



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 Plastic 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                      Additional Data:  
 Phone #: (408) 492-8206  
 Fax #: (408) 727-2328    Samples:  
 E-mail: pstow@idt.com

**DESCRIPTION AND PURPOSE OF CHANGE:**

- Die Technology
- Wafer Fabrication Process                      Add Shinetsu KMC184 and KMC184VA (low alpha version) family and Sumitomo
- Assembly Process                                      EME-6730 and EME-9730 (low alpha version) family as qualified mold compound for
- Equipment    all plastic packages.
- Material
- Testing
- Manufacturing Site
- Data Sheet

**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 # G99111-05

# 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-ILMIS 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



Integrated Device Technology, Inc.

Attachment # 2 PCN # G9911-05

# Reliability Qualification Report

## III. QUALIFICATION MATRIX DATA and RESULTS

Test	Description	QL* ACC/SS	TEST POINT	Assy #	#REF!	#REF!	#REF!	#REF!	#REF!
					QUAL RESULTS	QUAL RESULTS	QUAL RESULTS	QUAL RESULTS	QUAL RESULTS
B5	STEAM PRESSURE POT TEST (SPP) : Unbiased, Saturated Steam, 2 Atm., 121 °C + END POINT ELECTRICAL TEST	0/45	Preconditioning 168 hrs		0/45	0/45	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	0/5
B6B	WIRE PULL TEST : IDT Spec MAC-3010 (Bond pull strength > 5.0 grams)	0/5	-		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	0/45	-
B8	SAT CSAM ANALYSIS : IDT Spec MAC-3070	0/10	-		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	0/25
B11	INTERNAL VISUAL INSPECTION : Mil-Std-883, Method 2010	0/5	-		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	0/30
<b>Group C : Package / Die Integrity</b>									
<b>Test</b>	<b>Description</b>								
C2B	HIGHLY ACCELERATED STRESS TEST (HAST), Vcc max static bias, TA = 130°C/85% RH + END POINT ELECTRICAL TEST	0/45	Preconditioning 100 hrs		0/45	-	0/45	0/45	0/45
C4	HIGH TEMPERATURE STABILIZATION BAKE (HTSB) : TA = 150 °C + END POINT ELECTRICAL TEST	0/45	500 hrs 1000 hrs		-	-	0/77	0/77	0/77
<b>Group D : Package Design</b>									
<b>Test</b>	<b>Description</b>								
D3	TEMPERATURE CYCLE (T/C) : Mil-Std-883, Method 1010, Cond. C (-65°C to 150°C) + END POINT ELECTRICAL TEST	0/45	Preconditioning 500 cyc		0/45	0/45	0/45	0/45	0/45

QL\* - Quality Level, number of units  
S.A.T. - Scanning Acoustic Tomography

Corporate QA/Rel Engineering



Integrated Device Technology, Inc.

Attachment # 3 PCN # G9911-05

# 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	#REF!	#REF!	#REF!	#REF!
				Assy #	QUAL RESULTS	QUAL RESULTS	QUAL RESULTS
<b>Group B : Package / Process</b>							
B6A	BAKE & BALL SHEAR TEST : IDT Spec MAC-3057 (Ball shear strength > 40 g @ 48 hrs)	0/5	-	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	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
<b>Group C : Package / Die Integrity</b>							
<b>Test</b>	<b>Description</b>						
C1	LIFE TEST : Mil-Std-883, Method 1005 (Dynamic B/I, Vcc = Vccmax, TA = 135 °C) + END POINT ELECTRICAL TEST	0/77	500 hrs 1000 hrs	0/77 0/77	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 100 hrs	0/45 0/45	0/45 0/45	- -	- -
C4	HIGH TEMPERATURE STABILIZATION BAKE (HTSB) : TA = 150 °C + END POINT ELECTRICAL TEST	0/45	500 hrs 1000 hrs	0/77 0/77	0/77 0/77	- -	- -
<b>Group D : Package Design</b>							
<b>Test</b>	<b>Description</b>						
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 500 cyc	0/45 0/45	0/45 0/45	0/45 0/45	0/45 0/45

Notes:

QL\* - Quality Level, number of units

S.A.T. - Scanning Acoustic Tomography

Corporate QA/Rel Engineering