



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

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: G-0110-06 Product Affected: Package Family TSSOP, TQFP, TSOP Date Effective: March 15, 2002	DATE: 12/14/2001	MEANS OF DISTINGUISHING CHANGED DEVICES: <input type="checkbox"/> Product Mark <input type="checkbox"/> Back Mark <input type="checkbox"/> Date Code <input checked="" type="checkbox"/> Others, alpha suffix "F" in Assembly lot number.
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Contact: Geoffrey Cortes Title: Manager, Corporate Quality & Reliability Phone #: (408) 492-8321 Fax #: (408) 727-2328 E-mail: gcortes@idt.com	Attachment: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Samples: Available upon request.
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DESCRIPTION AND PURPOSE OF CHANGE:

- Die Technology
- Wafer Fabrication Process
- Assembly Process
- Equipment
- Material IDT will be qualifying the new EME-7351LP and EME-S351LP mold compound materials from Sumitomo.
- Testing Once qualified, IDT will add these mold compound materials as qualified materials for TSOP,
- Manufacturing Site TSSOP and TQFP packages.
- Data Sheet
- Other

RELIABILITY/QUALIFICATION SUMMARY:

Qualification testing will verify that there is no change to the product reliability.

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.

IDT reserves the right to ship either version manufactured after the process change effective date until the inventory on the earlier version has been depleted.

Customer: _____	<input type="checkbox"/> Approval for shipments prior to effective date.
Name/Date: _____	E-Mail Address: _____
Title: _____	Phone# /Fax# : _____

CUSTOMER COMMENTS: _____

IDT ACKNOWLEDGMENT OF RECEIPT:

RECD. BY: _____ DATE: _____



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PCN Summary

PCN Type: Mold compound materials, Sumitomo EME-7351LP and EME-S351LP.

Data Sheet Change No

Detail of Change Additional mold compound materials.

Description	Current	Add
Mold Compound	Shinetsu KMC 184, Shinetsu KMC 184VA, Sumitomo 6300, Sumitomo 7320 series	Sumitomo 7351, Sumitomo S351 series

Package Family	Package Type	Top Mark Designator	Package Family	Package Type	Top Mark Designator	Package Family	Package Type	Top Mark Designator
TSSOP	PA48	PA	TQFP	PK100	PF, TF	TSOP	PH44	PH
	PA56	PA		PK128	PRF, TF, PF			
				PN64	PF			
				PN80	PF			
				PN100	PF			

Note: Only the packages with the above top mark designator are impacted by this change.

Conversion schedule (Estimated)

	Sample Availability Beginning	Production Shipments Beginning
TSSOP	1/2/2002	2/18/2002
TQFP	1/2/2002	3/18/2002
TSOP	12/3/2001	2/18/2002
TSOP (Low Alpha)	2/1/2002	4/1/2002

Please contact your local field sales representative for sample availability and production shipments.



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ATTACHMENT - PCN #: G-0110-06

Qualification Plan: P01-06-02 **Expected Completion Date:** 1/18/2002
Test Vehicle: IDT71V016
Package: PH44 (TSOP) EME-7351 mold compound material qual

	Test Methods	Sample /# Fails	71V016H Lot# 1	71V016H Lot# 2	71V016N Lot# 3
Highly Accelerated Stress Test (HAST) (100 Hrs, @ 130°C/85%RH,Static Bias)	EIA/JESD22-A110	45/0	45/0	45/0	45/0
Temperature Cycling (-65°C to +150°C, 500 cyc)	MIL-STD-883 Method 1010	45/0	45/0	45/0	1/7/02
Life Test (+135°C, 750 hrs)	MIL-STD-883 Method 1005	77/0	77/0	77/0	1/18/02
Hi Temp Bake (+150°C, 1000 hrs)	MIL-STD-883 Method 1008	77/0	77/0	77/0	1/4/02
Auto Clave (SPP) (168Hrs, @ 2ATM, 121°C)	EIA/JESD22-A102	45/0	45/0	45/0	45/0
Package Moisture Characterization	JEDEC J-STD-20	22/0	11/0	11/0	1/11/02
Internal Visual Inspection	MIL-STD-883 Method 2010	5/0	5/0	5/0	5/1/00
External Visual Inspection	MIL-STD-883 Method 2009	25/0	25/0	25/0	25/0
S.A.T.	JEDEC J-STD-035	10/0	10/0	10/0	1/11/02
X-ray Examination	Per IDT specification	45/0	45/0	45/0	45/0
Bond Pull Test	MIL-STD-883 Method 2011	5/0	5/0	5/0	5/0
Solderability Test	MIL-STD-883 Method 2003	5/0	5/0	5/0	12/21/01
Bake & Ball Shear Test	EIA/JESD22-B116	5/0	5/0	5/0	5/0
Physical Dimension	MIL-STD-883 Method 2016	5/0	5/0	5/0	12/21/01
Lead Integrity Test	MIL-STD-883 Method 2004	3/0	3/0	3/0	12/21/01
Resistance to Solvents	MIL-STD-883 Method 2015	3/0	3/0	3/0	3/0



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PRODUCT/PROCESS CHANGE NOTICE (PCN)

ATTACHMENT - PCN #: G-0110-06

Qualification Plan: P01-10-01 **Expected Completion Date:** 2/15/2002
Test Vehicle: IDT72V811 IDT7028
Package: PN64 (TQFP) PN100 (TQFP) EME-7351 mold compound material qual

	Test Methods	Sample /# Fails	72V811W Lot 1	7028Y Lot# 2
Highly Accelerated Stress Test (HAST) (100 Hrs, @ 130°C/85%RH,Static Bias)	EIA/JESD22-A110	45/0	2/15/2002	2/15/2002
Temperature Cycling (-65°C to +150°C, 500 cyc)	MIL-STD-883 Method 1010	45/0	2/15/2002	2/15/2002
Life Test (+125°C, 1000 hrs or equivalent)	MIL-STD-883 Method 1005	77/0	2/15/2002	2/15/2002
Hi Temp Bake (+150°C, 1000 hrs)	MIL-STD-883 Method 1008	77/0	2/15/2002	2/15/2002
Auto Clave (SPP) (168Hrs, @ 2ATM, 121°C)	EIA/JESD22-A102	45/0	2/15/2002	2/15/2002
Package Moisture Characterization	JEDEC J-STD-20	45/0	2/15/2002	2/15/2002
Internal Visual Inspection	MIL-STD-883 Method 2010	5/0	2/15/2002	2/15/2002
External Visual Inspection	MIL-STD-883 Method 2009	25/0	2/15/2002	2/15/2002
S.A.T.	JEDEC J-STD-035	10/0	2/15/2002	2/15/2002
X-ray Examination	Per IDT specification	45/0	2/15/2002	2/15/2002
Bond Pull Test	MIL-STD-883 Method 2011	5/0	2/15/2002	2/15/2002
Solderability Test	MIL-STD-883 Method 2003	5/0	2/15/2002	2/15/2002
Bake & Ball Shear Test	EIA/JESD22-B116	5/0	2/15/2002	2/15/2002
Physical Dimension	MIL-STD-883 Method 2016	5/0	2/15/2002	2/15/2002
Lead Integrity Test	MIL-STD-883 Method 2004	3/0	2/15/2002	2/15/2002
Resistance to Solvents	MIL-STD-883 Method 2015	3/0	2/15/2002	2/15/2002



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ATTACHMENT - PCN #: G-0110-06

Qualification Plan: P01-10-02 **Expected Completion Date:** 1/18/2002
Test Vehicle: 74ALVC164245 74FCT16823
Package: PA48 (TSSOP) PA56 (TSSOP) EME-7351 mold compound material qual

	Test Methods	Sample /# Fails	60245XE Lot# 1	61823N Lot# 2
Highly Accelerated Stress Test (HAST) (100 Hrs, @ 130°C/85%RH,Static Bias)	EIA/JESD22-A110	45/0	1/18/2002	1/18/2002
Temperature Cycling (-65°C to +150°C, 500 cyc)	MIL-STD-883 Method 1010	45/0	1/18/2002	1/18/2002
Life Test (+125°C, 1000 hrs or equivalent)	MIL-STD-883 Method 1005	77/0	1/18/2002	1/18/2002
Hi Temp Bake (+150°C, 1000 hrs)	MIL-STD-883 Method 1008	77/0	1/18/2002	1/18/2002
Auto Clave (SPP) (168Hrs, @ 2ATM, 121°C)	EIA/JESD22-A102	45/0	1/18/2002	1/18/2002
Package Moisture Characterization	JEDEC J-STD-20	22/0	1/18/2002	1/18/2002
Internal Visual Inspection	MIL-STD-883 Method 2010	5/0	1/18/2002	1/18/2002
External Visual Inspection	MIL-STD-883 Method 2009	25/0	1/18/2002	1/18/2002
S.A.T.	JEDEC J-STD-035	10/0	1/18/2002	1/18/2002
X-ray Examination	Per IDT specification	45/0	1/18/2002	1/18/2002
Bond Pull Test	MIL-STD-883 Method 2011	5/0	1/18/2002	1/18/2002
Solderability Test	MIL-STD-883 Method 2003	5/0	1/18/2002	1/18/2002
Bake & Ball Shear Test	EIA/JESD22-B116	5/0	1/18/2002	1/18/2002
Physical Dimension	MIL-STD-883 Method 2016	5/0	1/18/2002	1/18/2002
Lead Integrity Test	MIL-STD-883 Method 2004	3/0	1/18/2002	1/18/2002
Resistance to Solvents	MIL-STD-883 Method 2015	3/0	1/18/2002	1/18/2002

SUMITOMO BAKELITE

SUMIKON[®]

EME-7351LP

BI-PHENYL RESIN
JEDEC LEVEL 1
LOW CTE
LONG SPIRAL FLOW

EME-7351LP

TYPICAL PROPERTIES:

<u>ITEM</u>	<u>TEST METHOD</u>	<u>UNIT</u>	<u>VALUES</u>
SPIRAL FLOW	SB-U-03-003	cm	100
GEL TIME (at 175°C)	SB-U-03-005	sec	25
THERMAL EXPANSION α_1	SB-U-02-002	X 10 ⁻⁵ 1/°C	1.0
THERMAL EXPANSION α_2	SB-U-02-002	X 10 ⁻⁵ 1/°C	4.2
T _g	SB-U-02-002	°C	135
THERMAL CONDUCTIVITY	SB-U-02-004	W/m •°C	75 x 10 ⁻²
FLEXURAL STRENGTH	SB-U-01-001	N/ mm ²	
(at 25°C)			200
(at 240°C)			22
FLEXURAL MODULUS	SB-U-01-002	X 10 ² N/mm ²	
(at 25°C)			230
(at 240°C)			7.5
SPECIFIC GRAVITY	SB-U-03-018	-----	1.97
VOLUME RESISTIVITY	SB-U-00-004	Ω - cm	1 x 10 ¹³
(at 150°C)			
UL FLAME CLASS	SB-U-03-003	UL-94	V-0
WATER ABSORPTION	SB-U-03-002	% weight gain	0.17
(boiling, 24 h)			
EXTRACTED Na ⁺	SB-U-04-043	ppm	1
EXTRACTED Cl ⁻	SB-U-04-043	ppm	10

TYPICAL, NOT GUARANTEED PROPERTIES

MOLDING AND POST MOLD CURE CONDITIONS:

	<u>STANDARD</u>	<u>RANGE</u>
TRANSFER PRESSURE	85 x 10 ⁶ Pa	70-120 x 10 ⁶ Pa
MOLD TEMPERATURE	175°C	165-180°C
CURE TIME (C or A)#	A/70 sec	60-120 sec
POST-MOLD CURE TEMP	175°C	170-180°C
POST-MOLD CURE TIME	6 h	4-10h

#Conventional or Auto

rev. Nov.'00

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SUMITOMO BAKELITE

SUMIKON[®]

EME-S351LP

BI-PHENYL RESIN
JEDEC LEVEL 1
LOW CTE
LOW ALPHA RAY

EME-S351LP

TYPICAL PROPERTIES:

<u>ITEM</u>	<u>TEST METHOD</u>	<u>UNIT</u>	<u>VALUES</u>
SPIRAL FLOW	SB-U-03-003	cm	100
GEL TIME (at 175°C)	SB-U-03-005	sec	25
THERMAL EXPANSION α_1	SB-U-02-002	$X 10^{-5} 1/^\circ C$	1.0
THERMAL EXPANSION α_2	SB-U-02-002	$X 10^{-5} 1/^\circ C$	4.2
T _g	SB-U-02-002	°C	135
THERMAL CONDUCTIVITY	SB-U-02-004	W/m •°C	75×10^{-2}
FLEXURAL STRENGTH	SB-U-01-001	N/mm ²	
(at 25°C)			200
(at 240°C)			22
FLEXURAL MODULUS	SB-U-01-002	$X 10^2 N/mm^2$	
(at 25°C)			230
(at 240°C)			7.5
SPECIFIC GRAVITY	SB-U-03-018	-----	1.97
VOLUME RESISTIVITY	SB-U-00-004	$\Omega - cm$	1×10^{13}
(at 150°C)			
UL FLAME CLASS	SB-U-03-003	UL-94	V-0
WATER ABSORPTION	SB-U-03-002	% weight gain	0.17
(boiling, 24 h)			
EXTRACTED Na ⁺	SB-U-04-043	ppm	1
EXTRACTED Cl ⁻	SB-U-04-043	ppm	10

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TRANSFER PRESSURE	$85 \times 10^6 Pa$	$70-120 \times 10^6 Pa$
MOLD TEMPERATURE	175°C	165-180°C
CURE TIME (C or A)#	A/70 sec	60-120 sec
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