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PCN # 177
Notification Date: September 30, 2019

Product / Process Change Notice

Parts Affected:
Chip process CP312, NPN power transistors, wafers, and bare die.

Extent of Change:
The CP312 wafer process has been discontinued and replaced with the CP322 wafer process. See figures 1 and 2 for details.

Reason for Change:
The CP312 wafer process has been replaced by the CP322 wafer process in order to enhance the manufacturing process controls and performance. In addition, this change is being made to ensure an undisrupted supply of product, moving forward.

Effect of Change:
The wafer process meets all electrical specifications of the individual devices listed on the following page.

Qualification:

Test	Condition	Failure rate
Resistance to Solder Shock	T =260°C ±5°C Dwell time = 10 sec. **JESD22-B106**	0/77
High Temperature Storage Life/ bake test.	150°C (-0/+10)°C, 1000 hours. **JESD22-A103**	0/77
Temperature Cycling	T= -65°C to +150°C 1000 cycles. Dwell time = 15 min. **JESD22-A104**	0/77
High Temperature Reverse Bias (HTRB)	T=125°C, t=1000 hours Bias conditions per device datasheet **JESD22-A108**	0/77
Highly Accelerated Temperature and Humidity Stress Test (HAST)	T = 130°C, RH = 85%, P = 33.3 psia, and t = 96 hours. Bias conditions per device specification sheet. **JESD22-A110**	0/77
Accelerated Moisture Resistance Unbiased Autoclave	Temperature = 121°C ± 2°C; relative humidity = 100%; vapor pressure = 29.7 psia (15psig). t=96 hours **JESD22-A102**	0/77

Effective Date of Change:
September 30, 2019 - Existing inventory will be shipped until depleted.

Sample Availability:
Please contact your salesperson or manufacturer's representative for samples.

Figure 1: CP312 Chip Geometry (Discontinued)		**Figure 2: CP322 Chip Geometry**	
E B BACKSIDE COLLECTOR R1		E B BACKSIDE COLLECTOR R0	
Wafer Diameter	4 inch	Wafer Diameter	5 inch
Die Size	70 x 70 mils	Die Size	67 x 67 mils
Die Thickness	9.0 mils	Die Thickness	9.0 mils
Bond Pad Size (Base)	11.4 18.1 mils	Bond Pad Size (Base)	11.8 x 17.7 mils
Bond Pad Size (Emitter)	13.8 x 23.6 mils	Bond Pad Size (Emitter)	11.8 x 17.7 mils
Topside Metal:	Al (30,000Å)	Topside Metal:	Al (26,000Å)
Backside Metal:	Ti/Ni/Ag (11,300Å)	Backside Metal:	Ti/Ni/Ag (11,300Å)
Part Numbers Affected:			
CP312-BD437-CT	CP312-CJD200-CT	CP312-CZT3120-CT	
BFX34	BSX63-10	CEN1182	
CZT3120	2N3420	2N3421	
2N4237	2N4238	2N4239	
2N4895	2N5784	2N5785	
2N5786			

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As per JEDEC standard JESD46, Customer Notification of Product/Process Changes by Solid-State Suppliers, a lack of acknowledgement of a PCN within thirty (30) days constitutes acceptance of the change.

The undersigned acknowledges and accepts Central Semiconductor's Product/Process Change Notification (PCN).

Company Name:	
Address:	
Printed Name:	
Title:	
Signature:	
Date:	