Product Change Notification / JAON-04FTWF456

Date:

09-Feb-2021

Product Category:

Power MOSFET Drivers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4540 Initial Notice: Qualification of a new lead frame design for selected products available in 8L SOIC package using 8900NC die attach and palladium coated copper with gold flash (CuPdAu) bond wire material assembled at MMT assembly site.

Affected CPNs:

JAON-04FTWF456_Affected_CPN_02092021.pdf
JAON-04FTWF456_Affected_CPN_02092021.csv

Notification Text:

PCN Status: Initial notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the files found in the Affected CPNs section.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change: Qualification of a new lead frame design for selected products available in 8L SOIC package using 8900NC die attach and palladium coated copper with gold flash (CuPdAu) bond wire material assembled at MMT assembly site.

Pre Change:
Using lead frame without lead lock

Post Change:

Using lead frame with lead lock

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Microchip Technology Thailand (Branch) / MMT	Microchip Technology Thailand (Branch) / MMT
Wire material	CuPdAu	CuPdAu
Die attach material	8900NC	8900NC
Molding compound material	G600V	G600V
Lead frame material	CDA194	CDA194
Lead Frame Lead Lock	No	Yes
	See attached pre and post change comparison	

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve productivity by qualifying new lead frame design.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: March 2021

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	February 2021				March 2021				
Workweek	06	07	08	09	10	11	12	13	14
Initial PCN Issue Date		X							
Qual Report Availability							X		
Final PCN Issue Date							X		

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History:February 9, 2021: Issued initial notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_JAON-04FTWF456_Qual_Plan.pdf
PCN_JAON-04FTWF456_Pre and Post Change_Summary.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.

If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

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Affected Catalog Part Numbers (CPN)

TC4426ACOA
TC4426AVOA
TC4426AEOA
TC4426AEOA713
TC4426ACOA713
TC4426AVOA713
TC4427ACOA
TC4427AVOA
TC4427AEOA
TC4427AEOAAAA
TC4427AEOA713
TC4427AEOA713AAA
TC4427ACOA713
TC4427AVOA713
TC4428ACOA
TC4428AVOA
TC4428AEOA
TC4428AEOA713
TC4428ACOA713
TC4428ACOA713-GTD
TC4428AVOA713
TC1426COA
TC426COA
TC4426COA
TC4426VOA
TC426EOA
TC4426EOA
TC426EOA713
TC4426EOA713
TC1426COA713
TC426COA713
TC4426COA713
TC4426COA713CAA
TC4426VOA713
TC1427COA
TC427COA
TC4427COA
TC427VOA
TC4427VOA
TC427EOA
TC4427EOA
TC427EOA713
TC4427EOA713
TC4427COA723
TC1427COA713
TC427COA713

TC4427COA713

TC4427COA713HAZ

TC427VOA713

TC4427VOA713

TC1428COA

TC428COA

TC4428COA

TC4428DCOA

TC428VOA

TC4428VOA

TC428EOA

TC4428EOA

TC428EOA713

TC4428EOA713

TC4428COA723

TC1428COA713

TC428COA713

TC4428COA713

TC428VOA713

TC4428VOA713

CCB 4540
Pre and Post Change Summary
PCN # JAON-04FTWF456

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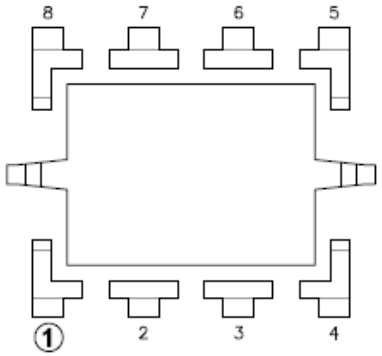
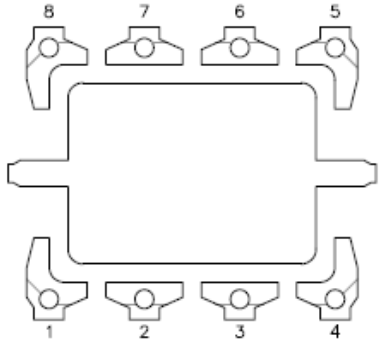
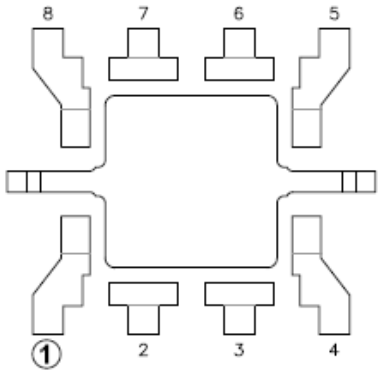
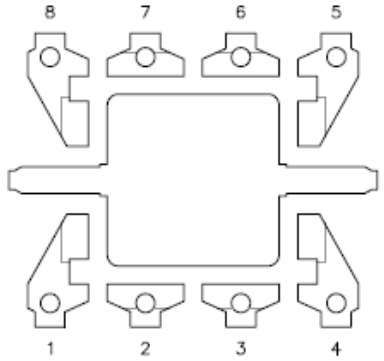
Lead frame Comparison

Pre Change	Post Change
 LF STRIP DENSITY: x140 LF PAD SIZE: 95x130 mils LEAD LOCK: NO	 LF STRIP DENSITY: x320 LF PAD SIZE: 95x130 mils LEAD LOCK: YES
 LF STRIP DENSITY: x140 LF PAD SIZE: 90x90 mils LEAD LOCK: NO	 LF STRIP DENSITY: x320 LF PAD SIZE: 90x90 mils LEAD LOCK: YES

QUALIFICATION PLAN SUMMARY

PCN #: JAON-04FTWF456

Date
January 21, 2021

Qualification of a new lead frame design for selected products available in 8L SOIC package using 8900NC die attach and palladium coated copper with gold flash (CuPdAu) bond wire material assembled at MMT assembly site.

Purpose: Qualification of a new lead frame design for selected products available in 8L SOIC package using 8900NC die attach and palladium coated copper with gold flash (CuPdAu) bond wire material assembled at MMT assembly site.

CCB No.: 4540

Misc.	**Assembly site**	MMT
	BD Number	BDM-002818/A
	MP Code (MPC)	Y2AF2DC2XAAC
	Part Number (CPN)	TC4427AEOA713
	MSL information	MSL-1/260C
	Assembly Shipping Media (T/R, Tube/Tray)	Tube
	Base Quantity Multiple (BQM)	100
	Reliability Site	MTAI
Lead-Frame	**Paddle size**	95x130 mils
	Material	CDA194
	DAP Surface Prep	Bare Cu
	Treatment	BOT
	Process	Etched
	Lead-lock	Yes
	Part Number	10100842
	Lead Plating	Matte Tin
	Strip Size	239.0x70.0mm
	Strip Density	320 pads/strip
Bond Wire	**Material**	CuPdAu
Die Attach	**Part Number**	8900NC
	Conductive	No
MC	**Part Number**	G600V
PKG	**PKG Type**	SOIC
	Pin/Ball Count	8
	PKG width/size	150 mils

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002 ; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5		Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	3	15	0 fails after TC	5	MMT/MTAI	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	3	15		5	MMT/MTAI	30 bonds from a minimum of 5 devices.
Wire Sweep		5	0	3	15	0		MMT	Required for any reduction in wire bond thickness.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	MMT	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	MMT/ MTAI	

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per **Jedec-STD-020E** for package type; Electrical test pre and post stress at +25°C. **MSL1/260C**	231	15	3	738	0	15	MTAI	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp. Extend to 192 hrs post test at 25C	77	5	3	246	0	10	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Unbiased HAST	+130°C/85% RH for 96 hrs. Electrical test pre and post stress at +25°C. Extend to 192 hrs post test at 25C	77	5	3	246	0	10	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress. Extend to 1000 cycle post test at 25C	77	5	3	246	0	15	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.