



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16678Generic Copy

Issue Date: 15-Jul-2011**TITLE:** IC D2PAK 3 LEAD CHANGE TO SINGLE GAGE THICKNESS HEAT SINK**PROPOSED FIRST SHIP DATE:** 15-Oct-2011**AFFECTED CHANGE CATEGORY(S):** Package Change**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:** Standard and LDO Regulators
Contact your local ON Semiconductor Sales Office or <alan.garlington@onsemi.com>**SAMPLES:** Contact your local ON Semiconductor Sales Office**ADDITIONAL RELIABILITY DATA:** Available
Contact your local ON Semiconductor Sales Office or <Tomas.Vajter@onsemi.com>**NOTIFICATION TYPE:**

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.**DESCRIPTION AND PURPOSE:**

This is the Final PCN to Initial Product Change Notice IPCN#16396 (available at www.onsemi.com) to notify customers the D2PAK 3 lead product lines for IC products running in Seremban, Malaysia have been qualified for a single gage thickness heat sink. The current heat sink has a thickness of .050 inch (1.265 mm). The new heat sink will have a thickness of .020 inch (.508 mm).

Full reliability and characterization has been completed successfully. Thermal analysis comparing differences between the two thickness heat sinks indicate insignificant difference in performance. Report is available upon request.

The new heat sink dimensions are in compliance with the standard JEDEC specification T0-263 issue E. Package designator R-PSFM.

Product samples are available now.


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RELIABILITY DATA SUMMARY:

Two qualification lots from MC7805CD2TR4G, NCV8674DS50G and one qualification lot from NCV317BD2TG are submitted.

Device	MC7805CD2TR4G	Wafer Fab Site	CZ4, Roznov
Package	D2PAK 3 PB FREE	Assembly Site	ONSDN
MSL Level	MSL 1 245C	Final Test Site	ONSDN
Technology	Voltage Regulator		

	Test	Name	Test Conditions	End Point Req's	Test Results (re/ss)			
					Read Point	Lot A	Lot B	Control
1	AC-PC	Autoclave + Preconditioning	121°C/100% RH/15psig	c = 0, 25° C	Initial	0/80	0/80	0/80
					96hrs	0/80	0/80	0/80
2	TC-PC	Temperature Cycling + Preconditioning	Ta= -65/150° C	c = 0, 25° C, 125° C	Initial	0/80	0/80	0/80
					500x	0/80	0/80	0/80
					1000x	0/80	0/80	0/80
3	HAST-PC	Highly Accelerated Stress Test + Preconditioning	Temp = +130°C; RH = 85%, psig ~28 with bias for 96hr (JA110)	c = 0, 25° C, 125° C	Initial	0/80	0/80	0/80
					96hrs	0/80	0/80	0/80
4	HTSL	High Temp Storage Life	Ta=150C for 1008 hrs	c = 0, 25° C, 125° C	Initial	0/80	0/80	0/80
					504hrs	0/80	0/80	0/80
					1008hrs	0/80	0/80	0/80
5	HTOL	High Temp Op Life	JA108, Ta=125C min	c = 0, 25° C, 125° C	Initial	0/80	0/80	0/80
					504hrs	0/80	0/80	0/80
					1008hrs	0/80	0/80	0/80
6	SD	Solderability	Per 12MSB17722C	Min Cpk 1.5		0/15	0/15	0/15
7	SAT	Scanning Acoustic Analysis	Compare for Delamination pre and post preconditioning	Compare to existing data		0/10	0/10	0/10
8	DPA	Destructive Physical Analysis	Following TC 500x	Compare to AEC Criteria		0/2	0/2	0/2
9	DPA	Destructive Physical Analysis	Following HAST	Compare to AEC Criteria		0/2	0/2	0/2


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Device	NCV317BD2TG	Wafer Fab Site	CZ4, Roznov
Package	D2PAK 3 PB FREE	Assembly Site	ONSBN
MSL Level	MSL 1 245C	Final Test Site	ONSBN
Technology	Voltage Regulator		

	Test	Name	Test Conditions	End Point Req's	Test Results (re/ss)		
					Read Point	Lot A	Control
1	AC-PC	Autoclave + Preconditioning	121°C/100% RH/15psig	c = 0, 25° C	Initial	0/80	0/80
					96hrs	0/80	0/80
2	TC-PC	Temperature Cycling + Preconditioning	Ta= -65/150° C	c = 0, 25° C, 150° C	Initial	0/80	0/80
					500x	0/80	0/80
					1000x	0/80	0/80
3	HAST-PC	Highly Accelerated Stress Test + Preconditioning	Temp = +130°C; RH = 85%, psig ~28 with bias for 96hr (JA110)	c = 0, 25° C, 150° C	Initial	0/80	0/80
					96hrs	0/80	0/80
4	HTSL	High Temp Storage Life	Ta=150C for 1008 hrs	c = 0, 25° C, 150° C	Initial	0/80	0/80
					504hrs	0/80	0/80
					1008hrs	0/80	0/80
5	HTOL	High Temp Op Life	JA108, Ta=125C min	c = 0, 25° C, 150° C	Initial	0/80	0/80
					504hrs	0/80	0/80
					1008hrs	0/80	0/80
6	SD	Solderability	Per 12MSB17722C	Min Cpk 1.5		0/15	0/15
7	SAT	Scanning Acoustic Analysis	Compare for Delamination pre and post preconditioning	Compare to existing data		0/10	0/10
8	DPA	Destructive Physical Analysis	Following TC 500x	Compare to AEC Criteria		0/2	0/2
9	DPA	Destructive Physical Analysis	Following HAST	Compare to AEC Criteria		0/2	0/2


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Device	NCV8674DS50G	Wafer Fab Site	CZ4, Roznov
Package	D2PAK 3 PB FREE	Assembly Site	ONSDN
MSL Level	MSL 1 245C	Final Test Site	ONSDN
Technology	LDO Regulator		

	Test	Name	Test Conditions	End Point Req's	Test Results (rej/ss)			
					Read Point	Lot A	Lot B	Control
1	AC-PC	Autoclave + Preconditioning	121°C/100% RH/15psig	c = 0, 25° C	Initial	0/80	0/80	0/80
					96hrs	0/80	0/80	0/80
2	TC-PC	Temperature Cycling + Preconditioning	Ta= -65/150° C	c = 0, 25° C, 125° C	Initial	0/80	0/80	0/80
					500x	0/80	0/80	0/80
					1000x	0/80	0/80	0/80
3	HTSL	High Temp Storage Life	Ta=150C for 1008 hrs	c = 0, 25° C, 125° C	Initial	0/80	0/80	0/80
					504hrs	0/80	0/80	0/80
					1008hrs	0/80	0/80	0/80
4	SD	Solderability	Per 12MSB17722C	Min Cpk 1.5		0/15	0/15	0/15
5	SAT	Scanning Acoustic Analysis	Compare for Delamination pre and post preconditioning	Compare to existing data		0/10	0/10	0/10
6	DPA	Destructive Physical Analysis	Following TC 500x	Compare to AEC Criteria		0/2	0/2	0/2

ELECTRICAL CHARACTERISTIC SUMMARY:

No changes in electrical characteristics. All electrical performance meets the current datasheet specifications.

CHANGED PART IDENTIFICATION:

Devices will be converted to Single Gage heat sink thickness on a part by part basis beginning work week 40 – 2011. Transition will take place over a several week period.

Packaging of tubes and tape & reels in boxes will not be mixed between the two thicknesses of heat sinks.



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List of affected General Parts:

PART

LM2931AD2T-5.0G	MC7812ABD2TR4G	MC7912CD2TG
LM2931AD2T-5R4G	MC7812ACD2TG	MC7912CD2TR4G
LM2931D2T-5.0G	MC7812ACD2TR4G	MC7915ACD2TG
LM2931D2T-5.0R4G	MC7812BD2TG	MC7915BD2TG
LM317BD2TG	MC7812BD2TR4G	MC7915CD2TG
LM317BD2TR4G	MC7812CD2TG	MC7915CD2TR4G
LM317D2TG	MC7812CD2TR4G	MC7924CD2TG
LM317D2TR4	MC7815ABD2TG	NCP565D2T12G
LM317D2TR4G	MC7815ABD2TR4G	NCP565D2T12R4G
LM337BD2TG	MC7815ACD2TG	NCP565D2T33G
LM337BD2TR4G	MC7815BD2TG	NCP565D2T33R4G
LM337D2TG	MC7815BD2TR4G	NCP5667DS50R4G
LM337D2TR4G	MC7815CD2TG	NCV2931D2T5.0R4G
MC7805ABD2TG	MC7815CD2TR4G	NCV317BD2TG
MC7805ABD2TR4G	MC7818CD2TR4G	NCV317BD2TR4G
MC7805ACD2TG	MC7824BD2TG	NCV4274ADS50G
MC7805ACD2TR4G	MC7824BD2TR4G	NCV4274ADS50R4G
MC7805BD2TG	MC7824CD2TG	NCV4274ADS85R4G
MC7805BD2TR4G	MC7824CD2TR4G	NCV4274DS50G
MC7805CD2TG	MC7905ACD2TG	NCV4274DS50R4G
MC7805CD2TR4G	MC7905ACD2TR4G	NCV565D2T12R4G
MC7806BD2TG	MC7905BD2TG	NCV7805ABD2TR4G
MC7806BD2TR4G	MC7905BD2TR4G	NCV7805BD2TG
MC7808ABD2TG	MC7905CD2TG	NCV7805BD2TR4G
MC7808ABD2TR4G	MC7905CD2TR4G	NCV7808BD2TR4
MC7808BD2TG	MC7906CD2TG	NCV7808BD2TR4G
MC7808BD2TR4G	MC7908CD2TG	NCV7812BD2TR4G
MC7808CD2TG	MC7908CD2TR4G	NCV8674DS120G
MC7808CD2TR4G	MC7912ACD2TG	NCV8674DS120R4G
MC7809CD2TG	MC7912ACD2TR4G	NCV8674DS50G
MC7809CD2TR4G	MC7912BD2TG	NCV8674DS50R4G
MC7812ABD2TG	MC7912BD2TR4G	