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西新宿三井ビルディング

報告書番号：PCN#20071026001
2007 年 12 月 23 日

お客様各位

日本テキサス・インスツルメンツ株式会社
営業・技術本部 ビジネスオペレーションズ部
カスタマドキュメント マネージャ 牧 達郎 (牧)

SOIC 8/14Dパッケージ一部製品 組立サイト追加変更のご案内

拝啓 貴社益々ご清栄の事とお喜び申し上げます。平素は弊社製品のご愛顧を賜り、厚く御礼申し上げます。さて、標題の件につきまして下記にご連絡させていただきます。ご査収の程、宜しくお願い申し上げます。

敬具

－ 記 －

通知タイプ	☐ Initial notice (Plan)	☒ Final notice
変更概要	Design/Specification	☐ Design ☐ Electrical ☐ Mechanical
	Wafer Fab	☐ Site ☐ Process ☐ Material
	Wafer Bump	☐ Site ☐ Process ☐ Material
	☒ Assembly	☒ Site ☐ Process ☒ Material
	Test	☐ Site ☐ Process
	Others	☐ Packing/Shipping/Labeling ☐ -
変更内容	SOIC 8/14D パッケージ一部製品 組立サイト追加変更 現行：CRS 社(Malaysia) 変更後：CRS 社(Malaysia)及び TI-Malaysia	
対象製品	対象製品リスト参照	
変更時期	2008 年 3 月下旬の出荷より予定しています。	
品質認定試験	☐ 計画	☒ 終了
製品表示	☐ 変更無し	☒ 変更あり
備考	－	

尚、変更時期につきましては、在庫状況により異なりますので、担当営業にお問い合わせ下さい。また、ご不明な点、ご質問等がございましたら、担当営業或いはpcn_tij@list.ti.comにお問い合わせ下さい。

以上

変更内容

内容：弊社 HPA(ハイパフォーマンスアナログ) SOIC 8/14Dパッケージ一部について、現行CRS社 (Malaysia) 製造にて製造していますが、これに加えTI-Malaysiaサイトでの製造を追加し認定しました。この変更に伴いいずれも既に量産に適用しているものになりますが、下記部材の使用とさせていただきます。また、TI-Malaysia製造製品の出荷につきましては、本通知の90日以降に実施します。尚、出荷梱包部材につきましては、追加認定したサイトで現在使用しております部材の使用とさせていただきます。

変更内容

組立製造サイト

マウントコンパウンド

モールドコンパウンド

現行

CRS 社 (Malaysia)

Ablestik 8290

GF700FG

変更後

CRS 社 (Malaysia)、TI-Malaysia

Ablestik 8290、Hitachi EN4088Z

GF700FG、GE1030MDP

理由：製品安定供給確保の為

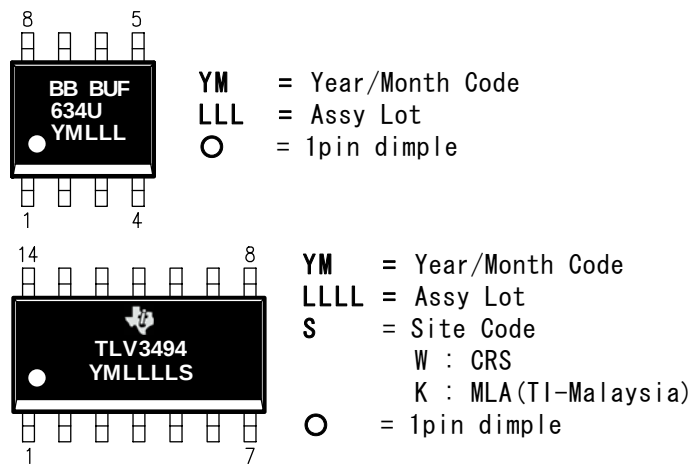
対象製品リスト

対象製品名				
BUF634U	OPA2364IDRG4	OPA338UAG4	OPA380AIDG4	OPA705UAG4
BUF634U/2K5	OPA2374AID	OPA341UA	OPA380AIDR	OPA725AID
BUF634U/2K5E4	OPA2374AIDG4	OPA341UAG4	OPA380AIDRG4	OPA725AIDG4
BUF634UE4	OPA2374AIDR	OPA347UA	OPA4344UA	OPA725AIDR
DRV1101U	OPA2374AIDRG4	OPA347UA/2K5	OPA4344UA/2K5	OPA725AIDRG4
DRV1101U/2K5	OPA2674I-14D	OPA347UA/2K5G4	OPA4344UA/2K5G4	OPA726AID
DRV1101U/2K5G4	OPA2674I-14DG4	OPA347UAG4	OPA4344UAG4	OPA726AIDG4
DRV1101UG4	OPA2674I-14DR	OPA348AID	OPA4347UA	OPA726AIDR
HPA00069AIDR	OPA2674I-14DRG4	OPA348AIDG4	OPA4347UA/2K5	OPA726AIDRG4
HPA00088I-14D	OPA2674ID	OPA348AIDR	OPA4347UA/2K5G4	OPA734AID
HPA00088I-14DR	OPA2674IDG4	OPA348AIDRG4	OPA4347UAG4	OPA734AIDG4
OPA177GS	OPA2674IDR	OPA349UA	OPA4348AID	OPA734AIDR
OPA177GS/2K5	OPA2674IDRG4	OPA349UA/2K5	OPA4348AIDG4	OPA734AIDRG4
OPA177GS/2K5E4	OPA2703UA	OPA349UA/2K5G4	OPA4348AIDR	OPA743UA
OPA177GSE4	OPA2703UA/2K5	OPA349UAG4	OPA4348AIDRG4	OPA743UAG4
OPA2137U	OPA2703UA/2K5G4	OPA355UA	OPA4354AID	REF1004C-1. 2
OPA2137U/2K5	OPA2703UAG4	OPA355UA/2K5	OPA4354AIDG4	REF1004C-1. 2/2K5
OPA2137U/2K5E4	OPA2704UA	OPA355UA/2K5G4	OPA4354AIDR	REF1004C-1. 2/2K5E4
OPA2137UE4	OPA2704UA/2K5	OPA355UAG4	OPA4354AIDRG4	REF1004C-1. 2E4
OPA2228U	OPA2704UA/2K5G4	OPA356AID	OPA4364AID	REF1004C-2. 5
OPA2228U/2K5	OPA2704UAG4	OPA356AIDG4	OPA4364AIDG4	REF1004C-2. 5/2K5
OPA2228U/2K5E4	OPA2705UA	OPA356AIDR	OPA4364AIDR	REF1004C-2. 5/2K5E4
OPA2228UA	OPA2705UAG4	OPA356AIDRG4	OPA4364AIDRG4	REF1004C-2. 5E4
OPA2228UAE4	OPA2725AID	OPA363AID	OPA4374AID	SN0309068DR
OPA2228UE4	OPA2725AIDG4	OPA363AIDG4	OPA4374AIDG4	SN0309068DRG4
OPA2301AID	OPA2725AIDR	OPA363AIDR	OPA4374AIDR	SN412016DRE4
OPA2301AIDG4	OPA2725AIDRG4	OPA363AIDRG4	OPA4374AIDRG4	TLV3491AID
OPA2301AIDR	OPA2727AID	OPA363ID	OPA4703UA	TLV3491AIDG4
OPA2301AIDRG4	OPA2727AIDG4	OPA363IDG4	OPA4703UA/2K5	TLV3491AIDR
OPA2335AID	OPA2727AIDR	OPA363IDR	OPA4703UA/2K5G4	TLV3491AIDRG4
OPA2335AIDG4	OPA2727AIDRG4	OPA363IDRG4	OPA4703UAG4	TLV3492AID
OPA2335AIDR	OPA2735AID	OPA364AID	OPA4704UA	TLV3492AIDG4
OPA2335AIDRG4	OPA2735AIDG4	OPA364AIDG4	OPA4704UAG4	TLV3492AIDR
OPA2342UA	OPA2735AIDR	OPA364AIDR	OPA4705UA	TLV3492AIDRG4
OPA2342UA/2K5	OPA2735AIDRG4	OPA364AIDRG4	OPA4705UAG4	TLV3494AID
OPA2342UA/2K5G4	OPA2743UA	OPA364ID	OPA693ID	TLV3494AIDG4
OPA2342UAG4	OPA2743UA/2K5	OPA364IDG4	OPA693IDG4	TLV3494AIDR
OPA2348AID	OPA2743UA/2K5G4	OPA364IDR	OPA693IDR	TLV3494AIDRG4
OPA2348AIDG4	OPA2743UAG4	OPA364IDRG4	OPA693IDRG4	TLV3501AID
OPA2348AIDR	OPA2846ID	OPA373AID	OPA698ID	TLV3501AIDG4
OPA2348AIDRG4	OPA2846IDG4	OPA373AIDG4	OPA698IDG4	TLV3501AIDR

OPA2349UA	OPA2846IDR	OPA373AIDR	OPA698IDR	TLV3501AIDRG4
OPA2349UA/2K5	OPA2846IDRG4	OPA373AIDRG4	OPA698IDRG4	TLV3502AID
OPA2349UA/2K5G4	OPA300AID	OPA374AID	OPA699ID	TLV3502AIDG4
OPA2349UAG4	OPA300AIDG4	OPA374AIDG4	OPA699IDG4	TLV3502AIDR
OPA2356AID	OPA300AIDR	OPA374AIDR	OPA699IDR	TLV3502AIDRG4
OPA2356AIDG4	OPA300AIDRG4	OPA374AIDRG4	OPA699IDRG4	TPS72501DR
OPA2356AIDR	OPA301AID	OPA379AID	OPA703UA	TPS72501DRG4
OPA2356AIDRG4	OPA301AIDG4	OPA379AIDG4	OPA703UA/2K5	TPS72501DT
OPA2364ID	OPA301AIDR	OPA379AIDR	OPA703UA/2K5G4	TPS72501DTG4
OPA2364IDG4	OPA301AIDRG4	OPA379AIDRG4	OPA703UAG4	
OPA2364IDR	OPA338UA	OPA380AID	OPA705UA	

製品表示

製品捺印にてサイトコード“S”の記載がある場合は、サイトコード“S”の記載が“W”(CRS)に加え、“W”(CRS)及び“K”(TI-Malaysia)となります。図-1 を例としてご参照ください。



図－1．製品捺印の表示例

信頼性試験

信頼性試験結果

信頼性試験期間	開始	—	終了	2007 年 9 月 18 日
信頼性試験 — 試料構成詳細				
Qualification Device:	IVC102U	Die Rev/ Size(mils):	A / 73 x 130	
Wafer Fab Site:	TFAB	Technology::	Bi-POLAR	
Fab Process::	450G	Passivation:	5kASiO2/8kASiON	
Metal1:	1.0%AISi	Resistor Tech:	NiCr	
Assembly Site:	MLA	Package/ Pin count:	D / 14	
Mount Compound:	Able 8290	Mold Compound:	G700FG	
Bond:	1.3 MIL Au	L/F Composition/ Finish:	Cu / NiPdAu	
MSL:	MSL3/260°C	Flammability Rating:	UL94 Class V-0	
信頼性試験結果				
Reliability Test	Condition / Duration		Sample Size/ Fails	Note
** Steady-state Life Test	125C,1000hrs		116/0	(1)
** Biased HAST	130C/85%RH,96hrs		77/0	(1)
** Autoclave	121C, 96hrs		77/0	(1)
** Temp Cycle	-65C/150C, 1000cys		77/0	(1)
** Thermal Shock	-65C/150C,1000cys		77/0	(1)
** High Temp. Storage	150C,1000hrs		45/0	(1)
Bond Strength	76 ball bonds, min. 3 units		76/0	(1)
Die Shear	Per Mfg Spec		10/0	(1)
Manufacturability	(per mfg. Site specification)		Pass	(1)
Salt Atmosphere	Per Spec		22/0	(1)
X-Ray Inspection	Per Assembly Site spec		125/0	(1)
Visual / Mechanical	Per Spec		45/0	(1)
Solderability	Steam age, 8 hrs		22/0	(1)
Lead Fatigue	Per Mfg Spec		22/0	(1)
Lead Pull	Per Mfg Spec		22/0	(1)
Lead Finish Adhesion	Per Mfg Spec		15/0	(1)
Physical Dimension	Per Products Spec		5/0	(1)
Flammability	Method A - UL94-0		5/0	(1)
	Method B - IEC 695-2-2		5/0	(1)
	Method C - UL 1694		5/0	(1)
FTY and Bin Summary	sample size full lot		Pass	-
Moisture Sensitivity	Per appropriate package level		22/0	(1)
Note:				
** : Devices preconditioned to appropriate package level for reliability evaluation.				
(1): Qualification data for Enterprise qualifications(OSE > TIM) have been utilized.				

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信頼性試験結果

信頼性試験期間	開始	—	終了	2006 年 8 月 2 日
信頼性試験 – 試料構成詳細				
Qualification Device:	DAC8831ID	Die Rev/ Size(mils):	A / 77 x 64	
Wafer Fab Site:	DM5	Technology:	CMOS	
Fab Process:	50HPA07	Passivation:	SiOn (8kA)	
Metal1:	AlCu0.5%Ti200A, TiN425A, AlCu0.5%5400A, TiN275A	Metal2:	Ti200A, TiN425A, AlCu0.5% 6250A, TiN275A	
Metal3:	Ti200A, TiN425A, AlCu0.5% 6250A, TiN275A	Resistor Tech:	SiCr	
Assembly Site:	TAI	Package / Pin Count:	D / 14	
Mount Compound:	8290	Mold Compound:	G700FG	
Bond:	TS, 1.3 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	L2, 260	
Qualification Device:	INA2126E	Die Rev/ Size(mils):	A / 77 x 114	
Wafer Fab Site:	TFAB	Technology:	Bi-POLAR	
Fab Process:	635	Passivation:	5kASiO2/8kASiON	
Metal1:	AlCu0.5%	Resistor Tech:	SiCr	
Assembly Site:	MLA	Package / Pin Count:	DBQ / 16	
Mount Compound:	8290	Mold Compound:	G700FG	
Bond:	TS, 1.2 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	L2, 260C	
Qualification Device:	INA118UB	Die Rev/ Size(mils):	E / 70 x 120	
Wafer Fab Site:	TFAB	Fab Process:	450J	
Metal1:	AlCu0.5%	Passivation:	5kASiO2/8kASiON	
Resistor Tech:	SiCr	Die Overcoat:	PI - 2562	
Assembly Site:	MLA	Package / Pin Count:	D / 8	
Mount Compound:	8290	Mold Compound:	G700FG	
Bond:	TS, 1.2 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	3, 260C	
Qualification Device:	OPA656UB	Die Rev/ Size(mils):	C / 39 x 34	
Wafer Fab Site:	TFab/HFab	Technology/ Fab Process:	Bi-POLAR/ CBC10-A77	
Passivation:	10 KA SiOn	Resistor Tech:	SiCr	
Metal1:	0.25kATiW/1kATiW/0.3kATiW/ 7.5kAAICu0.5%/0.5kATiW	Metal2:	1kATiW/9.5kAAICu 0.5%/0.5kATiW	
Assembly Site:	MLA	Package / Pin Count:	D / 8	
Mount Compound:	ABL 8290	Mold Compound:	G700FG	
Bond:	TS, 1.2 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	L3, 260	
Qualification Device:	OPA2604UA	Die Rev/ Size(mils):	E / 80 x 108	
Wafer Fab Site:	HOU/TFAB	Technology /Fab Process:	Bi-POLAR / 634	
Metal1:	AlCu0.5%	Passivation:	5kASiO2/8kASiON	
Resistor Tech:	SiCr	--	--	
Assembly Site:	MLA	Package / Pin Count:	D / 8	
Mount Compound:	8290	Mold Compound:	G700FG	
Mold Compound:	G700FG	Mount Compound:	8290	
Bond:	TS, 1.2 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	L3, 260	
Qualification Device:	DAC712UB	Die Rev/ Size(mils):	H / 121 x 152	
Wafer Fab Site:	TFAB	Technology:	Bi-POLAR	
Fab Process:	443	Passivation:	5kALTO	
Metal1:	AlCu0.5%	Resistor Tech:	NiCr	
Assembly Site:	TAI	Package / Pin Count:	DW / 28	
Mount Compound:	8290	Mold Compound:	G700FG	
Bond:	TS, 1.2 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	3, 260C	
Qualification Device:	DDC101U	Die Rev/ Size(mils):	C / 172 x 302	
Wafer Fab Site:	OKI	Technology:	CMOS	
Fab Process:	493E	Metal1-2:	AlSi (1.0%)	
Passivation:	SiO2 (5kA)/SiON (8kA)	Resistor Tech:	SiCr	
Assembly Site:	TAI	Package / Pin Count:	DW / 24	
Mount Compound:	8290	Mold Compound:	G700FG	
Bond:	TS, 1mil Au	L/F Composition/Finish:	Cu / NiPdAu	
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	3, 260C	

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Qualification Device:	PCM56U	Die Rev/ Size(mils):	D (FBIPPCM56P)
Die Size(mils)	104 X 150	Transistor Count:	1150
Wafer Fab Site:	HFab	Technology:	Bi-POLAR
Fab Process:	647	Passivation:	5KASiO2/8KASiON
Metall:	AlCu (.5%)	Resistor Tech:	SiCr
Assembly Site:	TAI	Package / Pin Count:	DW / 16
Mount Compound:	ABL 8290	Mold Compound:	G700FG
Bond:	TS, 1.2 mil ,Au	L/F Composition/Finish:	Cu / NiPdAu
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	3, 260C

信頼性試験結果

Reliability Test	Condition / Duration	Sample Size/ Fails			
		DAC8831ID	INA2126E	INA118UB	OPA656U
**Life Test	150C, 300Hrs	120/0	-	-	-
**Life Test	125 C, 1008Hrs	-	-	-	120/0
**Unbiased HAST	130C/85%RH, 96 Hrs	77/0	-	-	77/0
**Unbiased HAST	130C/85%RH, 24 Hrs	-	-	-	-
**Autoclave	121C, 100%RH, 240 Hrs	77/0	38/0	34/0	80/0
**Autoclave	121C, 100%RH, 48 Hrs	-	-	-	-
**Temp Cycle	-65/150C, 1000 Cys	76/0	39/0	39/0	54/0
**Thermal Shock	-65/150C, 1000 Cys	77/0	-	-	80/0
**High Temp Storage	150C/1000 Hrs	45/0	-	-	44/0
Manufacturability	Per assembly site requirements	Approved	Approved	Approved	Approved
Physical Dimension	Per Spec	Pass	Pass	Pass	Pass
X-Ray Inspection	Per Assembly Site spec	125/0	125/0	125/0	125/0
Salt Atmosphere	Per Spec	-	-	-	-
Solderability	8 Hrs. Steam Age	-	-	22/0	66/0
Die Shear	5 min.	Pass	Pass	Pass	Pass
Wire Pull	Per Spec	Pass	Pass	Pass	Pass
Ball Shear	Per Spec	Pass	Pass	Pass	Pass
Visual/ Mechanical	Per Spec	Pass	Pass	Pass	Pass
Moisture Sensitivity	L2, 260C	22/0	22/0	-	-
Delta Moisture Sensitivity	L2, 260C	77/0	77/0	-	-
Moisture Sensitivity	L3, 260C	-	-	22/0	22/0
Delta Moisture Sensitivity	L3, 260C	-	-	75/0	76/0
**Preconditioning Information	JEDEC	L2, 260C	L2, 260C	L3, 260C	L3, 260C
Reliability Test	Condition / Duration	Sample Size/ Fails			
		OPA2604U	DAC712UB	DDC101U	PCM56U
**Life Test	150C, 300Hrs	-	-	-	-
**Life Test	125C, 1008Hrs	-	-	-	135/0
**Unbiased HAST	130C/85%RH, 96 Hrs	-	-	-	-
**Unbiased HAST	130C/85%RH, 24 Hrs	-	-	-	90/0
**Autoclave	121C, 100%RH, 240 Hrs	38/0	38/0	38/0	-
**Autoclave	121C, 100%RH, 48 Hrs	-	-	-	232/0
**Temp Cycle	-65/150C, 1000 Cys	40/0	40/0	39/0	158/0
**Thermal Shock	-65/150C, 1000 Cys	-	-	-	80/0
**High Temp Storage	150C, 1000 Hrs	-	-	-	208/0
Manufacturability	Per assembly site requirements	Approved	Approved	Approved	Approved
Physical Dimension	Per Spec	Pass	Pass	Pass	Pass
X-Ray Inspection	Per Assembly Site spec	125/0	125/0	125/0	375/0
Salt Atmosphere	Per Spec	-	-	-	-
Solderability	8 Hrs. Steam Age	22/0	-	-	Pass
Die Shear	5 min.	Pass	Pass	Pass	Pass
Wire Pull	Per Spec	Pass	Pass	Pass	Pass
Ball Shear	Per Spec	Pass	Pass	Pass	Pass
Visual/ Mechanical	Per Spec	Pass	Pass	Pass	Pass
Moisture Sensitivity	L2, 260C	-	-	-	-
Delta Moisture Sensitivity	L2, 260C	-	-	-	-
Moisture Sensitivity	L3, 260C	22/0	22/0	22/0	44/0
Delta Moisture Sensitivity	L3, 260C	77/0	77/0	76/0	158/0
**Preconditioning Information	JEDEC	L3, 260C	L3, 260C	L3, 260C	L3, 260C

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信頼性試験結果			
信頼性試験期間	開始	—	終了 2006 年 12 月 7 日
信頼性試験		試料構成詳細	
Qualification Device:	ADS7811U	Die Rev/ Size(mils):	G / 147 X 256
Wafer Fab Site:	Dalsa/TFAB	Technology:	CMOS
Fab Process:	490	Passivation:	(5kÅ)SiO2/(9kÅ)SiON
Metal1/ 2:	Al/Si (1.5%) / Al/Si (1.0%)	Resistor Tech:	NiCr
Assembly Site:	TAI	Package / Pin Count:	DW / 28
Mount Compound:	ABl-8290	Mold Compound:	G700FG
Bond:	TS, 1.3 Au	L/F Composition/Finish:	Cu / NiPdAu
Moist Sens Level:	L3, 260°C	Die Overcoat:	PI-2562
Flammability Rating:	UL94 Class V-0		
Qualification Device:	ISO124U	Die Rev/ Size(mils):	E / 108 x 110
Wafer Fab Site:	HFab/TFab	Technology:	Bi-Polar
Fab Process:	635	Passivation:	5kÅ SiO2/ 8kÅ SiON
Metal1:	AlCu (0.5%)	Resistor Tech:	SiCr
Assembly Site:	HNT	Package / Pin Count:	DVA / 8
Mount Compound:	ABL 8290	Mold Compound:	G700FG
Bond:	TS, 1.3, Au		
Flammability Rating:	UL94 Class V-0	Moist Sens Level:	L3, 260°C
Qualification Device:	OPA2277U	Die Rev/ Size(mils):	B / 80 x 125
Wafer Fab Site:	HFab/TFab	Technology:	Bi-Polar
Fab Process:	635G	Passivation:	5KA SiO2/8KA SiON
Metal1:	AlSi1.0%	Resistor Tech:	SiCr
Assembly Site:	TIM	Package / Pin Count:	D / 8
Mount Compound:	ABL 8290	Mold Compound:	G700FG
Bond:	TS 1.2 Au	L/F Composition/Finish:	Cu / NiPdAu
Die Overcoat:	PI-2562	-	-
Flammability Rating:	UL94-V0	Moist Sens Level:	L3, 260°C
Qualification Device:	PGA2310UA	Die Rev/ Size(mils):	C / 155 X 260
Wafer Fab Site:	OKI/TFAB	Technology:	BICMOS
Fab Process:	OKI-494E	Passivation:	5kÅ LTO/8kÅ SiON
Metal1/ 2:	Al/Si (1.5%) / Al/Si (1.0%)	Resistor Tech:	SiCr
Assembly Site:	TAI	Package / Pin Count:	DW / 16
Mount Compound:	ABL 8290	Mold Compound:	G700FG
Bond:	TS, 1.2 mil ,Au		
Moist Sens Level:	L3, 260°C	Flammability Rating:	UL94 Class V-0
Qualification Device:	ISO150AU	Die Rev/ Size(mils):	F / 56 x 80
Wafer Fab Site:	OKI	Technology:	BICMOS
Fab Process:	OKI	Passivation:	PSG(AP-CVD)2KA,P205 12WT%/P-SiN(PE-CVD) 85KA
Metal1/ 2:	AlSi1%, 5kÅ / AlSi1%, 10kÅ	Resistor Tech:	Poly
Assembly Site:	HNT	Package / Pin Count:	DVB / 12
Mount Compound:	ABL 8006NS	Mold Compound:	G700FG
Bond:	1.3 mil, Au	L/F Composition/Finish:	Cu / NiPdAu
Moist Sens Level:	L3, 260°C	Die Overcoat:	N/A
Down Bonds:	4	Flammability Rating:	UL94 Class V-0

信頼性試験結果						
Reliability Test	Condition / Duration	Sample Size/ Fails				
		ADS7811U	ISO124U	OPA2277U	PGA2310UA	ISO150AU
**Life Test	125C, 1008Hrs	-	120/0	-	-	120/0
**Unbiased HAST	130C/85%RH, 96 Hrs	-	74/0	-	-	78/0
**Autoclave	121C, 240 Hrs	38/0	77/0	77/0	39/0	78/0
**Temp Cycle	-65/150C, 1000 Cys	39/0	77/0	40/0	40/0	77/0
**Thermal Shock	-65/150C, 1000 Cys	-	77/0	-	-	78/0
**High Temp Storage	150C, 1000 Hrs	-	45/0	-	-	45/0
Manufacturability	Per assembly site requirements	Approved	Approved	Approved	Approved	Approved
Physical Dimension	Per Spec	Pass	Pass	Pass	Pass	5/0
X-Ray Inspection	Per Assembly Site spec	125/0	125/0	125/0	125/0	30/0
Salt Atmosphere	Per Spec	-	22/0	-	-	22/0
Solderability	8 Hrs. Steam Age	N/A	22/0	22/0	-	-
Die Shear	5 min.	Pass	Pass	Pass	Pass	Pass
Wire Pull	Per Spec	Pass	Pass	Pass	Pass	Pass
Ball Shear	Per Spec	Pass	Pass	Pass	Pass	Pass
Visual/Mechanical	Per Spec	Pass	Pass	Pass	Pass	Pass
Moisture Sensitivity	L2, 260C	-	22/0	-	-	-
Moisture Sensitivity	L3, 260C	22/0	-	22/0	22/0	22/0
Delta Moisture Sensitivity	L2, 260C	-	77/0	-	-	-
Delta Moisture Sensitivity	L3, 260C	77/0	-	77/0	77/0	77/0
**Preconditioning Information	JEDEC	L3, 260C	L3, 260C	L3, 260C	L3, 260C	L3, 260C

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信頼性試験結果				
信頼性試験期間	開始	—	終了	2005 年 7 月 13 日
信頼性試験 - 試料構成詳細				
Qualification Device:	PCM1604PT	Die Rev/ Size(mils):	G / 4.65 x 3.57	
Wafer Fab Site:	TSMC	Technology:	Bi-CMOS	
Fab Process:	0.35um-21-polyside/Dual Gat	Metal1-2:	AlCu(4kA)/TiN(1.4kA)	
Metal3:	AlCu(8kA)/TiN(250A)	Passivation:	SiO21.5kA/SOG3kA/SiN10kA)	
Resistor Tech:	Poly			
Assembly Site:	TAI	Package / Pin Count:	PT / 48	
Mount Compound:	HIT EN4085-OVN	Mold Compound:	G700FG	
Bond:	1.0 mil Au TS	L/F Composition/Finish:	Cu / NiPdAu	
Moist Sens Level:	1, 260°C	Flammability Rating:	UL94-V0	
Qualification Device:	PCM1745E	Die Rev/ Size(mils):	A / 98 x 101	
Wafer Fab Site:	OKI	Technology:	CMOS	
Fab Process:	0.6um TPDM CMOS	Metal1-2:	Ti(700A)/AlSiCu(5kA)/Ti(300A)/Ti N(1kA)	
Metal2:	Ti(700A)/AlSiCu(8kA)/TiN(500A)	Passivation:	SiN(8.5kA)	
Resistor Tech:	Poly			
Assembly Site:	MLA	Package / Pin Count:	DB / 20	
Mount Compound:	HITACHI EN4088Z	Mold Compound:	GR825-73B	
Bond:	1.2 mil Au TS	L/F Composition/Finish:	Cu / NiPdAu	
Moist Sens Level:	1, 260°C	Flammability Rating:	UL94V-0	
Qualification Device:	PCM2704DB	Die Rev/ Size(mils):	A / 168 x 127	
Wafer Fab Site:	TSMC	Technology:	CMOS	
Fab Process:	0.35um-polyside/Dual Gate	Metal1-2:	AlCu(4kA)/TiN(1.4kA)	
Metal3:	AlCu(8kA)/TiN(250A)	Passivation:	SiO21.5kA/SOG3kA/SiN10kA	
Resistor Tech:	Poly			
Assembly Site:	MLA	Package / Pin Count:	DB / 28	
Mount Compound:	HITACHI EN4088Z	Mold Compound:	GR825-73B	
Bond:	1.0 mil Au TS	L/F Composition/Finish:	Cu / NiPdAu	
Moist Sens Level:	1, 260°C	Flammability Rating:	UL94V-0	
Qualification Device:	PCM1680DBQ	Die Rev/ Size(mils):	D / 84 x 178	
Wafer Fab Site:	TSMC	Technology:	CMOS	
Fab Process:	0.35um TW24LGA	Metal1-2:	AlCu(4kA)/TiN(1.4kA)	
Metal3:	AlCu(8kA)/TiN(250A)	Passivation:	SiO21.5kA/SOG3kA/SiN10kA	
Resistor Tech:	Poly			
Assembly Site:	CAR-CARSEM	Package / Pin Count:	DBQ / 28	
Mount Compound:	ABLESTIC 8290	Mold Compound:	SUMITOMO G600C	
Bond:	1.0 mil Au TS	L/F Composition/Finish:	Cu / NiPdAu	
Moist Sens Level:	1, 260°C	Flammability Rating:	UL94V-0	
Qualification Device:	DDC112UK	Die Rev/ Size(mils):	G / 153 x 173	
Wafer Fab Site:	TSMC	Technology:	CMOS	
Fab Process:	TSMC - 0.6um DPDM	Metal1:	Ti0.4kA/TiN1kA/AlSiCu4kA/Ti 0.25kA	
Metal2:	Ti1.5kA/AlSiCu8kA/Ti0.25kA	Passivation:	SiO2/Si3N4, 2kA/7kA	
Resistor Tech:	Poly			
Assembly Site:	TAI-Taipei	Package / Pin Count:	DW / 28	
Mount Compound:	HIT EN-4088Z	Mold Compound:	GR825-73B	
Bond:	1.3 mil Au TS			
Moist Sens Level:	1, 260°C	Flammability Rating:	UL94-V0	
Qualification Device:	PCM1606E	Die Rev/ Size(mils):	D / 117 X 83	
Wafer Fab Site:	UMCJ	Technology:	CMOS	
Fab Process:	0.35um CMOS DPTM/Single Gate	Metal1-2:	TiN50A/TiN1kA/Ti50A/AlCu5kA/ TiN500A/Ti200A	
Metal3:	Ti50A/TiN500A/AlCu8kA	Passivation:	SiO2(4kA)/SiN(7kA)	
Resistor Tech:	Poly			
Assembly Site:	MLA	Package / Pin Count:	DB / 20	
Mount Compound:	HITACHI EN4088Z	Mold Compound:	GR825-73B	
Bond:	1.0 mil Au TS	L/F Composition/Finish:	Cu / NiPdAu	
Moist Sens Level:	L1, 260°C	Flammability Rating:	UL94-V0	

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Qualification Device:	PCM1725D	Die Rev/ Size(mils):	C / 87 X 71
Wafer Fab Site:	TSMC	Technology:	CMOS
Fab Process:	0.6um DPDM	Metal1:	Ti(400A)/TiN(1kA)/AlSiCu(4kA)
Metal2:	Ti(1.5kA)/AlSiCu(8kA)	Passivation:	SiO2(2kA)/SiN(7kA)
Resistor Tech:	Poly		
Assembly Site:	MLA	Package / Pin Count:	D / 14
Mount Compound:	HITACHI EN4088Z	Mold Compound:	GR825-73B
Bond:	1.0 mil Au TS	L/F Composition/Finish:	Cu / NiPdAu
Moist Sens Level:	L1, 260°C	Flammability Rating:	UL94-V0

信頼性試験結果

Reliability Test	Condition / Duration	Sample Size/ Fails			
		PCM1604PT	PCM1745E	PCM2704DB	PCM1680DBQ
**Life Test	150C; 300 Hrs	120/0	119/0	120/0	135/0
**Unbiased HAST	130C; 85% RH; 96 Hrs	89/0	90/0	90/0	90/0
**Autoclave	121C; 240 Hrs	77/0	90/0	77/0	84/0
**Temp Cycle	-65/150C, 1000 Cys	77/0	90/0	77/0	84/0
**Thermal Shock	-65/150C, 1000 Cys	77/0	81/0	77/0	84/0
**High Temp Storage	150C, 1000 hrs	45/0	54/0	51/0	69/0
Characterization	Per Products Spec	Passed	Passed	Passed	Passed
Delta MSL	Level 1, 260°C	Pass	Pass	Pass	Pass
X-Ray Inspection	Per Assembly Site spec	Pass	Pass	Pass	Pass
Solderability	8 hrs Steam Age	Pass	Pass	Pass	Pass
Die Shear	Per A/T site Spec	Pass	Pass	Pass	Pass
Wire Pull	Per Spec	Pass	Pass	Pass	Pass
Ball Shear	Per Spec	Pass	Pass	Pass	Pass
Lead Pull	Per Spec	Pass	Pass	Pass	Pass
Lead Finish Adhesion	Per Spec	Pass	Pass	Pass	Pass
Physical Dimension	Per Spec	Pass	Pass	Pass	Pass
Visual Mechanical	Per Spec	Pass	Pass	Pass	Pass
Salt Atmosphere	Per Spec	Pass	Pass	Pass	Pass
Manufacturability	Per A/T site Spec.	Approved	Approved	Approved	Approved

Reliability Test	Condition / Duration	Sample Size/ Fails		
		DDC112UK	PCM1606E	PCM1725D
**Life Test	150C; 300 Hrs	120/0	119/0	126/0
**Unbiased HAST	130C; 85% RH; 96 Hrs	84/0	90/0	93/0
**Autoclave	121C; 240 Hrs	77/0	90/0	78/0
**Temp Cycle	-65/150C, 1000 Cys	77/0	90/0	78/0
**Thermal Shock	-65/150C, 1000 Cys	77/0	81/0	78/0
**High Temp Storage	150C, 1000 hrs	45/0	54/0	78/0
Characterization	Per Products Spec	Passed	Passed	Passed
Delta MSL	Level 1, 260C	Pass	Pass	Pass
X-Ray Inspection	Per Assembly Site spec	Pass	Pass	Pass
Solderability	8 hrs Steam Age	Pass	Pass	Pass
Die Shear	Per A/T site Spec	Pass	Pass	Pass
Wire Pull	Per Spec	Pass	Pass	Pass
Ball Shear	Per Spec	Pass	Pass	Pass
Lead Pull	Per Spec	Pass	Pass	Pass
Lead Finish Adhesion	Per Spec	Pass	Pass	Pass
Physical Dimension	Per Spec	Pass	Pass	Pass
Visual Mechanical	Per Spec	Pass	Pass	Pass
Salt Atmosphere	Per Spec	Pass	Pass	Pass
Manufacturability	Per A/T site Spec.	Approved	Approved	Approved