

REVISIONS

Rev No.	ECO No.	Description	Checked	Approved	Date
1.0		Initial release for EM2			
A		Flight release			
B		Created separate 5V supply node for A/D reference inputs (+5VADREF)			10/03/03

NOTES :

- Component values are shown for reference only. See parts list for controlled values.



NAME	DATE
Drawn: fjlarosa	10-9-98
Checked:	
Approved:	
Released:	

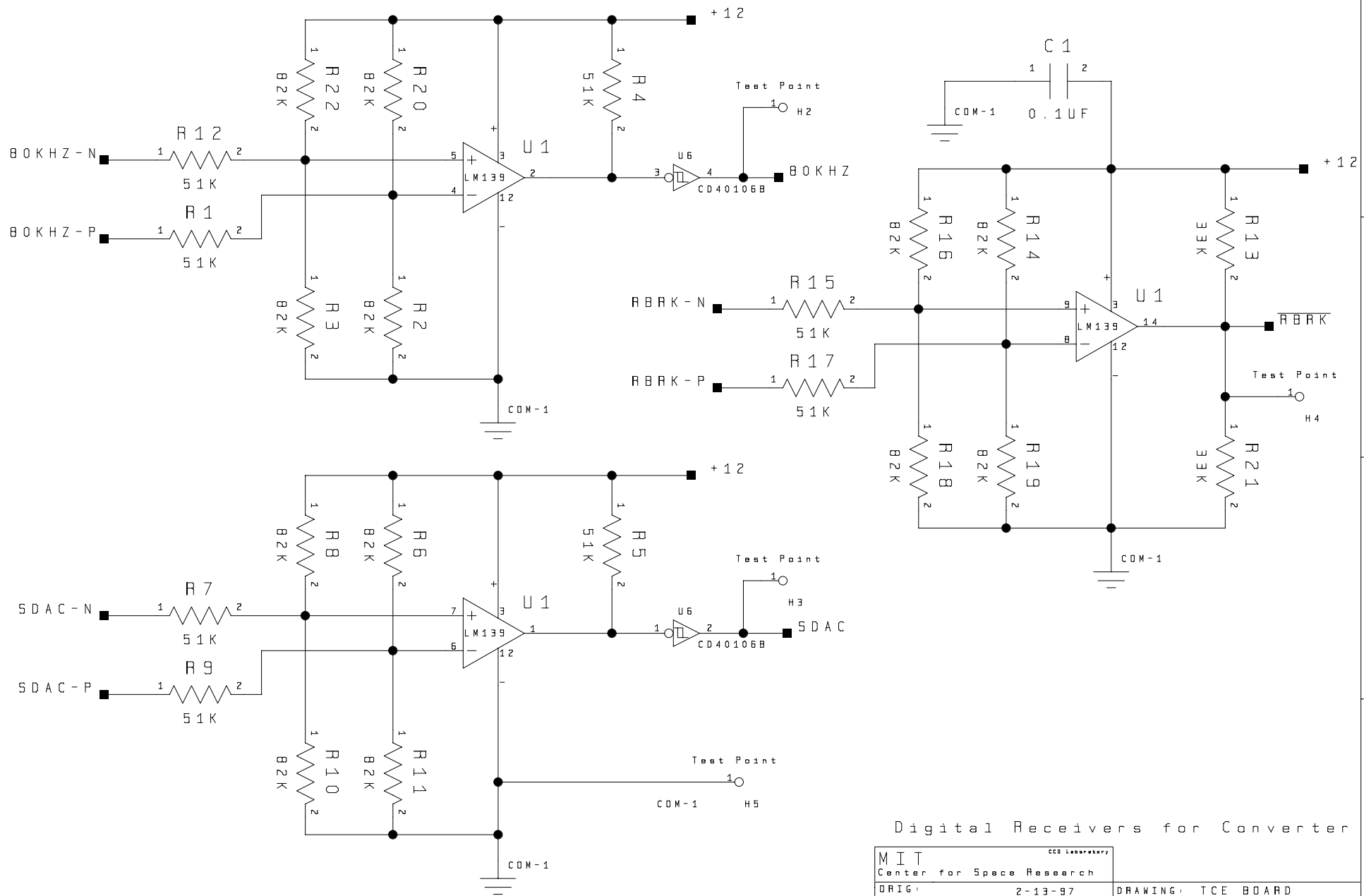
MIT CENTER FOR SPACE RESEARCH

ASTROE-2
THERMAL CONTROL ELECTRONICS
(TCE) BOARD

Sheet filename:

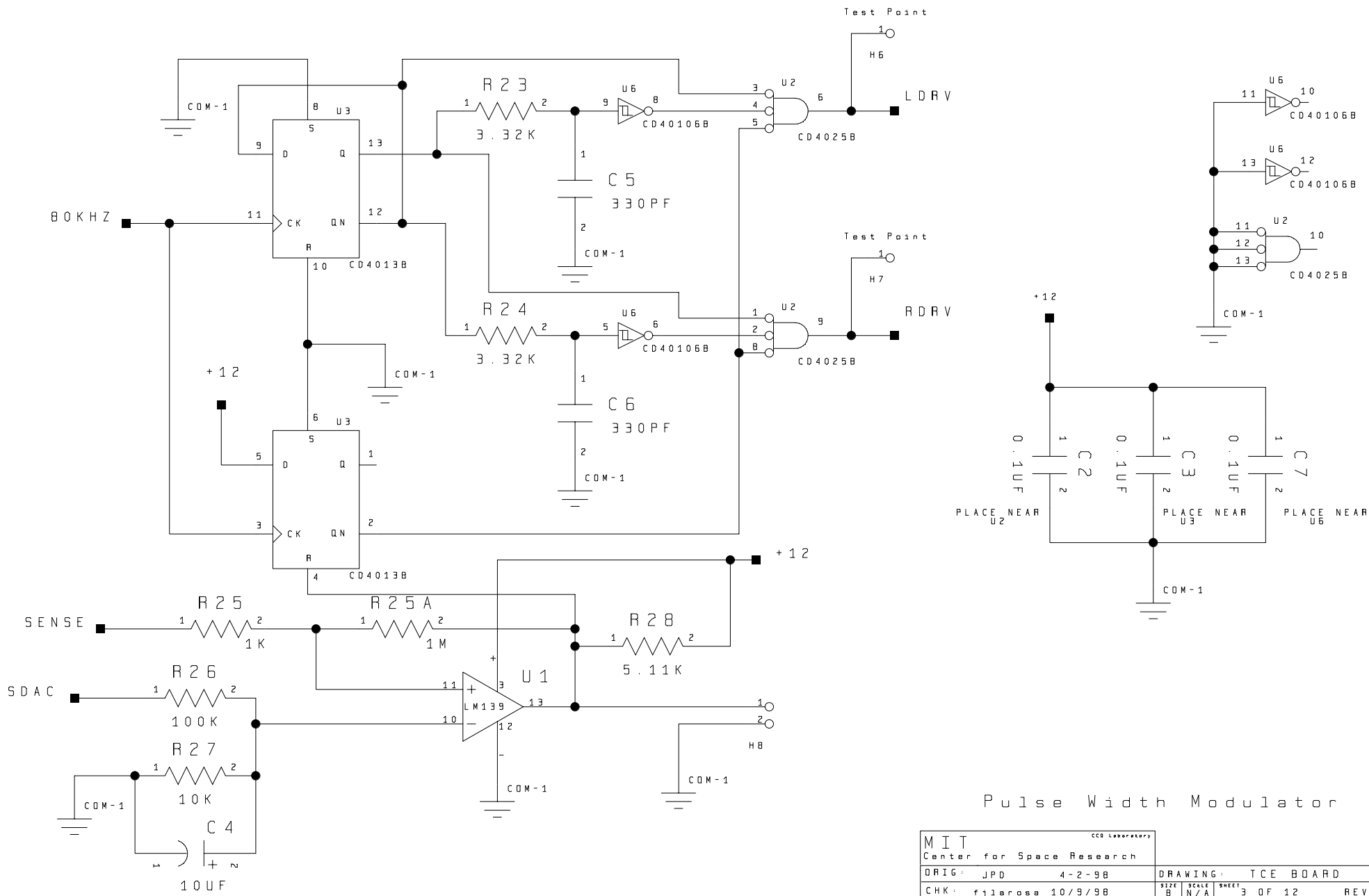
Size	Code Identification No.	Drawing No.	Rev.
B		30-05001.02	B

Scale: Sheet: 1 of 12



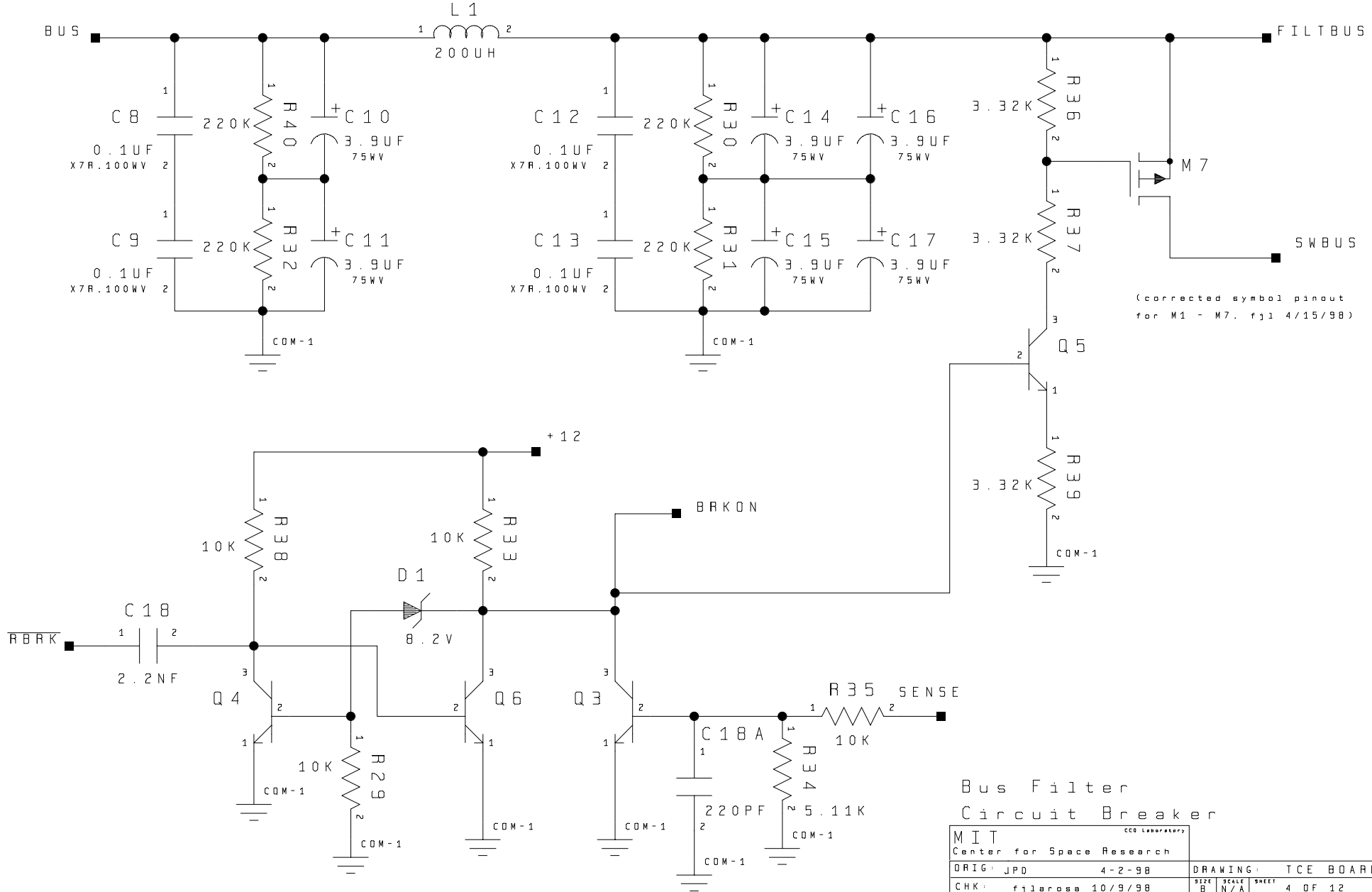
Digital Receivers for Converter

MIT Center for Space Research		CCO Laboratory	
DRIG: JPD	2-13-97	DRAWING: TCE BOARD	
CHK: fjlardss	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 2	OF 12
		REV-B	



Pulse Width Modulator

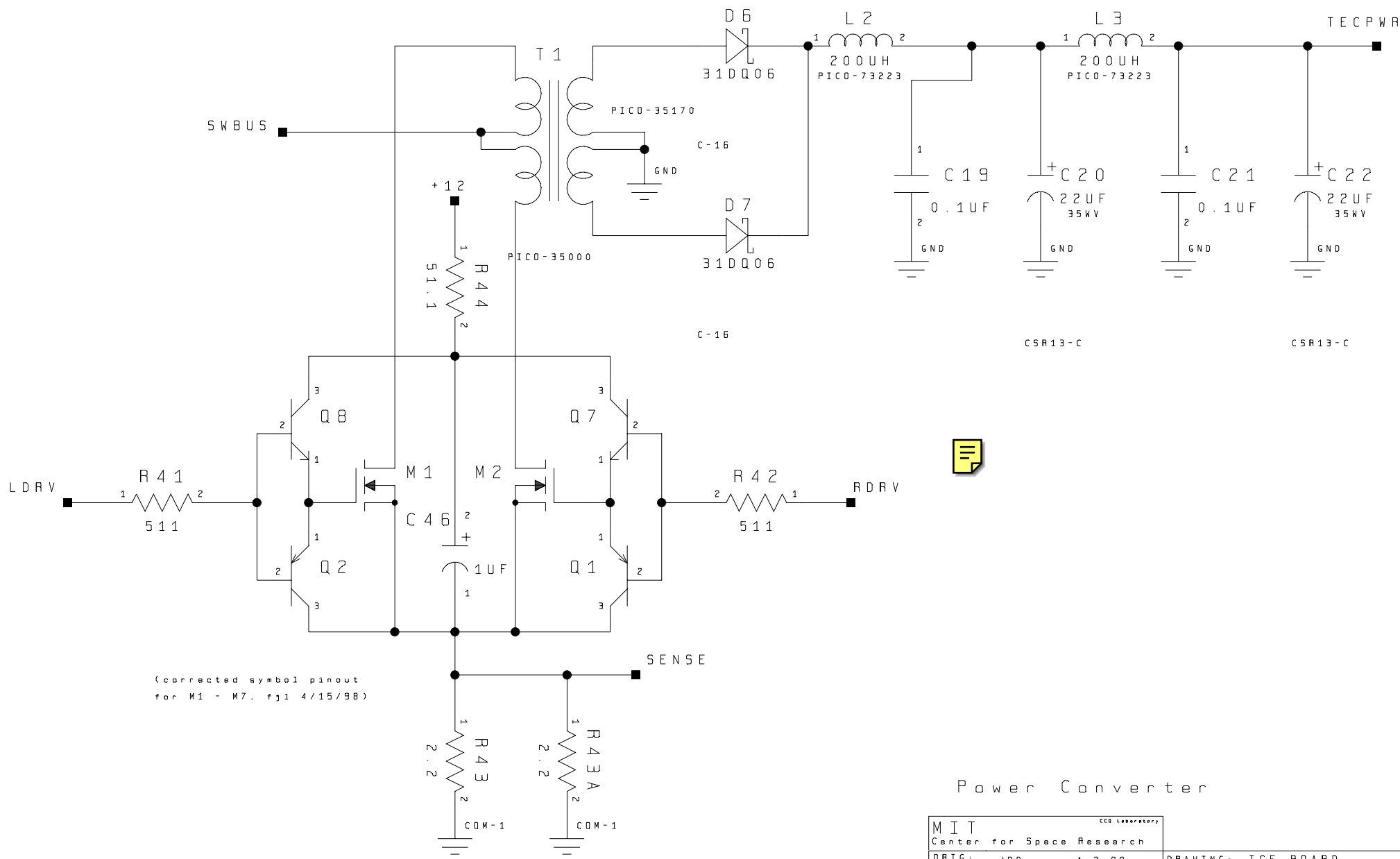
MIT Center for Space Research		CCO Laboratory	
ORIG: JPD	4-2-98	DRAWING: TCE BOARD	
CHK: fillerosa	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 3 OF 12	REV: B



(corrected symbol pinout for M1 - M7. fjl 4/15/98)

Bus Filter Circuit Breaker

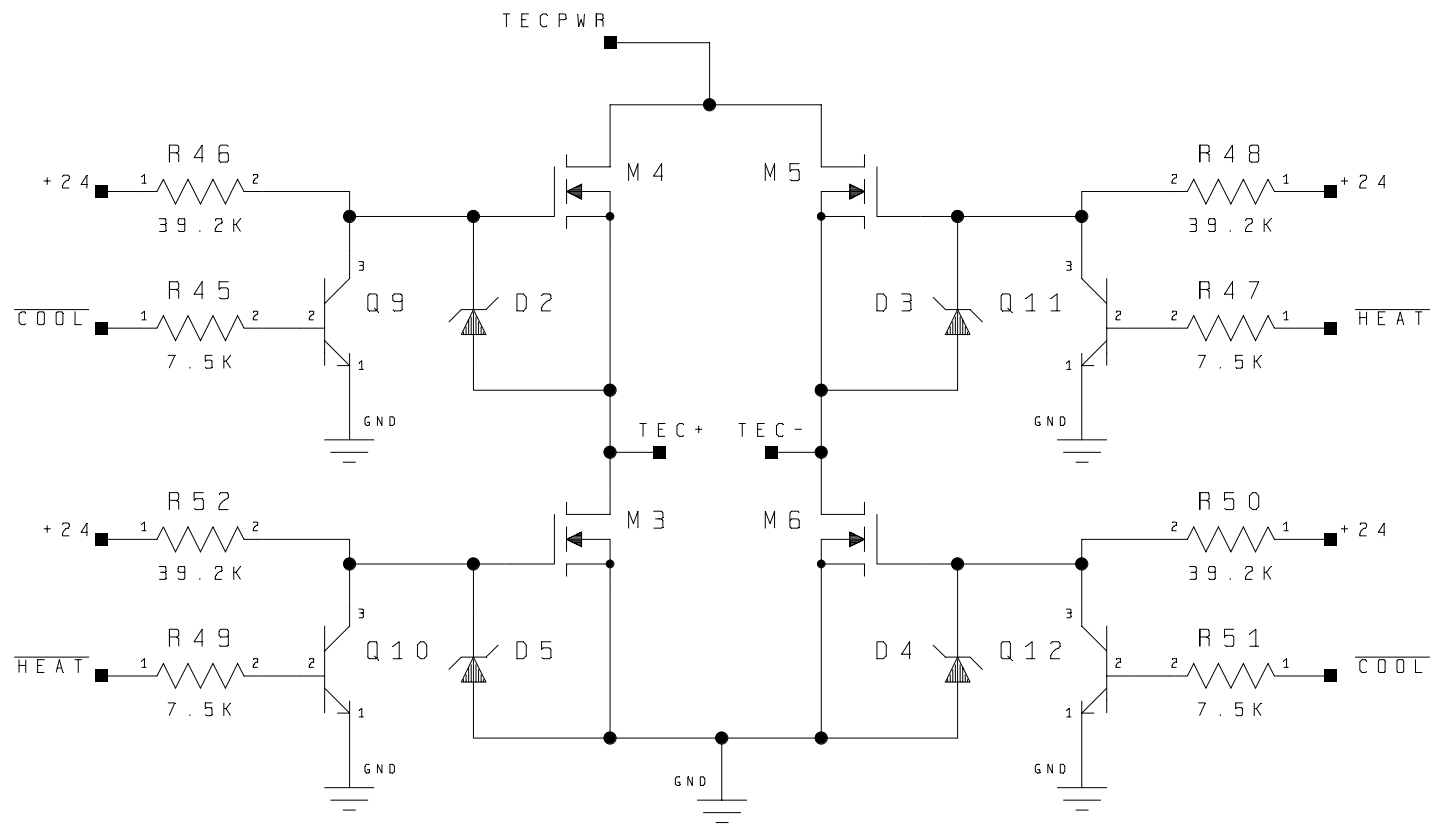
MIT Center for Space Research		CCO Laboratory	
ORIG: JPD	4-2-98	DRAWING: TCE BOARD	
CHK: fjlrosa	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 4 OF 12	REV: B



(corrected symbol pinout
for M1 - M7. fjl 4/15/98)

Power Converter

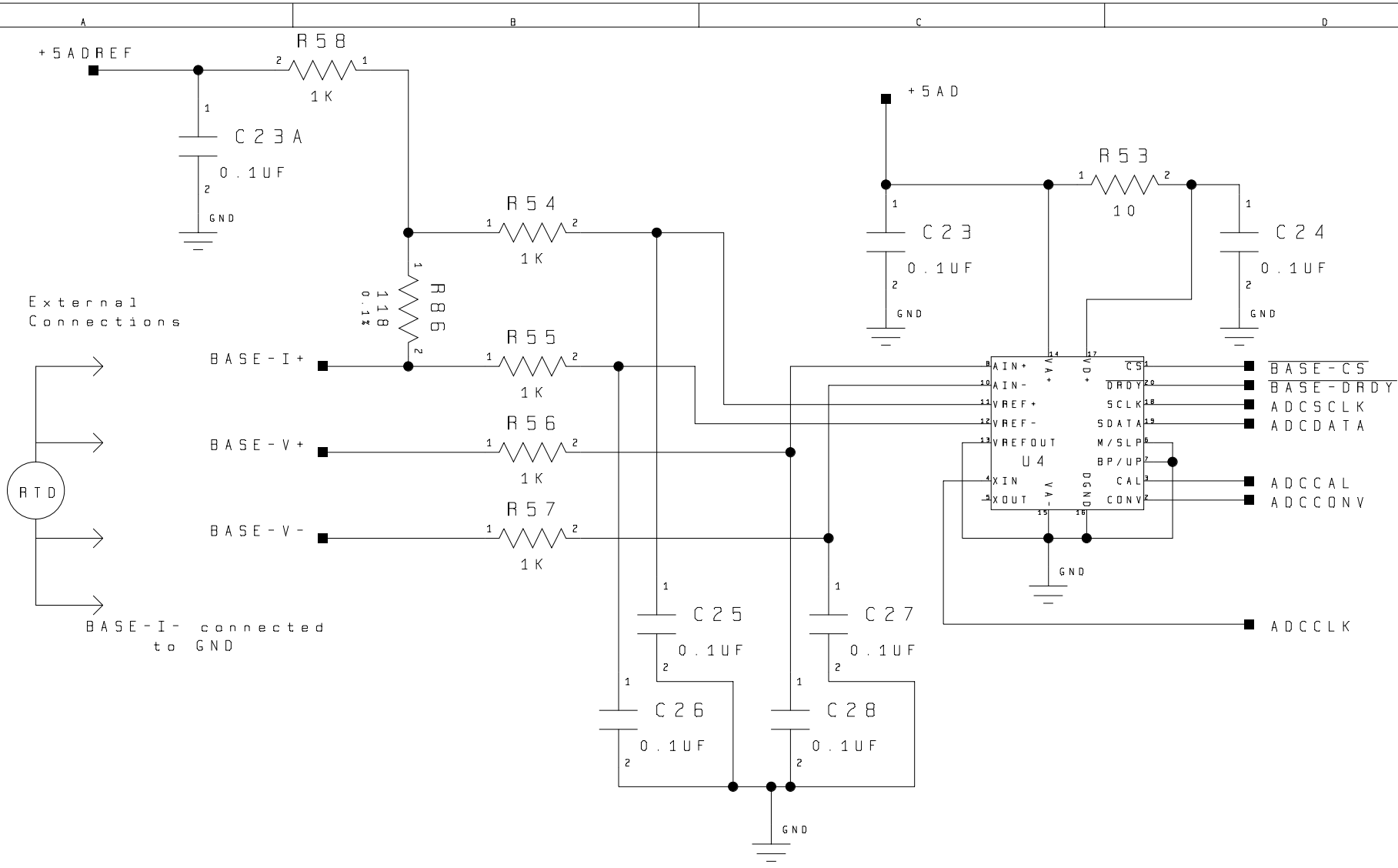
MIT Center for Space Research		CCO Laboratory	
DRIG: JPD	4-2-98	DRAWING: TCE BOARD	
CHK: fjl1arosa	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 5 OF 12	REV: B



(corrected symbol pinout
for M1 - M7. fjl 4/15/98)

TEC Polarity Switch

MIT Center for Space Research		CCO Laboratory	
DRIG: JPD	1-29-97	DRAWING: TCE BOARD	
CHK: fjlarosa	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 6 OF 12	REV: B



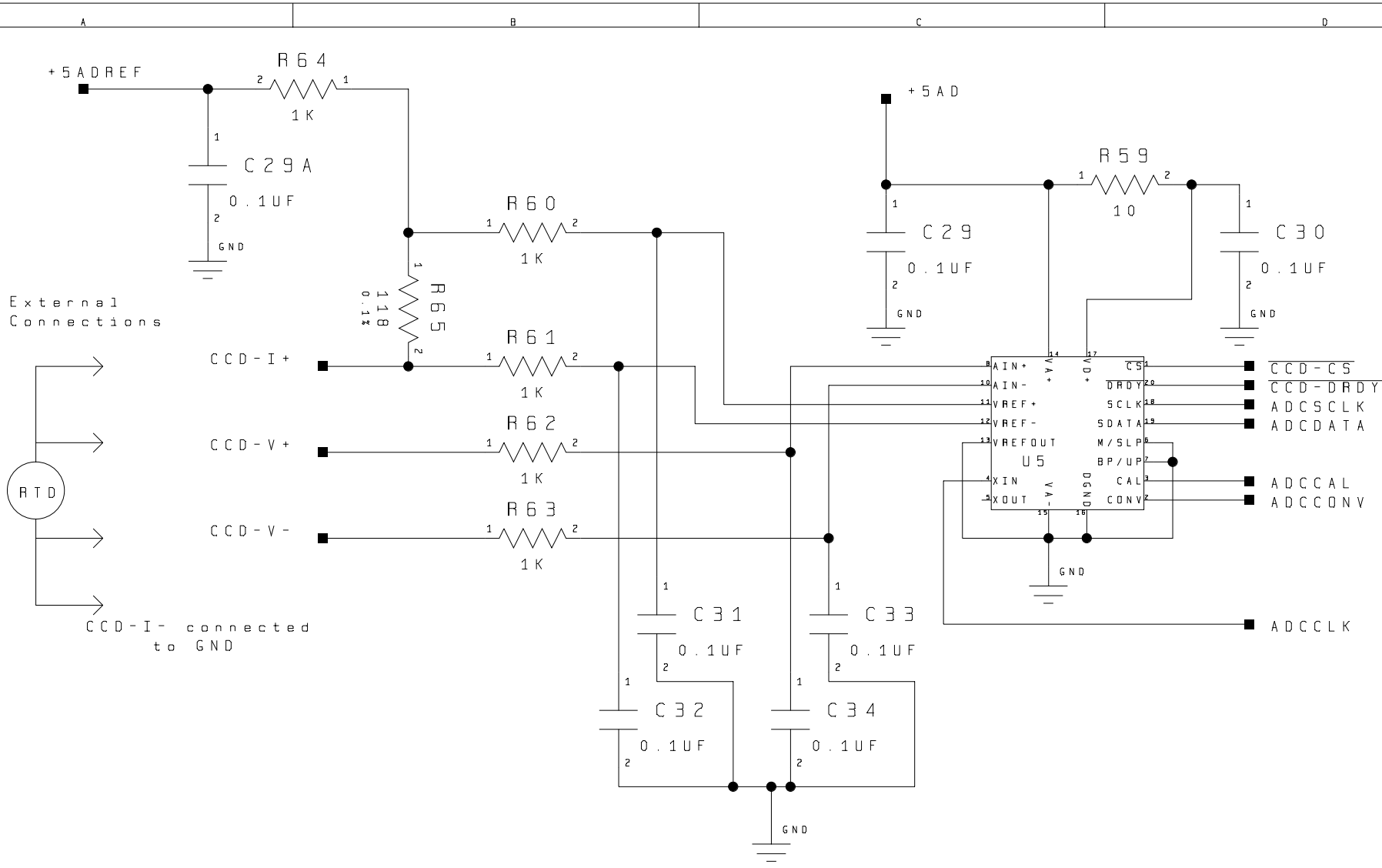
External Connections

RTD

BASE-I- connected to GND

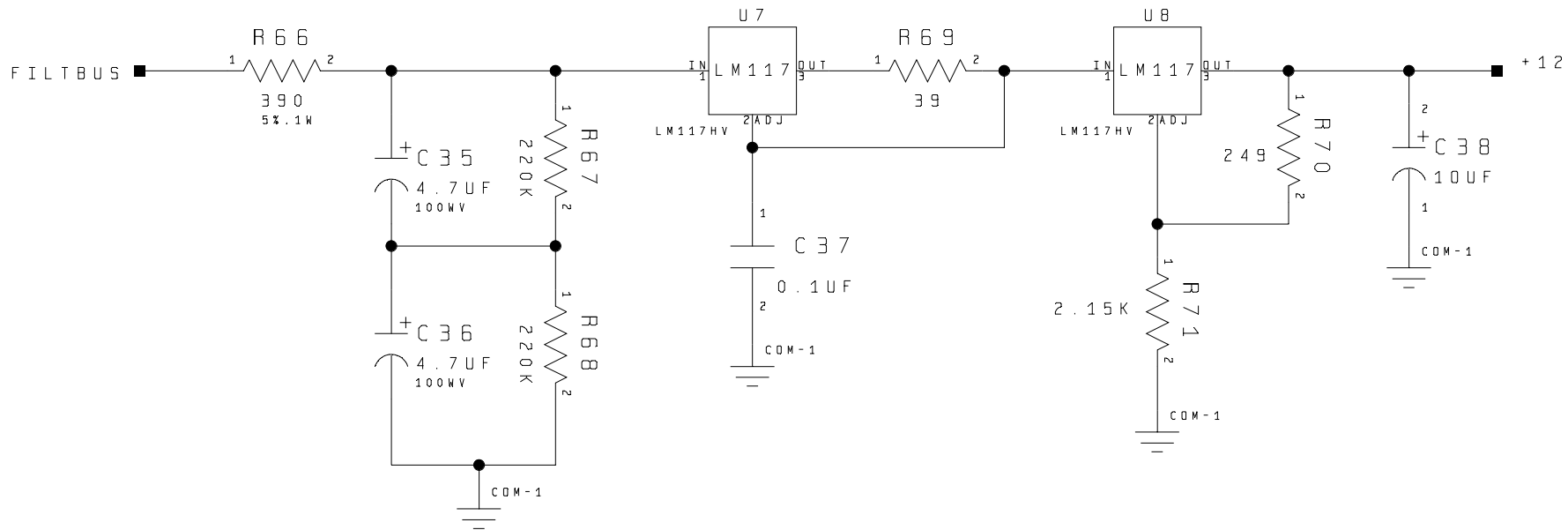
Base Thermometry

MIT		CCO Laboratory	
Center for Space Research			
ORIG: JPD	2-13-97	DRAWING: TCE BOARD	
CHK: fjlara	10/03/03	SIZE: B	SCALE: N/A
		SHEET: 7 OF 12	REV: B



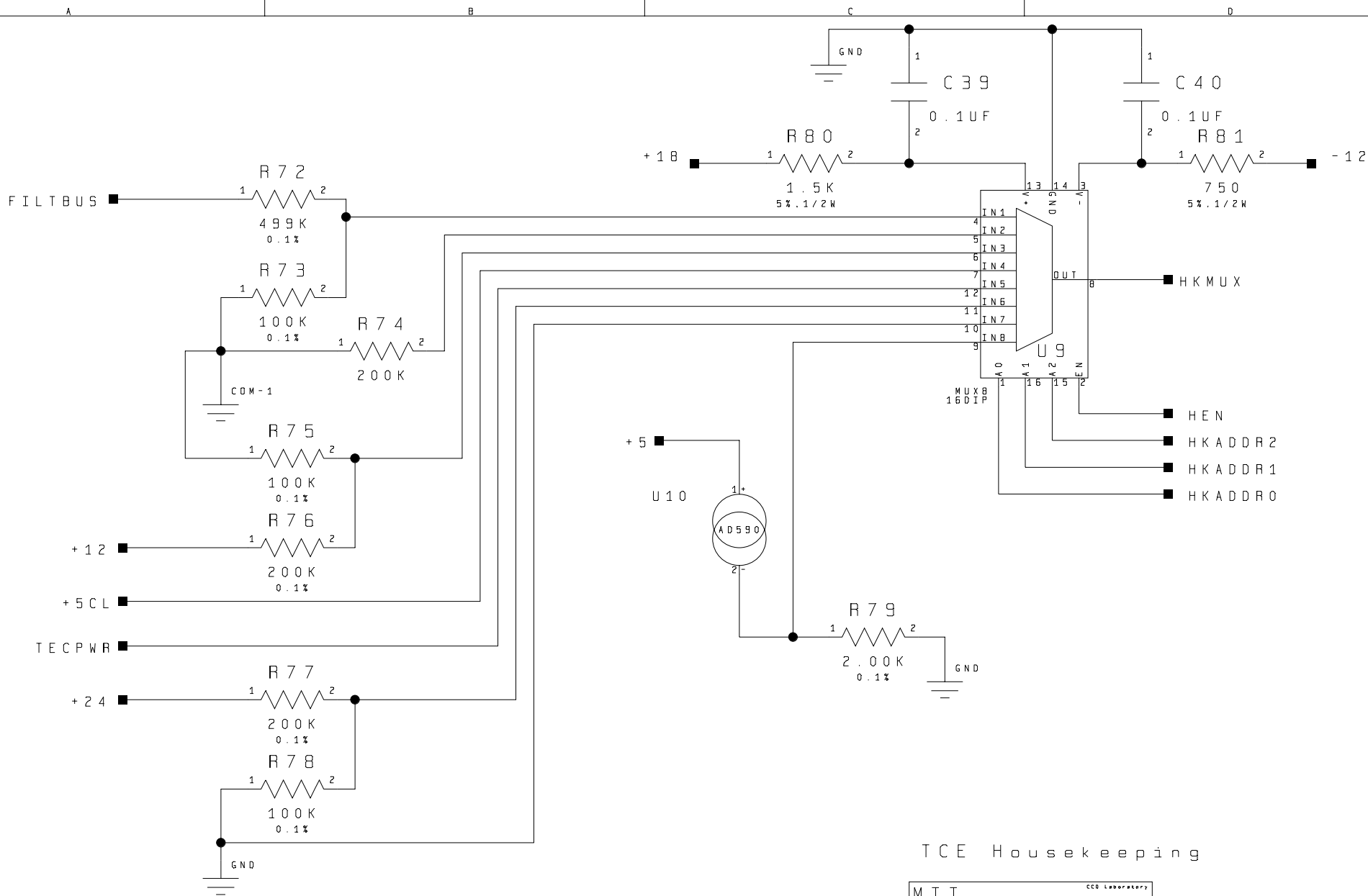
CCD Thermometry

MIT Center for Space Research		CCD Laboratory	
ORIG: JPD	2-13-97	DRAWING: TCE BOARD	
CHK: fjlrosa	10/03/03	SIZE: B	SCALE: N/A
		SHEET: B	OF 12
			REV-B



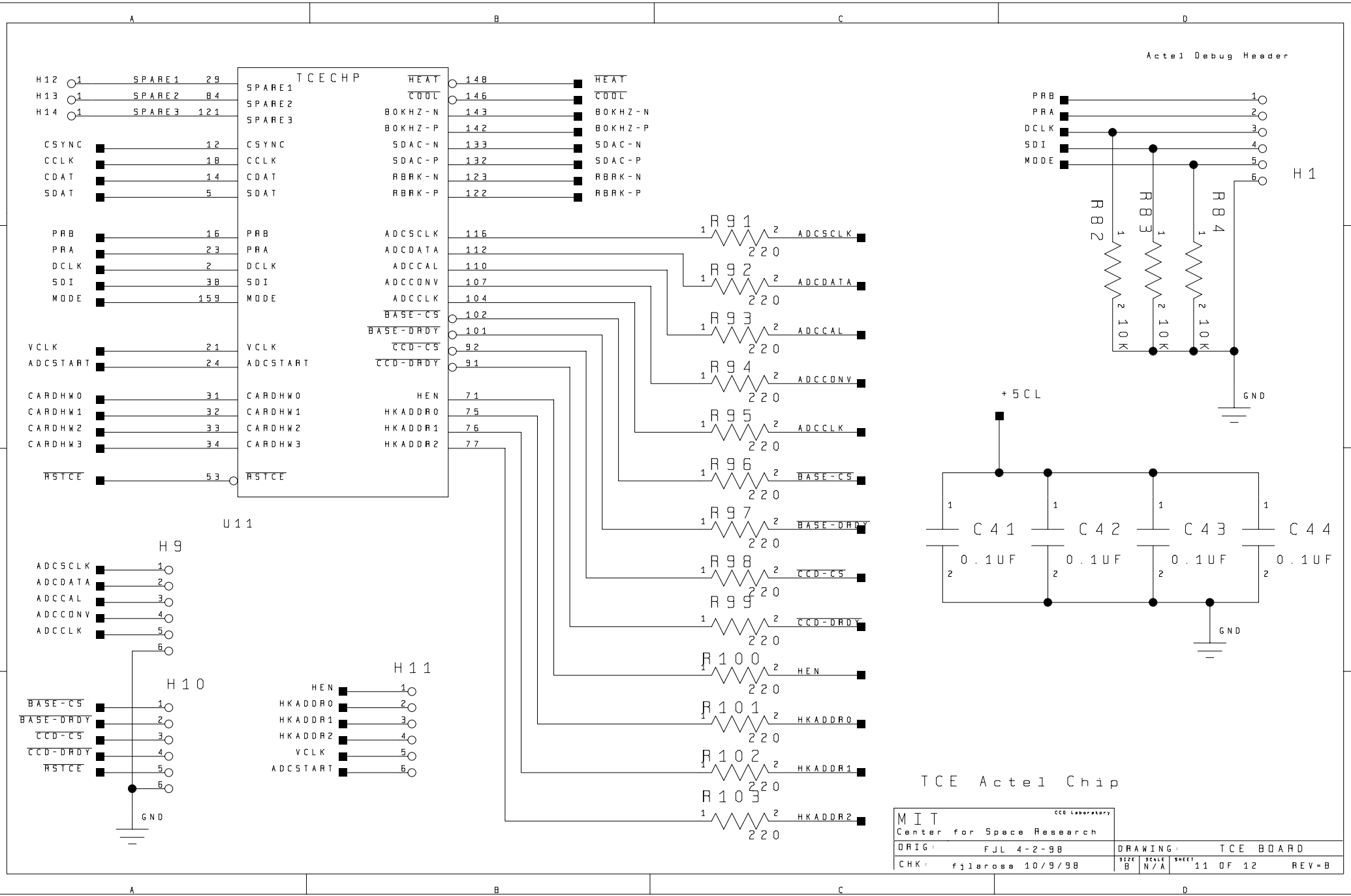
Regulated Power
for Converter

MIT		CCO Laboratory	
Center for Space Research			
ORIG: JPD	1-29-97	DRAWING: TCE BOARD	
CHK: fjlara	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 9 OF 12	REV: B

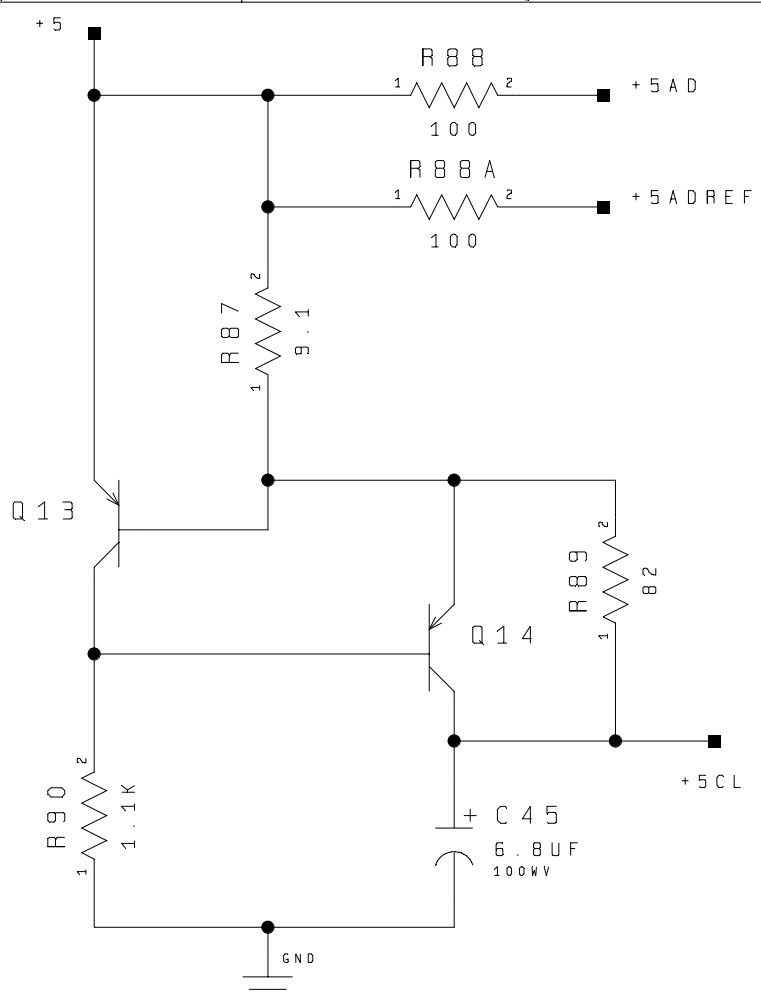
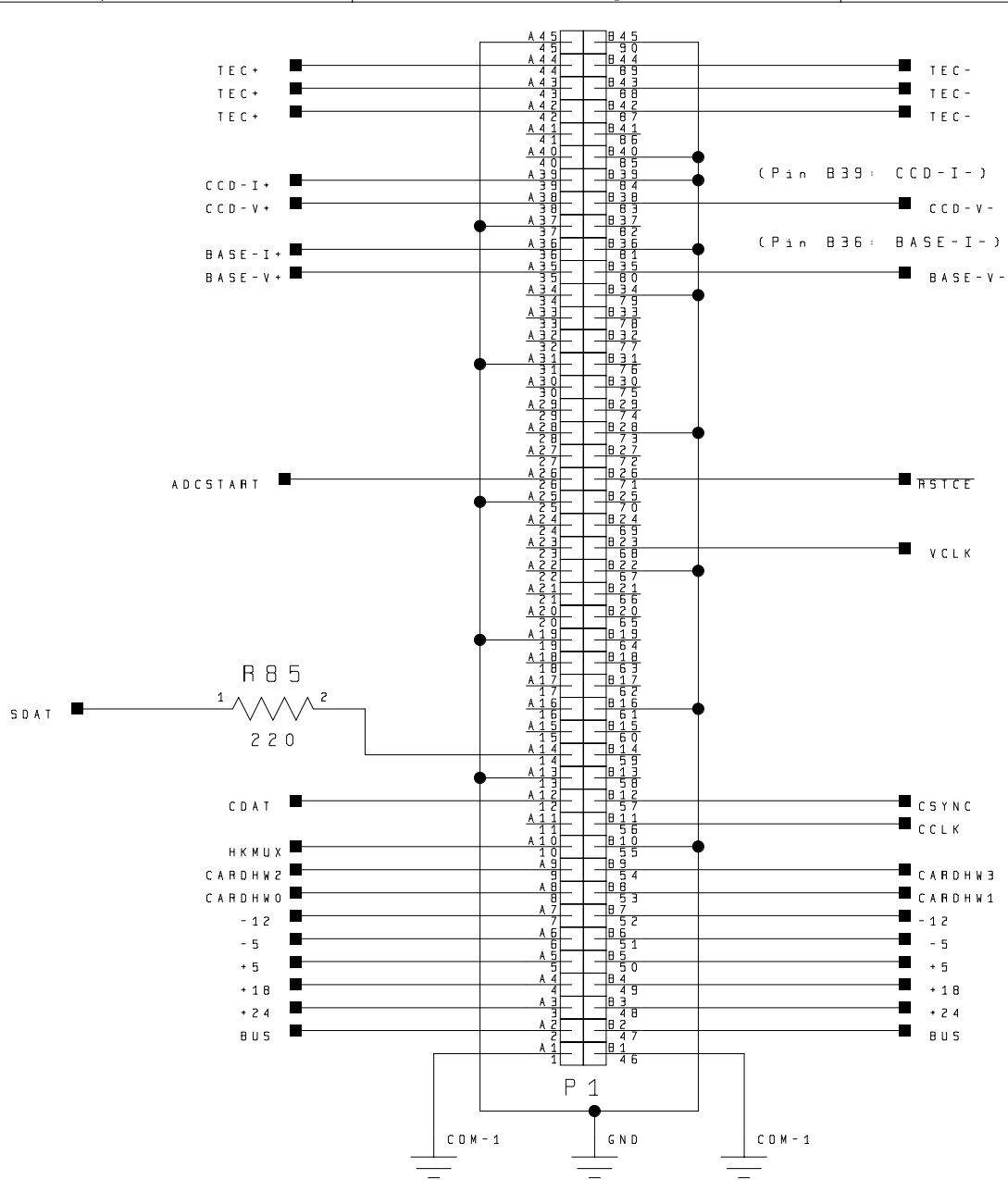


TCE Housekeeping

MIT Center for Space Research		CCO Laboratory	
DRIG: JPD	3-10-97	DRAWING: TCE BOARD	
CHK: fillerosa	10/9/98	SIZE: B	SCALE: N/A
		SHEET: 10	OF 12
		REV-B	



MIT		CCO Laboratory	
Center for Space Research			
ORIG:	FJL 4-2-98	DRAWING:	TCE BOARD
CHK:	fjlarosa 10/9/98	SIZE:	B
		SCALE:	N/A
		SHEET:	11 OF 12
		REV:	B



NOTE: R88 & R90 ARE APPROXIMATE VALUES AS OF 2-7-97

BACKPLANE AND 5V CURRENT LIMIT

MIT		CCO Laboratory	
Center for Space Research			
ORIG:	FJL 4-2-98	DRAWING:	TCE BOARD
CHK:	fjlrobb 10/03/03	SIZE:	B
		SCALE:	N/A
		SHEET:	12 of 12
		REV:	B