# PRSDUCT

## TEAM PACIFIC CORPORATION PROCESS TRAVELLER



CUSTOMER	SemiQ Inc.	P.T.#	MO853128 (MO853123 - MO853152)	START DATE	17-FEB-2024
PKG TYPE	ENGG SEMIQ SOT227 6W(5-12,1-6) AL 2D	S.O. #	96001559	ASSY. DATE	19-FEB-2024
DEVICE	227 GCMS080B120S1-E1 081PDBSSKIUISFTLLMG	BD NO. / REV.	BD-0081-SEMIQ rev.03	SHIP-OUT DATE	15-MAR-2024
LOT#	U46373.U43768	P.O. #	220316	START QTY.	400

SPECIAL INSTRUCTIONS.

ENG'G EVALN ATTN: RACHELL A. / NPQ REFER TO CEBR ATTACHED FOR SPECIAL INSTRUCTIONS

Tray Number(s): A - 607

GCM15080812051-ET- PT GCM15080812051-ET- 07

SHIP TO: SemiQ Inc.

20692 Prism Place Lake Forest

,, CA,USA 92630

OPERATIONS:		اسكما	117080RIM	40-13-120					
OPERATIONS.	SPEC NO.	CONDITIONS MACH NO	OPTR NO.	DATE START/TIME	DATE STOP/TIME	QTY IN	QTY OUT	YLD	QA
Wafer Saw	TPAS-2001	OTEGORO	10381	17 feb 24 ) 3: 25 Pm	17 Feb 24   5:28 PM	400	400	100 /.	
Die Plate - Automated	REFER TO ¢	05-01	N/A	19 Fcb 24 6:00 pm	19 feb 24 / 6:30 pm	400	400	100%	
2nd Opt Inspection	TPAS-2005	LPS	10272	19Feb24 7:15PM	10Feb24/7:33PM	400	400	1002	
Die Attack	TPAS-2134	Brutes		19 Fabir 4/9:05pm	197 ey 24/3/00 mm	400	400	100%	
Wirebond & 23Feb-2	Y TPAS-2191	CH-21	4238, 7022	25 teb. 24 /11:45 4).m	23 telt by \$:28 Plan	400	40	lov.]-	
(b)		CH-02	वस्त्री वस्त	23Feb.24 12: 209m	23 Feb-24 3:40am	400	400	100%	
2rd Opt Inco	TPAS-2137	POGB	9789,9705	23 peb.24 12: 20an	28 Peb-23 3:40gm	400	400	100%	TPC OA # 353
FEB	2 3 2024	LPS	9787	23 Feb. 24 12:22am	23 pels 28 3:489m	400	396	99 %	128768 24 -
Mold 1 24 Feb. 24	TPAS-2140	MP- 15	28601	24Fcb24   8:05 am	24Fcb24 11:30am	304	396	100%	
Chemical Deflash	TPAS-2122	/mm-01	10505	34700024 / 200 pm	24 tab 24 / 5:4=	394	304	100 %	
Post Mold Cure	TPAS-2142	34	10541	4:15 PM	24 FEB 24 8:15 PM	394	394	100%	
Laser Mark	***TPAS-2141	LASERO	C83)	12:44 km	1:16Am	396	396	100%	
Trim .	F TPAS-2394	HPA	9850	26Febry 9:45	26feb24/11:20m	396	396	100%	
First Form	TPAS-2394	HA02	1819	24 Feb-24 9: 49 am		354	394	120%	
Final Form	TPAS-2394	APa	10935	26 FEE 24 9:52 AM	26 FEB 24	396	394	150 %.	TPC
4th Opt Inspection &		MM	10838	SCELED SALL: IZLM	SUFFERILL 200PM	396	389	98.25%	20 FEB. 2
Isointicin ast	TPAS-2394	#2_	10813	auteb'24/9:53 am	24 teb 21/11:31 cm		389	100)	1
UIS Test	TPAS-2354	nistor	10717	248024/2:30 PM	20 FEM 24/4: 24AM	330	385	98-97%	
Final Test	ψ TPAS-2354	84-c	10005	24 ASB24 4: 30PM	26 FEB 24   5: USP	385	379	98.44	
QA Final Test Buy-off	D TQAI-3143	84-c	1000	surapsul rown	26 FEBRUI TIOPE	80	80	100%	etprod
Pack	Q TPAS-2123	NIA	Gals	24 FEB 24 11'11 ja		379	379	100	TPC /QA#337
									126640024



### TEAM PACIFIC CORPORATION PROCESS TRAVELLER



...Continuation of First Page

MATERIALS	M	AT	E	R	A	LS
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	STOCK NO.	DESCRIPTION	LOT NUMBER	QUANTITY
	GPE.GP2T080A120X	DIE GP2T080A120X	U46373,U43768	400
	GPE.GP3D010A120X	DIE SiC SBD (10A/1200V) GP3D010A120X (Size: 95 x 95 mils)		400
	TPC,QIO02001	Hub-type Blade part number:ZH14-SD2000-V1-90DD; Supplier: Aliba	H230905CM940 PE	0.03
	TPC.QIO09230	Dicing tape, DENKA-UHP-110M3 UV Curable : Size 230mmx100m	2105-5014A	0.11
	TPC.QIC02102	MTI Hyper-Pro Dicing Solution Surfactant : Alibata ; TMPS-4033 Re	MBW31HP 30 DZ	0.02
1	TPC.RK05003A	BASE PLATES SOT-227 STAMPED (SDI) MATERIAL:C1220, FULL	B2400000 1-11	405
,	TPC.RK01043	LEADFRAMES, SOT-227 PAD B STAMPED, PLATING SPECS: FU	B23000278-325	405
,	TPC.RK04067	Substrate, Pad B AIN, Conductive Metal: Cu, Drawing# SU-0311-D	20231117-12	405
	TPC.RN02032J	PREFORM, SOLDER. 92.5PB/5SN/2.5AG, SIZE: 0.255"(+/-0.010")	F43947A1	1,615.2
	TPC.RN02041	Disc Solder Pb Sn (5) Ag (2.5) size: 1.4 x 0.51 mm disc; SPECS	2/226	403.8
,	TPC.RN02049	SOLDER PREFORM, 92.5Pb/5Sn/2.5Ag; SIZE: 4X68.5X68.5 MILS	F45889C2	403.8
	TPC.RN01021	BW AL-Bond 12mil 100M 07A TS-500 GMS Min EL 10-30% 99.99%	9016621907	17.12
	TPC.RN01049	WIRE, ALUM, 6 MILS, 99.99%, TENSILE: 80 GMS, ELONG: 5-12%	MS0119743-A	2.04
	TPC.RN05013	Molding Compound Hysol MG15F-0140 mini pellet (18mm x 9.5 gr	- 073GAA1349	3,835.90
	TPC.RN06002	NUTS SOT-227 M4-0.77MM P/N 934 HEX NUT NICKEL PLATED	120729	1,600
	TPC,RN06001	BOLTS SOT-227 M4X8.5MM PAIL PAN HD SEMS W/ LOCK AND	06/623	1,600

TOP/SIDE MARK INSTRUCTION

4 REFER TO CEBR
1 2
Scrii C GCM Sp80 b12 p51-E1
24 p8 M0815 128

98e 804 8024 Feb 24

BACK/BOTTOM MARK INSTRUCTION

2/0 DEFECTS	QTY	3/0 DEFECTS	QTY	PRE-SEAL DEFECTS	QTY	4/0 DEFECTS	QTY	ISOLATION	QT
		LET	1			DNH	2		E LE
		Misp	2			PNL	4		
		SY-BS	1			EPL	1	os	QT
								03	
لحون الراضا									
	1 33								
								ALDERSON STREET	0
					0.5			FINAL TEST	Q
								FULL	2
								AVAL	2
								alc .	
				HE HE WILLIAM				ds	
								YTH	
						DIVIDED HEVE			

TSOP-9001-F1

i				PROCESS TRAVELLER CHECKLIST FORM  MO #: 853128
-	ORERATION	OPIR#	DATE SHIFT	ACTIVITY TO ACCOMPLISH
1		MA	19 Feb24   R	, Plate Card Traceabil'ty
				Lot No. : 946373 4 043767 No. of Grid Plate : 4, 4
	DIE PLATE			Device No. : 6cm5080812051 Cabinet No. : NA Quantity : 400 Tray No. : A-003
	SETUP	10765	19486116	Railcode #: 15   R.C. 9154   Machine type (BTU, ESEC, Centro): #03   if Centro, Prog # M/A
	QA#325			With special / Eng'g instruction? YES NO
	0 19FEB.24			No. of Grid Plates:
n p	DIDIE ATTACH			Tray No. 12-00 Indicate Magazine/ tray #. Quantity # of Defects and Operator #
35	OA# 356			Soul 011=90 - 142:50 142:50
0-2	+ Zappetal 2			V 029=50, ments 0 049-50 - W-011=50 - CW/MM/S 0) CW/V 2005
	- Carriery			BD# on PT : 50008) Semi @ 03BD# Actual (card): B000 % Semi Q 03
		4238	23 Feb. 24/0	BD# Program (display): BD0081-Semi &-12 / BD0081 - D3-60
		7002	27 Peb 24 S	Check Set-up Checklist on TCM (if done?):  Check magazine # @ D/A versus Actual:  US
		00/0 0745	23 FU6 24   G	With special / Eng'g instruction? YES NO NO
	LEADBOND	9949,9705	23100-1416	Indicate Magazine/ tray #, Quantity # of Defects and Operator #
	ELOS EL SON		Broke State	14-011-50 4228 14-101-50 15-070-50 750
				142-50) 14-012-50
		C PENNIN		14-118-3V
		9762	23 Ftb 24 G	Check magazine # @ W/B versus Actual:
	3 <sup>RD</sup> OPTICAL	1767	231002410	- 000 - 000
	TOTAL STATE			~ 184m-50 1096m-50
				2195-50 / 118m-50 -006-50 / 0197-46
				Loop height checking: Passed / Falled:
				Write "COMPLETED" if previous operation is Done: Completed  Mold compound type: Hysel (m) Temp requirement: 175-185°c
		10385	24 Fe 6 24 10	With special / Eng'g instruction? YES NO
1	MOLD			Tool Serials # / Tool # 1304 - 04 m GP
024	WIOLD			Indicate Magazine/ tray #. Quantity # of Defects and Operator #
	245000 04			/ 22 - 040 - 100
	GA V 277			/ K. 026 - 100
	Sour.	alone.	21/4 200 21/10	Indicate Magazine/ tray #. Quantity # of Defects and Operator #
		100U	24 \$ 20024 /5	indicate Magazine/ tray #. Quantity # of Defects and Operator #
	DEFLASH			22-040 - 100
				15-024 - 100 POII - 90
				D/A Date (Origin): N/A Temp/ Oven #: N/A
				Date Code: 2408
	MADIC	6831	24FEB24	Check PT for making instruction   Indicate Magazine/ tray #_ Quantity # of Defects and Operator #
	MARK		6	72-029-100
	N 4 6 6 6 8	and the same test		22-040-100
			245020	PMC Time Required: 2HR\$ Temp/Oven#: [40 ± 5 % 36
	DMC	10541	24 FEB24	Indicate Magazine/ tray #. Quantity # of Defects and Coerator #
	PMC			22 - 029 - 100 15 - 024 - 100
				22 - 040 - 100 Roll - 96 Lead cut requirement: STD
	TRIM	9850	26 = 524	Lead Finish: S/D S/P TP
	Trinvi		1	15-026-100 22-029-100
				Utilized KI Substrate at Die Attach? YES NO
*		11/	11/	For Vishay Builds only:
	FINAL VISUAL INSPECTION	N/A	N/A	*IF YES, Perform void / delamination check for all KI substrate
	INGI ECTION	1	The state of the s	(For the list of KI substrate stock number, refer to TAFC 1324 para 6.1)
	1000 - 1000			* IF NO, DO NOT PERFORM VOID / DELAMINATION CHECK  Job # on PT : \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	FINAL TEST	100H	26 10 24	Test program requirement: 60M OXTRI2081-EI-FT Ind Mrvm/
	1	100/3	3	Part # on ARA / Rev : GONOXORIONES

- Water # 12 - observed die book peel-off during nuto die plate. - for 1001. die book inspection.

Processed at alphasen Auto Dic Softer machine.

19 Febry

. CCAM SAMPLING DONE

Dr: 1041 u

thole to hove Passed 5/3

22 Feb. 24 Jul 0/40

C84 m Sampling done - PMC 24 Feb. 24 GA

corn empling done e abox 24 to My dis

> FVI 10097-171 10838-113 10834-100

> > 1 ALLEYT

396

ORACK SAMPLYNG DONE

Tesec Mon Feb 26 17:32:31 2024

Station C Test by Br FileName GCMS080B120S1-E Comment M0853128 LOT#U	1_FT/
SumBin SumBin Total	0 0.0 %
Bin SortName	Sub Percent
24 CONTACT FAIL 4 OS FAIL 4 VTH FAIL 14 BV FAIL 8 RDSON FAIL 11 VF FAIL 10 DELTA VF 9 ID FAIL 1 GCMS080B120S1-E 5 GATE FAIL 4 REJECT	0 0.0 % 5 1.3 % 1 0.3 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 379 98.4 % 0 0.0 % 0 0.0 %
Total	385

10- mano mayons

Tesec Mon Feb 26 17:41:41 2024

The Paris of the P	Station C Test by Br FileName GCMS080B120S1-E Comment MO853128 LOT#U	1_QA /	/0
S UNIVERSITY	SumBin SumBin Total	0 -0.0 %	
	Bin SortName	Sub Percent	
	24 CONTACT FAIL 4 OS FAIL 4 VTH FAIL 14 BV FAIL 8 RDSON FAIL 11 VF FAIL 9 ID FAIL 5 GATE FAIL 1 GCMS080B120S1-E 4 REJECT	0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 % 0 0.0 %	
	Total	80 Steres 24	-

EM		CHE	TEAM PACIFIC	ALLEY OF THE REAL PROPERTY.	100000000000000000000000000000000000000		
Margine .	OT227-11	COS		PLASTICS)	D REQUEST		15-Feb-24
Product Stage > Purpose:	Pre-production	→ New package		n Start Time	e: over 12 month	s Busin	ness Type: IDN
Customer	SemiQ Inc.				Ship To :	SemiQ Inc.	
Contact Person	Peggy Thrond				300000000000000000000000000000000000000	20692 Prism Place	
Telephone		SELECTION NO.	TE ato Silving			Lake Forest Californ	nia 92630
E-mail Address	<pre><pthrond@semi< pre=""></pthrond@semi<></pre>	g.com>				USA	
Facsimile					Bill To	SemiQ Inc.	
Forwarder/Account #						Octing me	
Package Type	SOT-227 Pad B				Build Qty :	12,073	
Device Type	GCMS080B1205	S1-E1	Run: 8		Est. Volume :		
Lot No.	HARMAN TO THE PARTY OF THE PART	73 / Diode: U43768	IV BEEF		Product Application	n / Grade :	Commercial
				Qty		A COMPANY OF THE PARTY OF THE P	
1 WAFER SAW	: Die Type 1:	SIC MOS; GPE GP2T08	0A120X	1	10 TRIM	: Trim/Crop 1	☐ Trim/Crop 2
	Die Size:	111 x 111 mils					
	: Die Thickness	6~8 mils			11 FORM	: Form 1	☑ Form 2 ☑ Form
	: Wafer Size:	6 inches				: Mat'ri Type 1:	Bolts, TPC RN06001 / TPC RN0
	: Die Type 2:	SIC DIODE; GPE GP3D	010A120X	1		: Mat'rl Type 2:	Nuts; TPC:RN06002 / TPC:RN0
	: Die Size:	95 x 95 mils					
	: Die Thickness	6~8 mils			12 ISOLATION	: ☑ 100%	Sampling
	: Wafer Size:	6 inches					
2 DIE PLATE					13 4TH OPT INSP.	: ☑ 100%	Sampling
Z DIE PLATE	:	☑ Automatic	□Viking				
3 2ND OPT INSP.					14 FINAL TEST	: El Yes	Requirement: w/ UIS
Z ZND OFT MOP.	: Military	☑ Commercial			Datasheet / Test I	Program Available :	See customer format
4 DIE ATTACH	: 🗹 Manual	Automatic	□ Semi-Auto		15 PACK	· MTPC Std	☐ Customer Std.
	□ Eutectic	□Ероху	☑ Soft Solder			: Mat'rl Type 1:	SOT227 clear tube: TPC.IS02
	: Mat'rl Type 1 :	BP; TPC.RK05003A / TF	PC.RK05012			: Mat'rt Type 2:	End Plug ; TPC.IS08026
	: Mat'rl Type 2 :	PB LF; TPC.RK01043 /	TPC.RK01089	11		: Mat'rt Type 3:	Inner Box ; TPC.IS01010
	: Mat'rl Type 3 :	Sub; TPC.RK04010 / TF	C.RK04067	1		: Mat'rl Type 4:	Master Box ; TPC IS01029
	: Solder Type 1:	BP-Sub-LF Pref; TPC.R	N02032J	4		: Mat'rl Type 5:	Bubble Sheet ; TPC IS07003
	: Solder Type 2:	MOSF-LF Disc; TPC.RM	N02041	1		: Mat'rl Type 6:	Shipping label ; TPC IS10052
	: Solder Type 3:	Diode-LF Pref; TPC.RN	02049	1		: Mat'rl Type 7:	Plastic bag ; TPC IS06001
Aligner	Ref. Drawing No.	AD-0094-IP rev. 2		128			
5 WIREBOND/	:  Manual	☑ Aulomatic			OTHER REQUIRE	EMENT's:	
GATELIFT/	: Wire Type:	Aluminum			OTHERS		Requirement:
3RD OPT. INSP.	: Wire Size 1:	12 mils wire; TPC.RN01	021	5	SPECIAL RECUI	DEMENTS:	
	: Wire Size 2:	6 mils wire; TPC.RN010		1	SPECIAL REQUI		CCEC
	: ☑ 100%	☐ Sampling		-	Build Attention t		
	: PILPS	□HPS				o: QUAL ENGR	

2. To be processed at Die Plate via Alphasem machine. If in case that 6 MOLD : Mat'rl Type: Hysol MG15F; TPC RN05002 / TPC RN05013 the machine is not available, the process can be done manually 3. No rework at FOL unless approved by the customer 7 CHEM. DFLASH : Mat'rl Type: M-Pyrol: TPC:IC02014 4. Qualified both at BTU and VLO 5. Qualified both at MGP and CVL 8 POST MOLD CURE Time: 2 Hours 6. Refer to the Build sheet for the marking lay-out Temp: 190 +/- 5°C 7. TEs can directly communicate test result to customer 8. For any concern, please call attention of Qual/BD. 9 LASERMARK : □ Top ☑ Side □Bottom Lay-Out: BD-0081-SEMIQ rev. 03 Note: number the box in sequence & shade if not required. ☐ Cust. Specs REF. DOCUMENTS:

Process Flow

☑ Control Plan

☐ Die/Wafer Drawing

APPROVALS: for costing, signatories will be marketing and OCEO only

OR GINATOR

☑ Bonding Diagram BD-0081-SemiQ rev. 03

Marking Documents BD-0081-SemiQ rev. 03

Richard P. QE / NPQE

SPENZY 15Feb 24 NP/Q Manager Marketing, Sales NPQ - AVP

TAFC 1066

TPCP 4003

☑ PO/invoice

☐ Others

☐ Ref. Standard

15 Feb 24 VBM EVP / COO

Form 3 / TPC.RN06010 / TPC.RN06011

TPC.IS02059

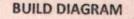
220316

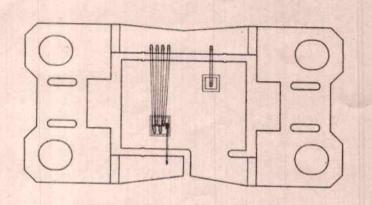
: SOT-227 (Pad B) : GCMS080B120S1-E1

#### SEMIQ ASSEMBLY BUILDSHEET

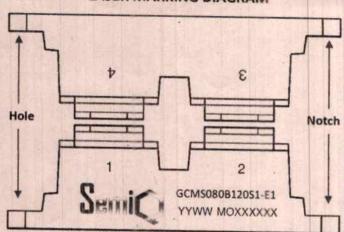
Doc No. : BD-0081-SEMIQ

: 03





LASER MARKING DIAGRAM



**Terminal Mark** 

1, 2, 3, and 4

Logo: Company Name

GCMS080B120S1-E1

**Device Name** YYWW

Date Code

YY - Last 2 digits of the Year WW - 2 digits Mold Week

MOXXXXXX

Process Traveller #

Die Aligner: AD-0094-IP Rev.01

Circuit Diagram

#### ISOLATION TEST

Voltage @60Hz = 4.0kV; Max. Leakage Current =1.0mA Note: Use 60secs. for the first 2units.

Time = 10 secs.

**ELECTRICAL TEST REQUIREMENTS** 

Item Symbol Description Test Condition @ 25°C Max Unit See separate file for complete details of Final Test and AQL Test specification (Customer's format)

**BILL OF MATERIALS** Operation Description Ref. Stock Number Quantity Die SiC SBD (10A/1200V) GP3D010A120X (Size: 95 x 95 mils) GPE. GP3D010A120X Die SiC MOSFET (20A/1200V) (111.42 mils x 111.42 mils) GPE.GP2T080A120X 1 Base Plate: Full Nickel TPC.RK05003A / TPC.RK05012 1 Lead Frame: Pad B Die Attach TPC.RK01043 / TPC.RK01089 1 Substrate: Metallized AIN (Size: 700x 500mils) TPC.RK04010 / TPC.RK04067 Solder Preform: 92.5Pb/5Sn/2.5Ag (Size: 255x350mils) - BP to Subs to LF TPC.RN02032J 4 Solder Disc: 92.5Pb/5Sn/2.5Ag (Size: 55 mils) -MOSFET to LF TPC.RN02041 1 Solder Preform: 92.5Pb/5Sn/2.5Ag (Size: 68.5 x 68.5)- SBD to LF TPC.RN02049 1 12mils Aluminum wire (99.99%) - Std Bond for MOSFET Source and SBD Anode Wire Bond TPC.RN01021 5 6mils Aluminum wire (99.99%) - Std Bond for MOSFET Gate TPC.RN01049 1 Mold EMC Hysol MG15F-0140 (Conventional or MGP) TPC.RN05002 / TPC.RN05013 (M4x8.5mm) Form TPC.RN06001 / TPC.RN06010 4 (M4-0.77mm) TPC.RN06002 / TPC.RN06011 4 Anti-static tube TPC.IS02003 / TPC.IS02059 End Plug TPC.IS08026 2/tube Pink Plastic Pack TPC.IS06001 **Bubble Sheet** TPC.1S07003 Intermediate Box TPC.IS01010 Sticker Label (for Intermediate Box) TPC.IS10052 1/hox

A Section 1	Name	Function	Signature	Data
	Rachell Y. Adriano	CSE	Signature	July 18, 2023
	Guian D. Gomez	Mktg. and CS Manager		July 10, 2023
:	Seok Joo Jang	Sr. Manager	Seek Joo Jang	August 17, 2023
	:	: Rachell Y. Adriano : Guian D. Gomez	: Rachell Y. Adriano CSE : Guian D. Gomez Mktg. and CS Manager	Rachell Y. Adriano CSE Guian D. Gomez Mktg. and CS Manager

ackage

: SOT-227 (Pad B)

SEMIO ASSEMBLY BUILDSHEET

Doc No. : BD-0081-SEMIQ

Revision #	Revision History	Revised By	Revision Date
00	Original Issue	Rachell Y. Adriano	April 14, 2021
01	Rotated the MOSFET Die Orientation Change Isolation Voltage Req't from 2.5 to 4.0 kV	Rachell Y. Adriano	August 24, 2022
02	Redesign to address the Wirebond issues	Rachell Y. Adriano	January 26, 2023
03	Changed Wirebond simulation Revised the Isolation test time	Rachell Y. Adriano	July 18, 2023
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		TOTAL STREET,	COLUMN THE SECTION