Integrated Device Technology, Inc.
2975 Stender Way, Santa Clara, CA - 95054

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: G9911-05 DATE: November 18, 1999
Product Affected: All Platic packages

Manufacturing Location Affected: ALL
Date Effective: February 18, 2000

MEANS OF DISTINGUISHING CHANGED DEVICES:
- ☐ Product Mark
- ☐ Back Mark
- ☐ Date Code
- ■ Other: "assembly cut-off lot number"

Contact: PS Tow
Title: Corporate Quality / Reliability Manager
Phone #: (408) 492-8206
Fax #: (408) 727-2328
E-mail: pstow@idt.com

Additional Data:

Samples:

DESCRIPTION AND PURPOSE OF CHANGE:
- ☐ Die Technology
- ☐ Wafer Fabrication Process
- ☐ Assembly Process
- ☐ Equipment
- ■ Material
- ☐ Testing
- ☐ Manufacturing Site
- ☐ Data Sheet

Add Shinetsu KMC184 and KMC184VA (low alpha version) family and Sumitomo EME-6730 and EME-9730 (low alpha version) family as qualified mold compound for all plastic packages.

RELIABILITY/QUALIFICATION SUMMARY:
Please see attached qualification reports (Attachments 1, 2, 3 & 4)

CUSTOMER ACKNOWLEDGMENT OF RECEIPT:
IDT records indicate that you require written notification of this change. Please use the acknowledgement below or E-Mail to grant approval or request additional information. If IDT does not receive acknowledgement within 30 days of this notice it will be assumed that this change is acceptable.

Customer: ____________________ ☐ ***Approval for shipments prior to effective date.***

Name/Date: ____________________ E-Mail Address: ____________________

Title: ____________________ Phone# /Fax# : ____________________

CUSTOMER COMMENTS: ____________________

RECD. BY: ____________________ DATE: ____________________

Integrated Device Technology, Inc.

Attachment # 1 PCN # G9911-05

Reliability Qualification Report

I. QUAL DESCRIPTION

Qual Type : NEW ASSEMBLY TECHNIQUE

Qual Objective : **QUALIFICATION OF LOW STRESS MOLD COMPOUNDS KMC-184-9 / ARAT 2184-9**

II. QUAL VEHICLE

		Lot#1	Lot#2	Lot#3	Lot#4
Product Group	:	LOGIC	SRAM	SMP	MPR
Device Type	:	316233ZQ	71V124N	70V3579Z	79RV465X
Die Size	:	40 x 172 mils	175 x 196 mils	302 x 404 mils	239 x 154 mils
Wafer Lot #	:	P4772-9700	S449130552	449150680A	S448470233E
Assembly Lot #	:	QEK28442	EB10978	EI47028	EI44239
Package Type	:	PA56 (56 Leads TSSOP)	PH32 (32 Leads TSOP)	DR208 (PQFP 208)	DP208 (PQFP 208)
Body Size	:	6.1 x 14.0 mm	10.16 x 20.95 mm	28.0 x 28.0 mm	28 x 28 mm
Package Thickness	:	1.0 mm	1.0 mm	3.4 mm	3.4 mm
Lead Pitch	:	0.50 mm	1.27 mm	0.50 mm	0.50 mm
Lead frame type	:	OLIN C7025	OLIN C7025	Olin C7025	C7025 (Copper)
Lead frame thickness	:	6 mils	5 mils	6 mils	6 mils
Die Pad Size	:	98 x 220 mils	220 x 257 mils	433 x 433 mils	276 x 276 mils
Heat Slug	:	n/a	n/a	n/a	Cu-Ni/Black Oxide (Exposed)
Die Attach Material	:	8390 (ABLESTIK)	8390 (ABLESTIK)	84-1LMIS R4 (ABLESTIK)	8361J (ABLESTIK)
Wire Bond	:	GL-2 1.0 mil Au (TANAKA)	GL-2 1.0 mil Au (TANAKA)	M3 1.3 mil Au (TANAKA)	1.0mil Long Loop Au (MIKYEONG)
Mold Compound	:	**Arat 2184-9 (CIBA GEIGY)**	**KMC 184-9 (SHINETSU)**	**KMC 184-9 (SHINETSU)**	**KMC 184-9 (SHINETSU)**
Lead Finish	:	SnPb Plating	SnPb Plating	SnPb Plating	SnPb Plating
Assembly Location	:	IDT-Phils	CHIP PAC KOREA	ANAM	ANAM

Reliability Qualification Report

III. QUALIFICATION MATRIX DATA and RESULTS

Test	Description	QL* ACC/SS	TEST POINT (Assy #)	#REF! #REF! QUAL RESULTS	#REF! #REF! QUAL RESULTS	#REF! #REF! QUAL RESULTS	#REF! #REF! QUAL RESULTS
Group B : Package / Process							
Test	**Description**						
B5	STEAM PRESSURE POT TEST (SPP) : Unbiased, Saturated Steam, 2 Atm., 121 °C +	0/45	Preconditioning	0/45	0/45	-	-
	END POINT ELECTRICAL TEST		168 hrs	0/45	0/45	-	-
B6A	BAKE & BALL SHEAR TEST : IDT Spec MAC-3057 (Ball shear strength > 40 g @ 48 hrs)	0/5	-	0/5	-	0/5	0/5
B6B	WIRE PULL TEST : IDT Spec MAC-3010 (Bond pull strength > 5.0 grams)	0/5	-	0/5	-	0/5	-
B7	X-RAY : IDT Spec. MAC-3012 (Package voids, Die attach voids and Wire sweep)	0/45	-	0/45	0/45	0/45	-
B8	SAT CSAM ANALYSIS : IDT Spec MAC-3070	0/10	-	0/10	0/10	0/10	0/10
B10	EXTERNAL VISUAL INSPECTION : Mil-Std-883, Method 2009	0/25	-	0/25	0/25	0/25	0/25
B11	INTERNAL VISUAL INSPECTION : Mil-Std-883, Method 2010	0/5	-	0/5	0/5	0/5	0/5
B13	MOISTURE CLASSIFICATION : IDT Spec QCA-1416	0/30	-	0/30	0/30	0/30	0/30
Group C : Package / Die Integrity							
Test	**Description**						
C2B	HIGHLY ACCELERATED STRESS TEST (HAST), Vcc max static bias, TA = 130°C/85% RH +	0/45	Preconditioning	0/45	-	0/45	0/45
	END POINT ELECTRICAL TEST		100 hrs	0/45	-	0/45	WW9948
C4	HIGH TEMPERATURE STABILIZATION BAKE (HTSB) : TA = 150 °C +	0/45	500 hrs	-	-	0/77	0/77
	END POINT ELECTRICAL TEST		1000 hrs	-	-	WW9948	0/77
Group D : Package Design							
Test	**Description**						
D3	TEMPERATURE CYCLE (T/C) : Mil-Std-883, Method 1010, Cond. C (-65°C to 150°C) +	0/45	Preconditioning	0/45	0/45	WW9947	0/45
	END POINT ELECTRICAL TEST		500 cyc	0/45	0/45	WW9952	0/45

QL* - Quality Level, number of units

S.A.T. - Scanning Acoustic Tomography

Reliability Qualification Report

I. QUAL DESCRIPTION

Qual Type : NEW ASSEMBLY TECHNIQUE

Qual Objective : **QUALIFICATION OF LOW STRESS MOLD COMPOUNDS EME-6730UC**

II. QUAL VEHICLE

		Lot#1	Lot#2	Lot#3
Product Group	:	SRAM	SRAM	MPR
Device Type	:	71V016N	71016N	79RV465X
Die Size	:	175 x 196 mils	175 x 196 mils	239 x 154 mils
Wafer Lot #	:	S448090340	448460141	S448470233E
Assembly Lot #	:	QEK24915	QEK24870N	EI44240
Package Type	:	PB44 (44 Leads SOJ)	PB44 (44 Leads SOJ)	DP208 (PQFP 208)
Body Size	:	400 x 1125 mils	400 x 1125 mils	28 x 28 mm
Package Thickness	:	113 mils	113 mils	3.4 mm
Lead Pitch	:	50 mils	50 mils	0.50 mm
Lead frame type	:	Olin 194	Olin 194	C7025 (Copper)
Lead frame thickness	:	10 mils	10 mils	6 mils
Die Pad Size	:	275 x 235 mils	275 x 235 mils	276 x 276 mils
Heat Slug	:	n/a	n/a	Cu-Ni/Black Oxide (Exposed)
Die Attach Material	:	8390 (ABLESTIK)	8390 (ABLESTIK)	8361J (ABLESTIK)
Wire Bond	:	M3 1.3 mil Au (TANAKA)	M3 1.3 mil Au (TANAKA)	1.0mil Long Loop Au (MIKYEONG)
Mold Compound	:	**EME-6730UC (SUMITOMO)**	**EME-6730UC (SUMITOMO)**	**EME-6730UC (SUMITOMO)**
Lead Finish	:	SnPb Plating	SnPb Plating	SnPb Plating
Assembly Location	:	IDT-Phils	IDT-Phils	ANAM

Integrated Device Technology, Inc.

Attachment # 4 PCN # G9911-05

Reliability Qualification Report

III. QUALIFICATION MATRIX DATA and RESULTS

Test	Description	QL* ACC/SS	TEST POINT (Assy #)	#REF! QUAL RESULTS (#REF!)	#REF! QUAL RESULTS (#REF!)	#REF! QUAL RESULTS (#REF!)
Group B : Package / Process						
B6A	BAKE & BALL SHEAR TEST : IDT Spec MAC-3057 (Ball shear strength > 40 g @ 48 hrs)	0/5	-	0/5	0/5	0/5
B6B	WIRE PULL TEST : IDT Spec MAC-3010 (Bond pull strength > 5.0 grams)	0/5	-	0/5	0/5	-
B7	X-RAY : IDT Spec. MAC-3012 (Package voids, Die attach voids and Wire sweep)	0/45	-	0/45	0/45	-
B8	SAT CSAM ANALYSIS : IDT Spec MAC-3070	0/10	-	0/10	0/10	0/10
B10	EXTERNAL VISUAL INSPECTION : Mil-Std-883, Method 2009	0/25	-	0/25	0/25	0/25
B11	INTERNAL VISUAL INSPECTION : Mil-Std-883, Method 2010	0/5	-	0/5	0/5	0/5
B13	MOISTURE CLASSIFICATION : IDT Spec QCA-1416	0/30	-	0/30	0/30	0/30
Group C : Package / Die Integrity						
C1	LIFE TEST : Mil-Std-883, Method 1005 (Dynamic B/I, Vcc = Vccmax, TA = 135 °C) + END POINT ELECTRICAL TEST	0/77	500 hrs	0/77	0/77	-
			1000 hrs	0/77	0/77	-
C2B	HIGHLY ACCELERATED STRESS TEST (HAST), Vcc max static bias, TA = 130°C/85% RH + END POINT ELECTRICAL TEST	0/45	Preconditioning	0/45	0/45	-
			100 hrs	0/45	0/45	-
C4	HIGH TEMPERATURE STABILIZATION BAKE (HTSB) : TA = 150 °C + END POINT ELECTRICAL TEST	0/45	500 hrs	0/77	0/77	-
			1000 hrs	0/77	0/77	-
Group D : Package Design						
D2	THERMAL SHOCK (T/S) : Mil-Std-883, Method 1011 Cond. C (-65°C to 150°C) + END POINT ELECTRICAL TEST	0/45	100 cyc	0/45	0/45	-
D3	TEMPERATURE CYCLE (T/C) : Mil-Std-883, Method 1010, Cond. C (-65°C to 150°C) + END POINT ELECTRICAL TEST	0/45	Preconditioning	0/45	0/45	0/45
			500 cyc	0/45	0/45	0/45

Notes:

QL* - Quality Level, number of units

S.A.T. - Scanning Acoustic Tomography

Corporate QA/Rel Engineering