PRODUCT CHANGE NOTICE

Alternate Manufacturing Site for Assembly of the Listed Intersil QSOP and SC-70 Packaged Products

Refer to:
PCN12091

Date: December 4, 2012

intersil | SIMPLY SMARTER™

December 4, 2012

To: Our Valued Intersil Customer

Subject: **Alternate Manufacturing Site for Assembly of the Listed Intersil QSOP and SC-70 Packaged Products –** *Carsem, Ipoh Malaysia (CAM)*

This notice is to inform you that Intersil will begin using the Carsem M-site (CAM) facility in Ipoh Malaysia as an alternate site for assembly of the listed QSOP (Quarter Small Outline Package) and SC-70 (Small Outline Transistor) packaged products. This action will expand current capabilities and capacities to optimize Intersil's ability to meet customer's delivery requirements. The product and site-specific qualification activities are in progress and expected to complete during Q1 CY2013.

The Carsem (CAM) facility is ISO 9001:2008, TS 16949:2009, and ISO 14001:2004 certified. The CAM facility is qualified as a supplier to Intersil for performing assembly of packaged products, including the QSOP and SC-70 package styles. There will be no change in the die attach, bond wire (material or diameter), frame material, or moisture sensitivity level (MSL). The 16l QSOP, 24l QSOP, and select 6l SC-70 packaged devices will require minor dimension changes to the package outline drawings (POD). The affected PODs and a summary containing a list of products along with the current and new PODs are included for reference. The material set combinations for assembly and other key items are as follows:

Key Items	Unisem - Current		Carsem M - New (Alternate)	
	QSOP	SC - 70	QSOP	SC - 70
Mold Compound	SG600	SG600	SG600	CEL9220HF13
Die Attach	A8290	84-1LIMSR4 or A8006NS	A8290	84-1LIMSR4 or A8006NS
Bond Wire - Gold (Au)	1.0 or 2.0 mil	1.0 mil	1.0 or 2.0 mil	1.0 mil
Moisture Sensitivity Level	2 or 3	1, 2, or 3	2 or 3	1, 2, or 3
Frame Material	C194	C194	C194	C194
Device Marking - Site Code	B	B	G	G

The assembly qualification plan is designed using JEDEC and other applicable industry standards to confirm there is no impact to form, fit, function, or interchangeability of the product. A summary of the qualification plan is included for reference. The qualification results will be available for review upon completion by request. The remainder of the manufacturing operations (wafer fabrication, package level electrical testing, shipment, etc.) will continue to be processed to previously established conditions and systems.

Product affected by this change is identifiable via Intersil's internal traceability system. In addition, product assembled at CAM may also be identified by the assembly site code (country of assembly) when marked on the devices. The site code for product assembled at CAM with gold bond wire is "G".

Intersil will take all necessary actions to conform to agreed upon customer requirements and to ensure the continued high quality and reliability of Intersil products being supplied. Customers may expect to receive product assembled at either the current or the newly qualified sites beginning *ninety* days from the date of this notification or earlier with approval.

If you have concerns with this change notice, Intersil must hear from you promptly. Please contact the nearest Intersil Sales Office or call the Intersil Corporate line at 1-888-468-3774, in the United States, or 1-321-724-7143 outside of the United States.

Regards,

Jon Brewster

Jon Brewster
Intersil Corporation

PCN12091

CC: J. Touvell D. Decrosta D. Foster S. Nadarajah F. Tsng S. Ang B. Lee N. Anantharajah D. Singh

PCN12091 – Carsem Reliability Qualification Plan

Stress / Conditions	Duration	EL4543IUZ 24l QSOP SG600 A8290 1.0 Au	EL5378IUZ 28l QSOP SG600 A8290 1.0 Au	EL7457CUZ 16l QSOP SG600 A8290 1.0 Au	ISL59837IAZ 16l QSOP SG600 A8290 1.0 Au	EL7562CUZ 16l QSOP SG600 A8290 2.0 Au	EL5167ICZ 5l SC-70 CEL9220HF13 84-1LMISR4 1.0 Au	ISL28113FEZ 5l SC-70 CEL9220HF13 84-1LMISR4 1.0 Au	ISL9003EBZ 5l SC-70 CEL9220HF13 A8290 1.0 Au	ISL90727WIE627Z 6l SC-70 CEL9220HF13 A8006NS 1.0 Au
Biased HAST +130C / 85% RH	96 Hrs	N = 78 Acc = 0	NA	NA	NA	N = 78 Acc = 0	NA	NA	N = 79 Acc = 0	NA
High Temperature Storage T_A = +150C	1000 Hrs	N = 78 Acc = 0	NA	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	NA	N = 180 Acc = 0
Moisture Sensitivity Classification		N = 22 Acc = 0 L2 PBFREE	N = 66 Acc = 0 L3 PBFREE	N = 22 Acc = 0 L2 PBFREE	N = 22 Acc = 0 L2 PBFREE	N = 22 Acc = 0 L2 PBFREE	N = 22 Acc = 0 L2 PBFREE	N = 22 Acc = 0 L1 PBFREE	N = 66 Acc = 0 L2 PBFREE	N = 110 Acc = 0 L1 PBFREE
Unbiased HAST +130C / 85% RH	96 Hrs	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N =78 Acc = 0	N =78 Acc = 0	NA	NA
Temp Cycle +150C / -65C	500 Cy	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	N = 78 Acc = 0	NA	N = 225 Acc = 0
Autoclave / PCT +121C / 100% RH	96 Hrs	NA	NA	NA	NA	NA	NA	NA	NA	N = 225 Acc = 0

Complete - Passed

PCN12091 – Products Affected

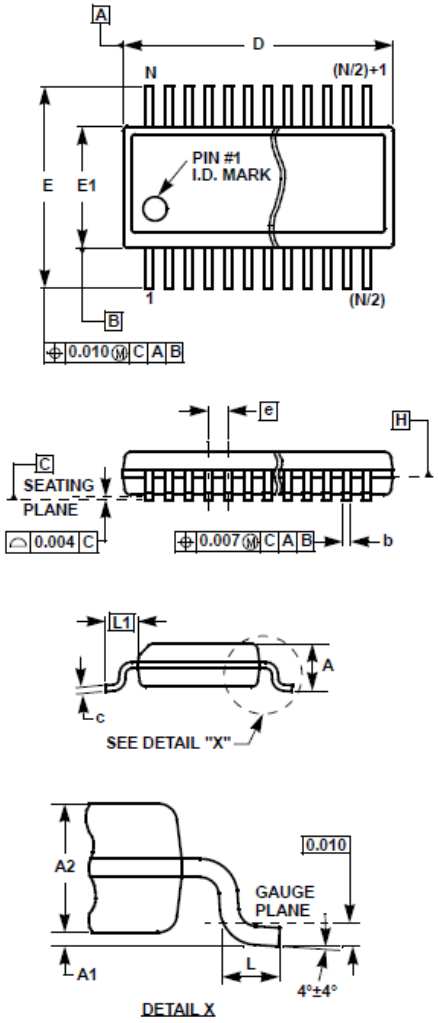
Part Number	Current POD	New POD	Part Number	Current POD	New POD
EL4340IUZ	MDP0040	M24.15	EL5364IUZA-T7S2490S	MDP0040	M16.15A
EL4340IUZ-T13	MDP0040	M24.15	EL5364IUZA-T7S2490S1	MDP0040	M16.15A
EL4340IUZ-T7	MDP0040	M24.15	EL5364IUZ-T13	MDP0040	M16.15A
EL4501IUZ	MDP0040	M24.15	EL5364IUZ-T7	MDP0040	M16.15A
EL4501IUZ-T13	MDP0040	M24.15	EL5364IUZ-T7R5289	MDP0040	M16.15A
EL4501IUZ-T7	MDP0040	M24.15	EL5370IUZ	MDP0040	M24.15
EL4501IUZ-T7A	MDP0040	M24.15	EL5370IUZ-T13	MDP0040	M24.15
EL4511CUZ	MDP0040	M24.15	EL5370IUZ-T7	MDP0040	M24.15
EL4511CUZR5331	MDP0040	M24.15	EL5372IUZ	MDP0040	M24.15
EL4511CUZ-T13	MDP0040	M24.15	EL5372IUZ-T13	MDP0040	M24.15
EL4511CUZ-T7	MDP0040	M24.15	EL5372IUZ-T7	MDP0040	M24.15
EL4511CUZ-T7A	MDP0040	M24.15	EL5373IUZ	MDP0040	M24.15
EL4511CUZ-T7R5331	MDP0040	M24.15	EL5373IUZR5293-T7	MDP0040	M24.15
EL4543IUZ	MDP0040	M24.15	EL5373IUZ-T13	MDP0040	M24.15
EL4543IUZS2714	MDP0040	M24.15	EL5373IUZ-T7	MDP0040	M24.15
EL4543IUZ-T13	MDP0040	M24.15	EL5375IUZ	MDP0040	M24.15
EL4543IUZ-T13S2714	MDP0040	M24.15	EL5375IUZ-T13	MDP0040	M24.15
EL4543IUZ-T7	MDP0040	M24.15	EL5375IUZ-T7	MDP0040	M24.15
EL5163ICZ	P5.049	P5.049	EL6140CUZ-T7	MDP0040	M24.15
EL5163ICZ-T7	P5.049	P5.049	EL6145CUZ	MDP0040	M16.15A
EL5163ICZ-T7A	P5.049	P5.049	EL6145CUZ-T13	MDP0040	M16.15A
EL5167ICZ	P5.049	P5.049	EL6145CUZ-T7	MDP0040	M16.15A
EL5167ICZ-T7	P5.049	P5.049	EL6215CUZ	MDP0040	M24.15
EL5167ICZ-T7A	P5.049	P5.049	EL6215CUZ-T13	MDP0040	M24.15
EL5302IUZ	MDP0040	M16.15A	EL6215CUZ-T7	MDP0040	M24.15
EL5302IUZ-T13	MDP0040	M16.15A	EL6218CUZ	MDP0040	M24.15
EL5302IUZ-T7	MDP0040	M16.15A	EL6218CUZ-T13	MDP0040	M24.15
EL5304IUZ	MDP0040	M16.15A	EL6218CUZ-T7	MDP0040	M24.15
EL5304IUZ-T13	MDP0040	M16.15A	EL6243CUZ-T13	MDP0040	M24.15
EL5304IUZ-T7	MDP0040	M16.15A	EL6245CUZ	MDP0040	M16.15A
EL5306IUZ	MDP0040	M16.15A	EL6245CUZ-T13	MDP0040	M16.15A
EL5306IUZ-T13	MDP0040	M16.15A	EL6245CUZ-T7	MDP0040	M16.15A
EL5306IUZ-T7	MDP0040	M16.15A	EL6273CUZ	MDP0040	M16.15A
EL5306IUZ-T7S2490	MDP0040	M16.15A	EL6273CUZ-T13	MDP0040	M16.15A
EL5308IUZ	MDP0040	M16.15A	EL7457CUZ	MDP0040	M16.15A
EL5308IUZ-T13	MDP0040	M16.15A	EL7457CUZ-T13	MDP0040	M16.15A
EL5308IUZ-T7	MDP0040	M16.15A	EL7457CUZ-T7	MDP0040	M16.15A
EL5308IUZ-T7S2490	MDP0040	M16.15A	EL7457CUZ-T7A	MDP0040	M16.15A
EL5360IUZ	MDP0040	M16.15A	EL7630ICZ	P6.049	P6.049
EL5360IUZ-T13	MDP0040	M16.15A	EL7630ICZ-T7	P6.049	P6.049
EL5360IUZ-T7	MDP0040	M16.15A	EL7630ICZ-T7A	P6.049	P6.049
EL5362IUZ	MDP0040	M16.15A	EL8302IUZ	MDP0040	M16.15A
EL5362IUZ-T13	MDP0040	M16.15A	EL8302IUZ-T13	MDP0040	M16.15A
EL5362IUZ-T7	MDP0040	M16.15A	EL8302IUZ-T7	MDP0040	M16.15A
EL5364IUZ	MDP0040	M16.15A	EL8401IUZ	MDP0040	M16.15A
EL5364IUZA	MDP0040	M16.15A	EL8401IUZ-T13	MDP0040	M16.15A
EL5364IUZA-T13	MDP0040	M16.15A	EL8401IUZ-T7	MDP0040	M16.15A
EL5364IUZA-T7	MDP0040	M16.15A	EL8403IUZ	MDP0040	M16.15A
EL5364IUZA-T7S2490	MDP0040	M16.15A	EL8403IUZ-T13	MDP0040	M16.15A

PCN12091 – Products Affected – cont.

Part Number	Current POD	New POD	Part Number	Current POD	New POD
EL8403IUZ-T7	MDP0040	M16.15A	ISL59440IAZ-T7	MDP0040	M16.15A
EL9110IUZ	MDP0040	M16.15A	ISL59441IAZ	MDP0040	M16.15A
EL9110IUZE9049	MDP0040	M16.15A	ISL59441IAZ-T13	MDP0040	M16.15A
EL9110IUZE9049-T13	MDP0040	M16.15A	ISL59441IAZ-T7	MDP0040	M16.15A
EL9110IUZE9049-T7	MDP0040	M16.15A	ISL59448IAZ	MDP0040	M24.15
EL9110IUZS2714	MDP0040	M16.15A	ISL59448IAZ-T7	MDP0040	M24.15
EL9110IUZ-T13	MDP0040	M16.15A	ISL59448IAZ-T7S2490	MDP0040	M24.15
EL9110IUZ-T7	MDP0040	M16.15A	ISL59830AIAZ	MDP0040	M16.15A
ISL28113FEZ-T7	P5.049	P5.049	ISL59830AIAZ-T7	MDP0040	M16.15A
ISL28113FEZ-T7A	P5.049	P5.049	ISL59830IAZ	MDP0040	M16.15A
ISL28114FEZ-T7	P5.049	P5.049	ISL59830IAZ-T13	MDP0040	M16.15A
ISL28114FEZ-T7A	P5.049	P5.049	ISL59830IAZ-T7	MDP0040	M16.15A
ISL28130CEZ-T7	P5.049	P5.049	ISL59833IAZ	MDP0040	M16.15A
ISL28130CEZ-T7A	P5.049	P5.049	ISL59833IAZ-T7	MDP0040	M16.15A
ISL28130FEZ-T7	P5.049	P5.049	ISL59833IAZ-T7S2705	MDP0040	M16.15A
ISL28130FEZ-T7A	P5.049	P5.049	ISL59837IAZ	MDP0040	M16.15A
ISL28133FEZ-T7	P5.049	P5.049	ISL59837IAZ-T7	MDP0040	M16.15A
ISL28270IAZ	MDP0040	M16.15A	ISL9003AIEBZ-T	P5.049	P5.049
ISL28270IAZ-T13	MDP0040	M16.15A	ISL9003AIECZ-T	P5.049	P5.049
ISL28271FAZ	MDP0040	M16.15A	ISL9003AIEFZ-T	P5.049	P5.049
ISL28271FAZ-T7	MDP0040	M16.15A	ISL9003AIEHZ-T	P5.049	P5.049
ISL28272FAZ	MDP0040	M16.15A	ISL9003AIEJZ-T	P5.049	P5.049
ISL28272FAZ-T7	MDP0040	M16.15A	ISL9003AIEKZ-T	P5.049	P5.049
ISL28273FAZ	MDP0040	M16.15A	ISL9003AIEMZ-T	P5.049	P5.049
ISL28273FAZ-T7	MDP0040	M16.15A	ISL9003AIENZ-T	P5.049	P5.049
ISL28276IAZ	MDP0040	M16.15A	ISL9003AIERZ-T	P5.049	P5.049
ISL28276IAZ-T7	MDP0040	M16.15A	ISL9008AIE5Z-T	P5.049	P5.049
ISL55012IEZ-T7	P6.049B	P6.049	ISL9008AIEBZ-T	P5.049	P5.049
ISL55014IEZ-T7	P6.049B	P6.049	ISL9008AIECZ-T	P5.049	P5.049
ISL55015IEZ-T7	P6.049B	P6.049	ISL9008AIEFZ-T	P5.049	P5.049
ISL59110IEZ	P6.049A	P6.049	ISL9008AIEHZ-T	P5.049	P5.049
ISL59110IEZ-T7	P6.049A	P6.049	ISL9008AIEJZ-T	P5.049	P5.049
ISL59110IEZ-T7R5235	P6.049A	P6.049	ISL9008AIEKZ-T	P5.049	P5.049
ISL59112IEZ	P6.049A	P6.049	ISL9008AIEMZ-T	P5.049	P5.049
ISL59112IEZ-T7	P6.049A	P6.049	ISL9008AIENZ-T	P5.049	P5.049
ISL59440IAZ	MDP0040	M16.15A	ISL9008AIETZ-T	P5.049	P5.049
ISL59440IAZ-T13	MDP0040	M16.15A	ISL9008AIEXZ-T	P5.049	P5.049

PCN12091 – Current POD QSOP 16l and 24l

Quarter Size Outline Plastic Packages Family (QSOP)



MDP0040

QUARTER SIZE OUTLINE PLASTIC PACKAGES FAMILY

SYMBOL	INCHES			TOLERANCE	NOTES
	QSOP16	QSOP24	QSOP28		
A	0.068	0.068	0.068	Max.	-
A1	0.006	0.006	0.006	±0.002	-
A2	0.056	0.056	0.056	±0.004	-
b	0.010	0.010	0.010	±0.002	-
c	0.008	0.008	0.008	±0.001	-
D	0.193	0.341	0.390	±0.004	1, 3
E	0.236	0.236	0.236	±0.008	-
E1	0.154	0.154	0.154	±0.004	2, 3
e	0.025	0.025	0.025	Basic	-
L	0.025	0.025	0.025	±0.009	-
L1	0.041	0.041	0.041	Basic	-
N	16	24	28	Reference	-

Rev. F 2/07

NOTES:

1. Plastic or metal protrusions of 0.006" maximum per side are not included.
2. Plastic interlead protrusions of 0.010" maximum per side are not included.
3. Dimensions "D" and "E1" are measured at Datum Plane "H".
4. Dimensioning and tolerancing per ASME Y14.5M-1994.

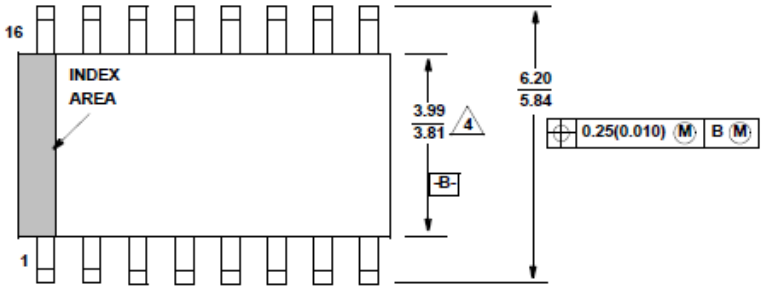
PCN12091 – New POD QSOP 16l

M16.15A

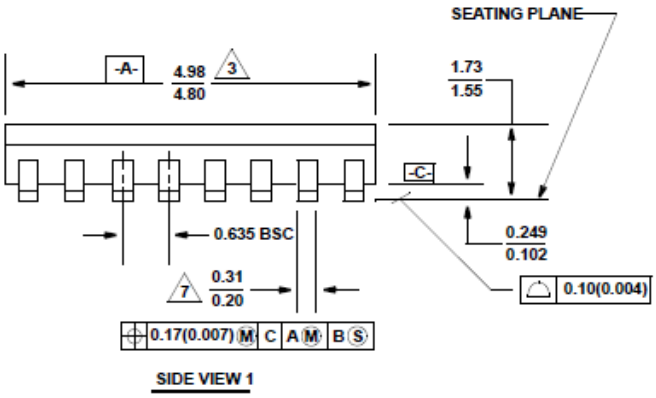
16 LEAD SHRINK SMALL OUTLINE PLASTIC PACKAGE (QSOP/SSOP)

0.150" WIDE BODY

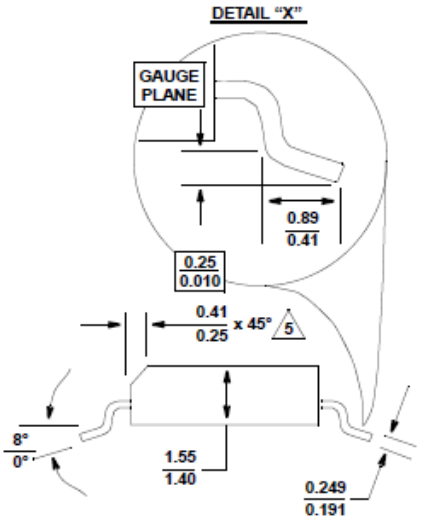
Rev 3, 8/12



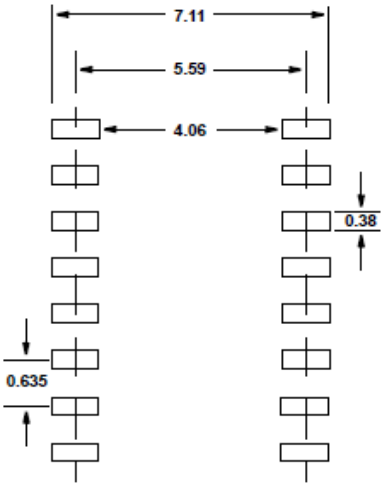
TOP VIEW



SIDE VIEW 1



SIDE VIEW 2



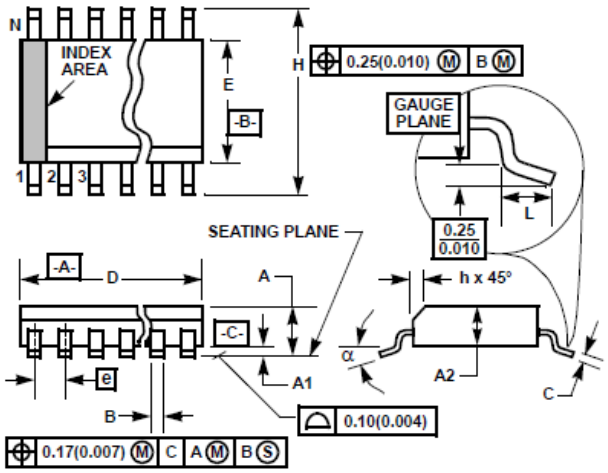
TYPICAL RECOMMENDED LAND PATTERN

NOTES:

1. Symbols are defined in the "MO Series Symbol List" in Section 2.2 of Publication Number 95.
2. Dimensioning and tolerancing per ANSI Y14.5M-1994.
3. Package length does not include mold flash, protrusions or gate burrs. Mold flash, protrusion and gate burrs shall not exceed 0.15mm (0.006 inch) per side.
4. Package width does not include interlead flash or protrusions. Interlead flash and protrusions shall not exceed 0.25mm (0.010 inch) per side.
5. The chamfer on the body is optional. If it is not present, a visual index feature must be located within the crosshatched area.
6. Terminal numbers are shown for reference only.
7. Lead width does not include dambar protrusion. Allowable dambar protrusion shall be 0.10mm (0.004 inch) total in excess of "B" dimension at maximum material condition.
8. Controlling dimension: MILLIMETER.

PCN12091 – New POD QSOP 24l

Shrink Small Outline Plastic Packages (SSOP)
Quarter Size Outline Plastic Packages (QSOP)



NOTES:

1. Symbols are defined in the "MO Series Symbol List" in Section 2.2 of Publication Number 95.
2. Dimensioning and tolerancing per ANSI Y14.5M-1982.
3. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion and gate burrs shall not exceed 0.15mm (0.006 inch) per side.
4. Dimension "E" does not include interlead flash or protrusions. Interlead flash and protrusions shall not exceed 0.25mm (0.010 inch) per side.
5. The chamfer on the body is optional. If it is not present, a visual index feature must be located within the crosshatched area.
6. "L" is the length of terminal for soldering to a substrate.
7. "N" is the number of terminal positions.
8. Terminal numbers are shown for reference only.
9. Dimension "B" does not include dambar protrusion. Allowable dambar protrusion shall be 0.10mm (0.004 inch) total in excess of "B" dimension at maximum material condition.
10. Controlling dimension: INCHES. Converted millimeter dimensions are not necessarily exact.

M24.15

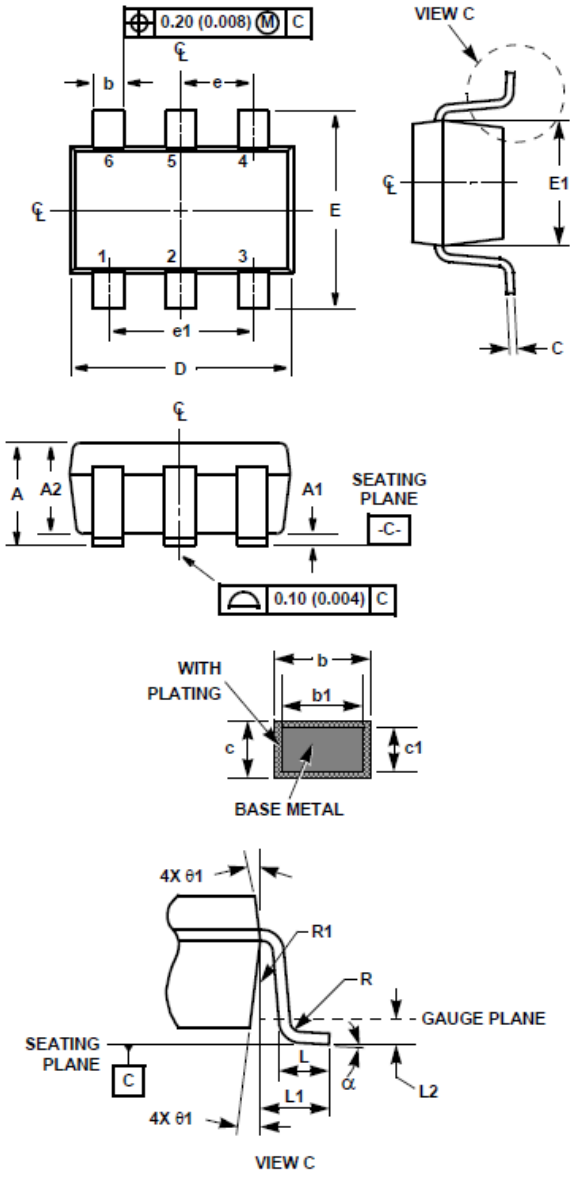
24 LEAD SHRINK SMALL OUTLINE PLASTIC PACKAGE (0.150" WIDE BODY)

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	-
A1	0.004	0.010	0.10	0.25	-
A2	-	0.061	-	1.54	-
B	0.008	0.012	0.20	0.30	9
C	0.007	0.010	0.18	0.25	-
D	0.337	0.344	8.55	8.74	3
E	0.150	0.157	3.81	3.98	4
e	0.025 BSC		0.635 BSC		-
H	0.228	0.244	5.80	6.19	-
h	0.0099	0.0196	0.26	0.49	5
L	0.016	0.050	0.41	1.27	6
N	24		24		7
α	0°	8°	0°	8°	-

Rev. 2 6/04

PCN12091 – Current POD SC-70 6l

Small Outline Transistor Plastic Packages (SC70-6)



P6.049A

6 LEAD SMALL OUTLINE TRANSISTOR PLASTIC PACKAGE

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.031	0.039	0.80	1.00	-
A1	0.001	0.004	0.025	0.10	-
A2	0.034	0.036	0.85	0.90	-
b	0.006	0.012	0.15	0.30	-
b1	0.006	0.010	0.15	0.25	-
c	0.004	0.008	0.10	0.20	6
c1	0.004	0.006	0.10	0.15	6
D	0.073	0.085	1.85	2.15	3
E	0.084 BSC		2.1 BSC		-
E1	0.045	0.053	1.15	1.35	3
e	0.0256 Ref		0.65 Ref		-
e1	0.0512 Ref		1.30 Ref		-
L	0.010	0.018	0.26	0.46	4
L1	0.016 Ref.		0.400 Ref.		-
L2	0.006 BSC		0.15 BSC		-
N	6		6		5
R	0.004	-	0.10	-	-
α	0°	8°	0°	8°	-

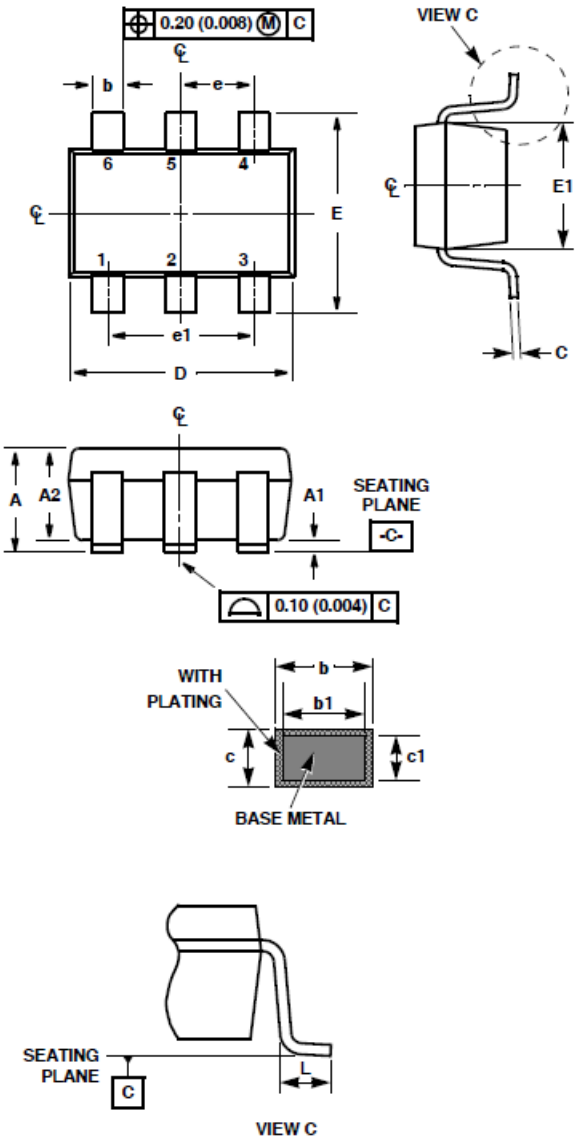
Rev. 0 7/05

NOTES:

1. Dimensioning and tolerance per ASME Y14.5M-1994.
2. Package conforms to EIAJ SC70 and JEDEC MO203AB.
3. Dimensions D and E1 are exclusive of mold flash, protrusions, or gate burrs.
4. Footlength L measured at reference to gauge plane.
5. "N" is the number of terminal positions.
6. These Dimensions apply to the flat section of the lead between 0.08mm and 0.15mm from the lead tip.
7. Controlling dimension: MILLIMETER. Converted inch dimensions are for reference only

PCN12091 – Current POD SC-70 6l

Small Outline Transistor Plastic Packages (SC70-6)



P6.049B

6 LEAD SMALL OUTLINE TRANSISTOR PLASTIC PACKAGE

SYMBOL	MILLIMETERS		NOTES
	MIN	MAX	
A	0.80	1.00	-
A1	0.000	0.09	-
A2	0.80	0.91	-
b	0.15	0.30	-
b1	0.15	0.25	-
c	0.08	0.25	6
c1	0.10	0.15	6
D	1.85	2.25	3
E	2.30 BSC		-
E1	1.15	1.35	3
e	0.65 Ref		-
e1	1.30 Ref		-
L	0.21	0.44	4
N	6		5

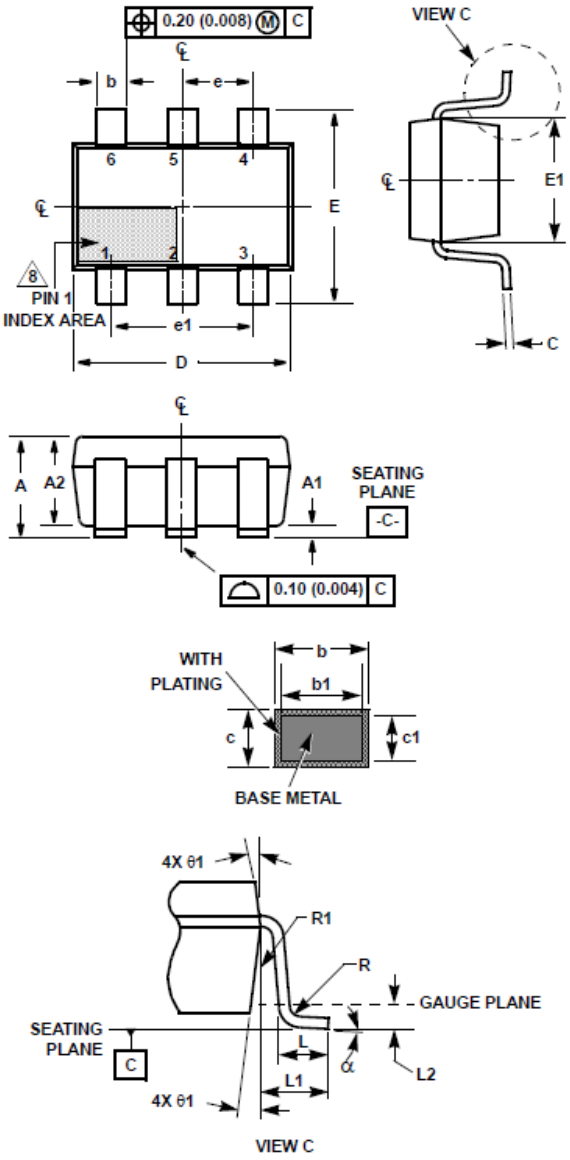
Rev. 0 4/07

NOTES:

1. Dimensioning and tolerance per ASME Y14.5M-1994.
2. Package conforms to EIAJ SC70 and JEDEC MO203AB.
3. Dimensions D and E1 are exclusive of mold flash, protrusions, or gate burrs.
4. Footlength L measured at reference to gauge plane.
5. "N" is the number of terminal positions.
6. These Dimensions apply to the flat section of the lead between 0.08mm and 0.15mm from the lead tip.

PCN12091 – New POD SC-70 6I

Small Outline Transistor Plastic Packages (SC70-6)



P6.049

6 LEAD SMALL OUTLINE TRANSISTOR PLASTIC PACKAGE

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.031	0.043	0.80	1.10	-
A1	0.000	0.004	0.00	0.10	-
A2	0.031	0.039	0.00	1.00	-
b	0.006	0.012	0.15	0.30	-
b1	0.006	0.010	0.15	0.25	
c	0.003	0.009	0.08	0.22	6
c1	0.003	0.009	0.08	0.20	6
D	0.073	0.085	1.85	2.15	3
E	0.071	0.094	1.80	2.40	-
E1	0.045	0.053	1.15	1.35	3
e	0.0256 Ref		0.65 Ref		-
e1	0.0512 Ref		1.30 Ref		-
L	0.010	0.018	0.26	0.46	4
L1	0.017 Ref.		0.420 Ref.		
L2	0.006 BSC		0.15 BSC		
N	6		6		5
R	0.004	-	0.10	-	
R1	0.004	0.010	0.15	0.25	
α	0°	8°	0°	8°	-

Rev. 3 4/12

NOTES:

1. Dimensioning and tolerance per ASME Y14.5M-1994.
2. Package conforms to EIAJ SC70 and JEDEC MO203AB.
3. Dimensions D and E1 are exclusive of mold flash, protrusions, or gate burrs.
4. Footlength L measured at reference to gauge plane.
5. "N" is the number of terminal positions.
6. These Dimensions apply to the flat section of the lead between 0.08mm and 0.15mm from the lead tip.
7. Controlling dimension: MILLIMETER. Converted inch dimensions are for reference only.
8. The configuration of the pin #1 identifier is optional, but must be located within the zone indicated. The pin #1 identifier may be either a mold or mark feature.