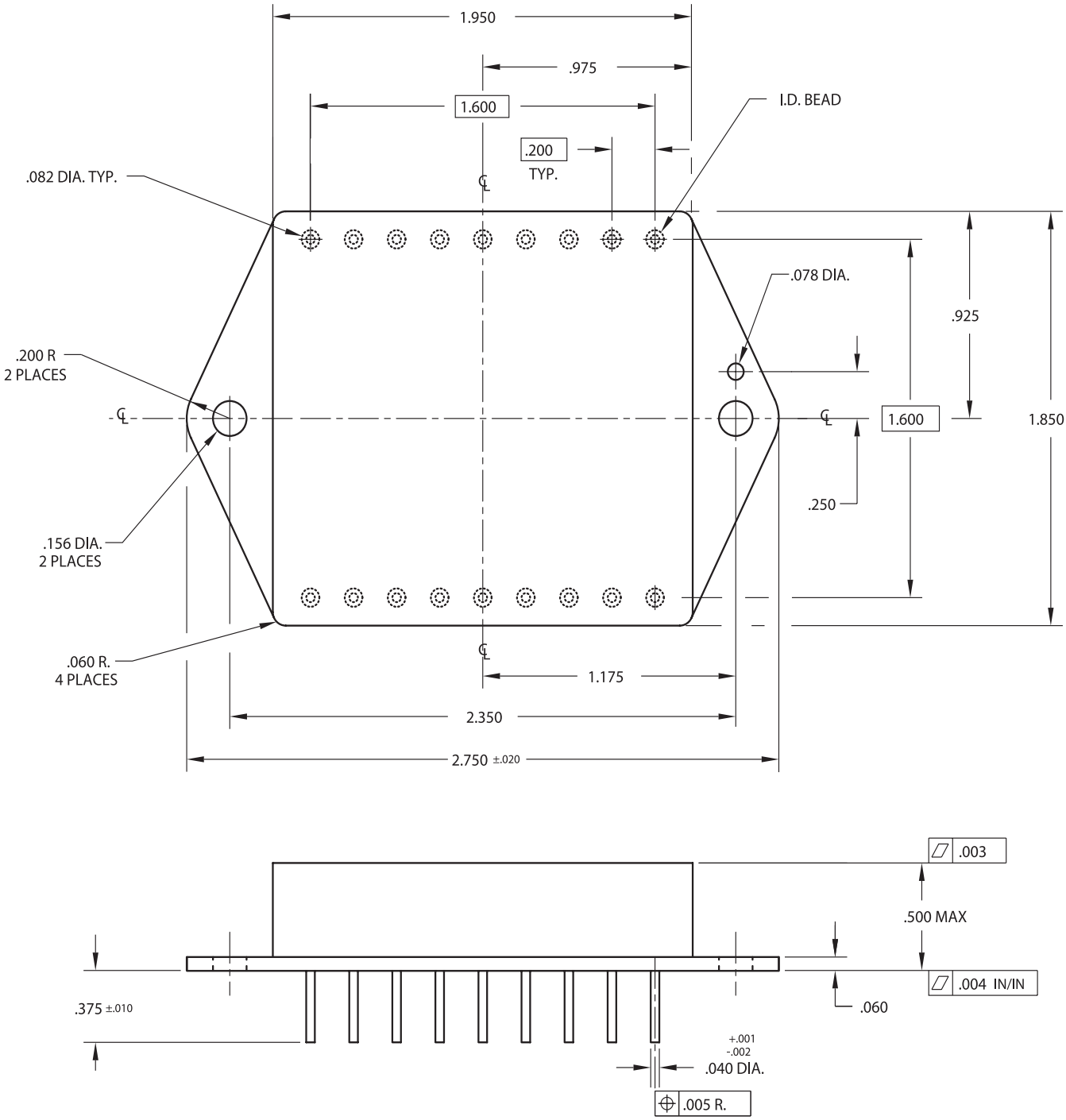


FIGURE 4 – POWER SUPPLY DC-DC CONVERTER VS WORST CASE EFFICIENCY

Top View



Notes:
1. Package contains BeO substrate.
2. Dimensions Tolerance, unless otherwise noted:
   2 Place Decimal ±.010
   3 Place Decimal ±.005
3. Pin Tolerance: At true position within .005, 2 sides, as shown.

FIGURE 5 – POWER PACKAGE OUTLINE

ORDERING INFORMATION

MODEL NUMBER	SCREENING
ACT8634-S	Case Operating Temperature Range -55°C to +90°C, Screened to the individual test methods of MIL-STD-883 for Space Applications
ACT8634-7	Commercial Flow, 25°C testing only

TABLE V – PIN NUMBERS VS FUNCTION

PIN	FUNCTION	PIN	FUNCTION
1	VIN	10	+5.1S
2	CLOCK	11	RTN4
3	+12P	12	+15S
4	RTN3	13	RTN5
5	RTN3	14	-15S
6	RTN3	15	-12S
7	-12P	16	+12S
8	RTN2	17	GND
9	+5.1P	18	CASE GND

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