

CMZ5913BP THRU CMZ5956BP  
**SURFACE MOUNT SILICON  
 ZENER DIODES**  
 3.0 WATT, 3.3 THRU 200 VOLT  
 ±5% TOLERANCE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMZ5913BP series surface mount silicon Zener diodes are highly reliable components designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications.

**MARKING: SEE MARKING CODE ON ELECTRICAL CHARACTERISTIC TABLE**



SMB CASE

**FEATURES:**

- High reliability
- “C” bend construction provides strain relief when mounted on pc board

**MAXIMUM RATINGS:** (T<sub>A</sub>=25°C)

Power Dissipation (T<sub>L</sub>=75°C)  
 Power Dissipation (Note 1)  
 Operating and Storage Junction Temperature  
 Thermal Resistance  
 Thermal Resistance (Note 1)

**SYMBOL**

P<sub>D</sub> 3.0  
 P<sub>D</sub> 1.0  
 T<sub>J</sub>, T<sub>stg</sub> -65 to +150  
 θ<sub>JL</sub> 25  
 θ<sub>JA</sub> 125

**UNITS**

W  
 W  
 °C  
 °C/W  
 °C/W

Note 1: Mounted on 2 inch square FR-4 PCB with minimum recommended SMB copper pad area.

**ELECTRICAL CHARACTERISTICS:** (T<sub>A</sub>=25°C) V<sub>F</sub>=1.5V MAX @ I<sub>F</sub>=200mA (for all types)

TYPE	ZENER VOLTAGE V <sub>Z</sub> @ I <sub>ZT</sub>			TEST CURRENT I <sub>ZT</sub>	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT (T <sub>L</sub> =75°C) I <sub>ZM</sub>	MARKING CODE
	MIN	NOM	MAX		Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>R</sub> @ V <sub>R</sub>				
	V	V	V		Ω	Ω	μA				
CMZ5913BP*	3.135	3.3	3.465	113.6	10	500	1.0	100	1.0	454	C5913BP
CMZ5914BP*	3.420	3.6	3.780	104.2	9.0	500	1.0	75	1.0	416	C5914BP
CMZ5915BP*	3.705	3.9	4.095	96.1	7.5	500	1.0	25	1.0	384	C5915BP
CMZ5916BP*	4.085	4.3	4.515	87.2	6.0	500	1.0	5.0	1.0	348	C5916BP
CMZ5917BP*	4.465	4.7	4.935	79.8	5.0	500	1.0	5.0	1.5	319	C5917BP
CMZ5918BP*	4.845	5.1	5.355	73.5	4.0	350	1.0	5.0	2.0	294	C5918BP
CMZ5919BP	5.320	5.6	5.880	66.9	2.0	250	1.0	5.0	3.0	267	C5919BP
CMZ5920BP	5.890	6.2	6.510	60.5	2.0	200	1.0	5.0	4.0	241	C5920BP
CMZ5921BP	6.460	6.8	7.140	55.1	2.5	200	1.0	5.0	5.2	221	C5921BP
CMZ5922BP	7.125	7.5	7.875	50.0	3.0	400	0.5	5.0	6.0	200	C5922BP
CMZ5923BP	7.790	8.2	8.610	45.7	3.5	400	0.5	5.0	6.5	183	C5923BP
CMZ5924BP	8.645	9.1	9.555	41.2	4.0	500	0.5	5.0	7.0	165	C5924BP
CMZ5925BP	9.500	10	10.50	37.5	4.5	500	0.25	5.0	8.0	150	C5925BP
CMZ5926BP	10.45	11	11.55	34.1	5.5	550	0.25	1.0	8.4	136	C5926BP
CMZ5927BP	11.40	12	12.60	31.2	6.5	550	0.25	1.0	9.1	125	C5927BP
CMZ5928BP	12.35	13	13.65	28.8	7.0	550	0.25	1.0	9.9	115	C5928BP
CMZ5929BP	14.25	15	15.75	25.0	9.0	600	0.25	1.0	11.4	100	C5929BP

\*Available on special order; minimum quantity may apply; consult factory.

R5 (13-August 2018)

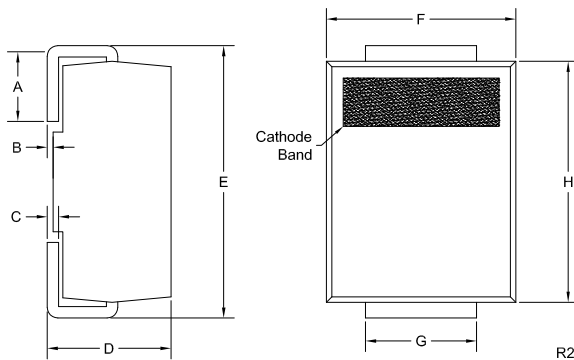
**CMZ5913BP THRU CMZ5956BP**  
**SURFACE MOUNT SILICON**  
**ZENER DIODES**  
**3.0 WATT, 3.3 THRU 200 VOLT**  
**±5% TOLERANCE**



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$ )  $V_F=1.5\text{V MAX @ } I_F=200\text{mA}$  (for all types)

TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT ( $T_L=75^{\circ}\text{C}$ )	MARKING CODE
	MIN	NOM	MAX		$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_R @ V_R$	$I_R @ V_R$		
	V	V	V	mA	$\Omega$	$\Omega$ mA	$\mu\text{A}$	V	mA		
CMZ5930BP	15.20	16	16.80	23.4	10	600	0.25	1.0	12.2	94	C5930BP
CMZ5931BP	17.10	18	18.90	20.8	12	650	0.25	1.0	13.7	83	C5931BP
CMZ5932BP	19.00	20	21.00	18.7	14	650	0.25	1.0	15.2	75	C5932BP
CMZ5933BP	20.90	22	23.10	17.0	17.5	650	0.25	1.0	16.7	68	C5933BP
CMZ5934BP	22.80	24	25.20	15.6	19	700	0.25	1.0	18.2	63	C5934BP
CMZ5935BP	25.65	27	28.35	13.9	23	700	0.25	1.0	20.6	56	C5935BP
CMZ5936BP	28.50	30	31.50	12.5	26	750	0.25	1.0	22.8	50	C5936BP
CMZ5937BP	31.35	33	34.65	11.4	33	800	0.25	1.0	25.1	45	C5937BP
CMZ5938BP	34.20	36	37.80	10.4	38	850	0.25	1.0	27.4	42	C5938BP
CMZ5939BP	37.05	39	40.95	9.6	45	900	0.25	1.0	29.7	38	C5939BP
CMZ5940BP	40.85	43	45.15	8.7	53	950	0.25	1.0	32.7	35	C5940BP
CMZ5941BP	44.65	47	49.35	8.0	67	1000	0.25	1.0	35.8	32	C5941BP
CMZ5942BP	48.45	51	53.55	7.3	70	1100	0.25	1.0	38.8	29	C5942BP
CMZ5943BP	53.20	56	58.80	6.7	86	1300	0.25	1.0	42.6	27	C5943BP
CMZ5944BP	58.90	62	65.10	6.0	100	1500	0.25	1.0	47.1	24	C5944BP
CMZ5945BP	64.60	68	71.40	5.5	120	1700	0.25	1.0	51.7	22	C5945BP
CMZ5946BP	71.25	75	78.75	5.0	140	2000	0.25	1.0	56.0	20	C5946BP
CMZ5947BP	77.90	82	86.10	4.6	160	2500	0.25	1.0	62.2	18	C5947BP
CMZ5948BP	86.45	91	95.55	4.1	200	3000	0.25	1.0	69.2	16	C5948BP
CMZ5949BP	95.00	100	105.0	3.7	250	3100	0.25	1.0	76.0	15	C5949BP
CMZ5950BP	104.5	110	115.5	3.4	300	4000	0.25	1.0	83.6	13	C5950BP
CMZ5951BP	114.0	120	126.0	3.1	360	4500	0.25	1.0	91.2	12	C5951BP
CMZ5952BP	123.5	130	136.5	2.9	450	5000	0.25	1.0	98.8	11	C5952BP
CMZ5953BP	142.5	150	157.5	2.5	600	6000	0.25	1.0	114.0	10	C5953BP
CMZ5954BP	152.0	160	168.0	2.3	700	6500	0.25	1.0	121.6	9.0	C5954BP
CMZ5955BP	171.0	180	189.0	2.1	900	7000	0.25	1.0	136.8	8.0	C5955BP
CMZ5956BP	190.0	200	210.0	1.9	1200	8000	0.25	1.0	152.0	7.0	C5956BP

**SMB CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.000	0.008	0.00	0.20
C	0.006	0.012	0.15	0.30
D	0.086	0.096	2.18	2.44
E	0.200	0.220	5.08	5.59
F	0.130	0.150	3.30	3.81
G	0.077	0.083	1.96	2.11
H	0.160	0.191	4.06	4.85

SMB (REV: R2)

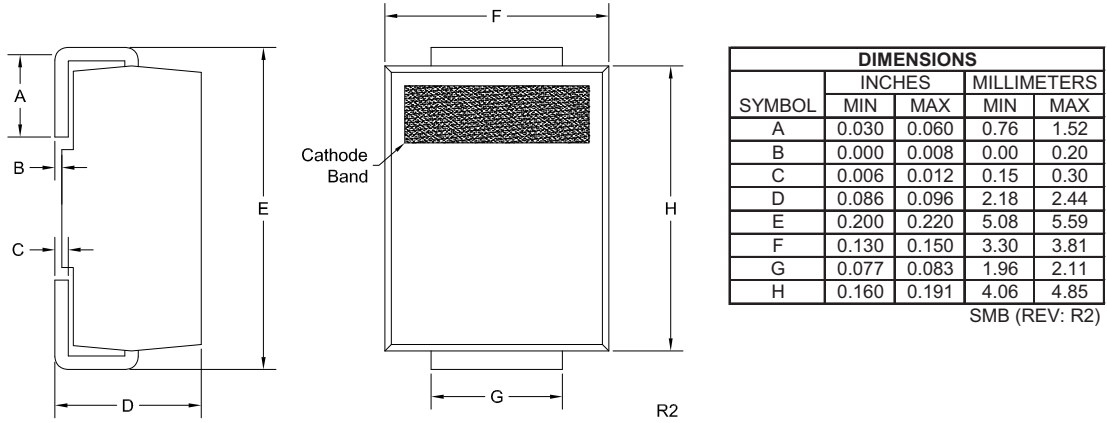
R5 (13-August 2018)

# Package Details

## SMB Case



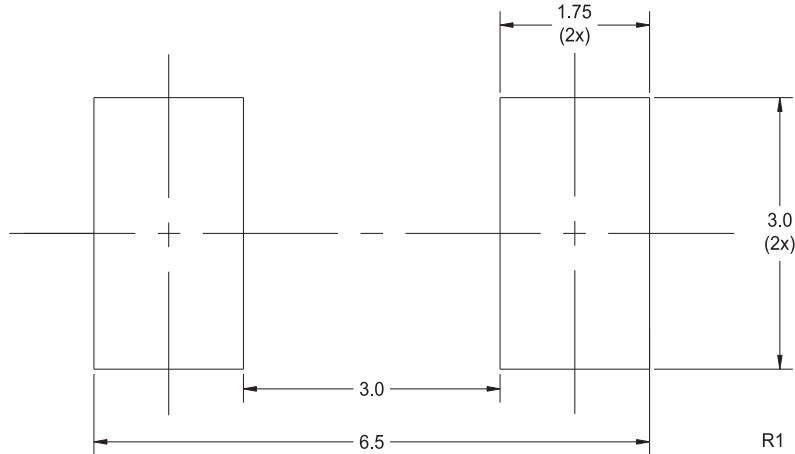
### Mechanical Drawing



**Lead Code:**  
Reference individual device datasheet.

**Part Marking:** 3-6 Character Alpha/Numeric Code

### Mounting Pad Geometry (Dimensions in mm)



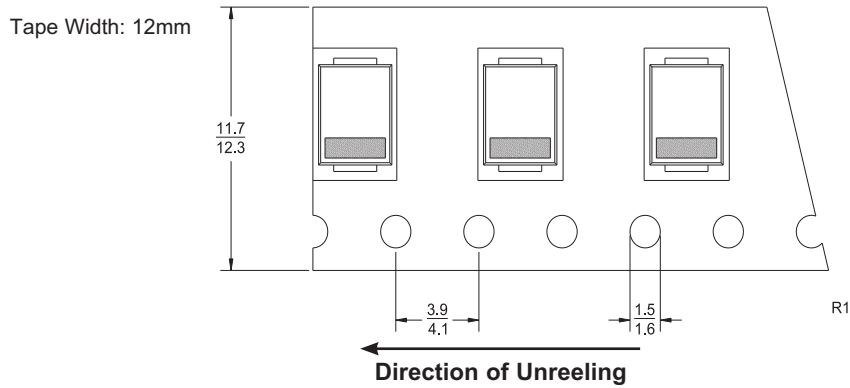
R3 (4-September 2018)

# Package Details

## SMB Case



### Tape Dimensions and Orientation (Dimensions in mm)



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

### Packaging Base

13" Reel = 3,000 pcs.

### Reel Labeling Information

Each reel is labeled with the following information:

Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code and Ship Date.

### Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13"	5	15,000	15x4x15	38x10x38	8	4
	14	42,000	15x15x9	38x38x23	21	10
	26	78,000	15x15x18	38x38x46	39	18

### Ordering Information

- For devices taped and reeled on 13" reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

R3 (4-September 2018)

# Material Composition Specification

## SMB Case



Device average mass ..... 92 mg  
 Fluctuation margin ..... +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.83%	0.76	Si	7440-21-3	0.83%	0.76	8,262
leadframe	copper	37%	34.04	Cu	7440-50-8	37%	34.04	370,032
die attach	high temperature solder paste	2.45%	2.25	Pb	7439-92-1	2.26%	2.081	22,622
				Sn	7440-31-5	0.12%	0.113	1,228
				Ag	7440-22-4	0.06%	0.056	609
encapsulation*	EMC	58.96%	54.23	silica	7631-86-9	40.09%	36.88	400,904
				epoxy resin	29690-82-2	11.79%	10.85	117,945
				phenol resin	9003-35-4	5.89%	5.42	58,918
				Sb <sub>2</sub> O <sub>3</sub>	1309-64-4	0.59%	0.542	5,892
				Br	7726-95-6	0.59%	0.542	5,892
	EMC GREEN	58.96%	54.23	silica (fused)	60676-86-0	45.4%	41.76	453,953
				epoxy resin	29690-82-2	5.9%	5.423	58,951
				phenol resin	9003-35-4	5.72%	5.26	57,179
				carbon black	1333-86-4	0.18%	0.163	1,772
				metal hydroxide	1309-42-8	1.77%	1.628	17,697
plating**	tin/lead process	0.77%	0.71	Sn	7440-31-5	0.62%	0.566	6,153
				Pb	7439-92-1	0.15%	0.142	1,544
	matte tin	0.77%	0.71	Sn	7440-31-5	0.77%	0.708	7,696

\*EMC GREEN molding compound is Halogen-Free.

\*\*For Lead Free plating, add suffix "PB FREE" to part number.

For Tin/Lead plating, add suffix "TIN/LEAD" to part number.

No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

### Disclaimer

The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

R5 (16-July 2018)

# Material Composition Specification

## SMB Case



Device average mass ..... 92 mg  
 Fluctuation margin ..... +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.83%	0.76	Si	7440-21-3	0.83%	0.76	8,262
leadframe	copper	37%	34.04	Cu	7440-50-8	37%	34.04	370,032
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				epoxy resin	29690-82-2	11.79%	10.85	117,945
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	EMC GREEN	58.96%	54.23	silica (fused)	60676-86-0	45.4%	41.76	453,953
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				phenol resin	9003-35-4	5.72%	5.26	57,179
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				Pb	7439-92-1	0.15%	0.142	1,544
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R5 (16-July 2018)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

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For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)

# Product End of Life Notification

<b>PDN ID:</b>	PDN01081
<b>Notification Date:</b>	4/30/18
<b>Last Buy Date:</b>	10/30/18
<b>Last Shipment Date</b>	4/30/19

Summary: All low voltage Zener diodes, less than 5.6V, in the SMA, SMB and SMC case types are discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

<u>Central Part Number</u>	<u>Replacement</u>
CMZ5334B BK	N/A
CMZ5334B TR13	N/A
CMZ5335B BK	N/A
CMZ5335B TR13	N/A
CMZ5336B BK	N/A
CMZ5336B TR13	N/A
CMZ5337B BK	N/A
CMZ5337B TR13	N/A
CMZ5338B BK	N/A
CMZ5338B TR13	N/A
CMZ5913B BK	N/A
CMZ5913B TR13	N/A
CMZ5914B BK	N/A
CMZ5914B TR13	N/A
CMZ5914BP BK	N/A
CMZ5914BP TR13	N/A
CMZ5915B BK	N/A
CMZ5915B TR13	N/A
CMZ5915BP TR13	N/A
CMZ5916B BK	N/A
CMZ5916B TR13	N/A
CMZ5916BP TR13	N/A
CMZ5917B BK	N/A
CMZ5917B TR13	N/A
CMZ5917BP BK	N/A
CMZ5917BP TR13	N/A
CMZ5918B BK	N/A
CMZ5918B TR13	N/A
CMZ5918BP BK	N/A
CMZ5918BP TR13	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to [engineering@centralsemi.com](mailto:engineering@centralsemi.com).

**DISCLAIMER:** This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.



# Product End of Life Notification

<b>PDN ID:</b>	PDN01283
<b>Notification Date:</b>	2/02/26
<b>Last Buy Date:</b>	Stock Only
<b>Last Shipment Date</b>	Stock Only

<https://www.centrasemi.com>

Please be advised that Central Semiconductor must immediately discontinue the product(s) listed in the attached PDN notice. Orders can only be accepted for products with available inventory on hand.

You may have purchased one or more of the products listed. Please do not hesitate to contact your local Central Semiconductor sales representative with any questions or needs you may have. Central regrets any inconvenience this may cause.

Sincerely,

Central Semiconductor, LLC

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https://www.centrasemi.com

# Product End of Life Notification

PDN ID:	PDN01283
Notification Date:	2/02/26
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Summary: The following Zener diodes in the SMA and SMB cases are discontinued and now classified as End of Life (EOL).

Although Central Semiconductor makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Portfolio Management. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

**\* All Plating types (PBFREE, TIN/LEAD) for each item listed are included in this notice.**

Central Part Number	Suggested Replacement
CMZ5946B BK	N/A
CMZ5946B TR13	N/A
CMZ5946BP TR13	N/A
CMZ5947B BK	N/A
CMZ5947B TR13	N/A
CMZ5947BP TR13	N/A
CMZ5948B BK	N/A
CMZ5948B TR13	N/A
CMZ5948BP TR13	N/A
CMZ5949B BK	N/A
CMZ5949B TR13	N/A
CMZ5949BP TR13	N/A
CMZ5950B BK	N/A
CMZ5950B TR13	N/A
CMZ5950BP TR13	N/A
CMZ5951B BK	N/A
CMZ5951B TR13	N/A
CMZ5951BP TR13	N/A
CMZ5952B BK	N/A
CMZ5952B TR13	N/A
CMZ5952BP TR13	N/A
CMZ5953B BK	N/A
CMZ5953B TR13	N/A
CMZ5953BP TR13	N/A
CMZ5954B BK	N/A
CMZ5954B TR13	N/A
CMZ5954BP BK	N/A
CMZ5954BP TR13	N/A
CMZ5955B BK	N/A
CMZ5955B TR13	N/A
CMZ5955BP BK	N/A
CMZ5955BP TR13	N/A
CMZ5956B BK	N/A
CMZ5956B TR13	N/A
CMZ5956BP TR13	N/A

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<http://www.centrasemi.com> or contact your local sales representative. This End of Life (EOL) notification is in accordance with the JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.