

ATLAS SCT Module Test Report

MODULE NAME: k3103

DATABASE S/N:

1. COMPONENTS

	Database S/N	Manufacturer S/N	Encapsulant	Comment
Baseboard			Epoxy	Standard TPG baseboard

Detectors	Database S/N	Manufacturer S/N	I _{leakage} (nA)	C _{interstrip} (pF)	Pin holes	Comment
Top far	Hamamatsu	STX42454-1	143		0	ATLAS98 narrow m, 285
Top near	Hamamatsu	STX42454-3	180		0	ATLAS98 narrow m, 285
Total	-	-	263			-
Bottom far	Hamamatsu	STX42425-10	272		0	ATLAS98 wide poly, 285
Bottom near	Hamamatsu	STX42425-13	218		0	ATLAS98 wide poly, 285
Total	-	-	813		0	200V, 25 °C

	Database S/N	Manufacturer S/N	Comment
Hybrid		k3103	Barrel Cu/Polyimide flex v3

Chips	Database S/N	Batch	Wafer	X	Y	x _{eff}	nDead	Non Trim	Gain	Offset
M0		30423	3	1	7	0	0	1	59.4	-16.4
S1		30423	3	2	4	0	0	1	56.5	-2.7
S2		30423	3	2	14	0	0	1	61.1	-18.3
S3		30423	3	1	14	1	1	1	63.0	-13.5
S4		30423	3	1	6	1	1	2	62.0	-15.5
E5		30423	3	2	12	1	1	2	60.1	-16.8
M8		30423	3	1	11	0	0	1	57.6	-5.8
S9		30423	3	1	8	1	2	3	59.9	-7.3
S10		30423	3	2	7	1	1	3	60.2	-2.9
S11		30423	3	1	4	1	2	4	60.5	-18.3
S12		30423	3	2	13	1	1	6	61.4	-10.5
E13		30423	3	3	4	0	0	2	58.2	-5.7
Total	-	-	-	-	-	7	9	27	<60.0>	<-11.1>

Capacitors	#locations	C	Vendor	Part No.	F _{Resonance}			
HV decoupling	4	10	Murata	Murata GHM1530-B-103-K-630	70			
Large LV	4 * 2	330	Murata	Murata GRM42-6-X7R-334-K-25	15			
Small LV	7 * 2	100	Murata	Murata GRM39-X7R-104-K-25	26			
		nF			MHz			
Total	-	-	-	7	9	27	<60.0>	<-11.1>
Miscellaneous	Vendor	Part No.	Comment					
Temp. Sensors	-	-	not installed					

2. CONSTRUCTION DETAILS

Adhesives	Vendor	Part No.	Comment
Chip Glue	Ion-chemi	-	Silver-loaded, RT-cure, 50°C 2hr post-cure
Det. Elec. Glue	Ion-chemi	-	Silver-loaded, RT-cure, 50°C 2hr post-cure
Det. Therm. Glue			Araldite2011+BN

Bonding	#locations	# bonds / location	Comment
AG-DG connections	14	5	
Detector Backplane	2	2	Top side only
Strip Bias: detector to fanin	4	2	Top and bottom sides
Strip Bias: fanin to AG	4	2	Top and bottom sides

Were any components changed during production? If so, give brief details here:

3. OPERATING CONDITIONS

	Default	Actual	Comment
Vcc	3.5V	3.50	
Vdd	4.0V	4.00	
Vdet	100V	100	
Icc	-	0.92A	
Idd	-	0.42A	
Idet	-	~0.8uA	
Bias Current	267mA	267 uA	
Shaper Current	30mA	30 uA	
Compression Mode	1 (LEVEL XIX)	1	
Edge Detect	0 (OFF)	0	
Box Grounding	AG at PCB	DG at Patch	DG at Patch is done by design
Box Cooling	Fan	Fan	Climate box
Module Temp	< 45C	~25	module in a semi-confined box in above

4. TRIMMING

	Default	Actual	Comment
Trim Method	Minimisation of n Non Trim	Manual setting	Alternate: Minimisation of RMS
Trim VCAL		20 mV	
Target Value		200 mV	
n Non Trim (link 0)	-	10	
n Non Trim (link 1)	-	22	
n Non Trim (total)	-	32	
RMS of vt50 distribution after trimming	-	2.67, 2.76 mV	

5. RESULTS

	M0	S1	S2	S3	S4	E5	Link 0	
Gain (0,2,3fC lin)	50.0	48.9	50.8	51.1	50.6	50.9	50.4	mV/fC
Noise @2fC	12.9	12.7	12.7	12.6	12.9	13.0	12.8	mV
Noise @2fC	.258	.261	.251	.247	.255	.256	.255	fC
Noise @2fC	1614	1629	1566	1541	1595	1600	1591±40	ENC
Stability point	clean	clean	clean	clean	clean	clean	clean	mV
Offset (by Noise Occupancy)	104	106	101	98.5	105	100	102	mV
RMS of dist. of NO offsets	6.4	6.7	6.8	6.5	6.6	6.5		mV
Stability - Offset	--	--	--	--	--	--	--	mV
Stability - Offset	--	--	--	--	--	--	--	fC
n Non Trim	1	2	1	1	2	3	10	
n Masked	0	0	0	0	0	0		-

	M8	S9	S10	S11	S12	E13	Link 1	Overall	
Gain (0,2,3fC lin)	48.1	48.3	51.2	48.3	50.8	48.9	49.3	49.9	mV/fC
Noise @2fC	12.4	12.7	12.7	13.0	13.3	13.3	12.9	12.9	mV
Noise @2fC	.257	.264	.249	.270	.262	.271	.262	.259	fC
Noise @2fC	1606	1648	1554	1686	1635	1696	1637±40	1614	ENC
Stability point	clean	clean	clean	clean	clean	clean	clean	clean	mV
Offset (by Noise Occupancy)	106	108	98.9	108.1	101	107	104.8	103.4	mV
RMS of dist. of NO offsets	6.1	6.2	6.6	6.2	6.9	6.6			mV
Stability - Offset	--	--	--	--	--	--	--		mV
Stability - Offset	--	--	--	--	--	--	--		fC
n Non Trim	0	2	2	2	5	11	22		
n Masked	0	0	0	0	0	0	0	0	-