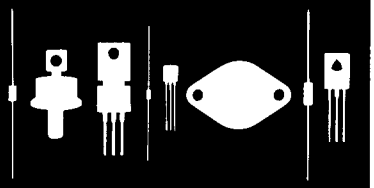
Central
Semiconductor Corp.
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Central™ Semiconductor Corp.
145 Adams Avenue
Hauppauge, New York 11788



2N2903

2N2903A

NPN SILICON DUAL TRANSISTOR

JEDEC TO-78 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N2903, A types are silicon NPN dual transistors manufactured by the epitaxial planar process utilizing 2 individual chips mounted in a hermetically sealed metal case designed for differential amplifier applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

	SYMBOL		UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	50	mA
Power Dissipation (One Die)	P_D	200	mW
Power Dissipation (Both Dice)	P_D	300	mW
Power Dissipation (One Die, T_C=25°C)	P_D	600	mW
Power Dissipation (Both Dice, T_C=25°C)	P_D	1200	mW
Operating and Storage Junction Temperature	T_J, T_{STG}	-65 TO +200	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_{CBO}	V_{CB}=50V		0.01	μA
I_{CBO}	V_{CB}=50V, T_A=150°C		15	μA
I_{EBO}	V_{BE}=5.0V		0.01	μA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	30		V
BV_{EBO}	I_E=0.1μA	7.0		V
$V_{CE(SAT)}$	I_C=5.0mA, I_B=0.5mA		1.0	V
$V_{BE(SAT)}$	I_C=5.0mA, I_B=0.5mA		0.9	V
h_{FE}	V_{CE}=5.0V, I_C=10μA	60	-	
h_{FE}	V_{CE}=5.0V, I_C=10μA, T_A=-55°C	25	-	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	125	625	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA, T_A=-55°C	60	-	
f_T	V_{CE}=10V, I_C=5.0mA, f=30MHz	60		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=140kHz		8.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=140kHz		10	pF
NF	V_{CE}=5.0V, I_C=10μA, R_S=10kΩ, f=1.0kHz		7.0	dB
h_{FE1}/h_{FE2}	V_{CE}=5.0V, I_C=1.0mA (2N2903)	0.80	1.0	
h_{FE1}/h_{FE2}	V_{CE}=5.0V, I_C=1.0mA (2N2903A)	0.90	1.0	
$\lvert V_{BE1}-V_{BE2}\rvert$	V_{CE}=5.0V, I_C=10μA (2N2903)	-	10	mV
$\lvert V_{BE1}-V_{BE2}\rvert$	V_{CE}=5.0V, I_C=10μA (2N2903A)	-	5.0	mV
$\frac{\Delta(V_{BE1}-V_{BE2})}{\Delta T_A}$	V_{CE}=5.0V, I_C=10μA, T_A=-55 TO +125°C (2N2903)		20	μV/°C
$\frac{\Delta(V_{BE1}-V_{BE2})}{\Delta T_A}$	V_{CE}=5.0V, I_C=10μA, T_A=-55 TO +125°C (2N2903A)		10	μV/°C

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

OUTSTANDING SUPPORT AND SUPERIOR SERVICES

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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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).

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.centralsemi.com

Worldwide Field Representatives:
www.centralsemi.com/wwreps

Worldwide Distributors:
www.centralsemi.com/wwdistributors

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.centralsemi.com/terms

http://www.centralsemi.com

Product End of Life Notification

PDN ID:	PDN01061
Notification Date:	1/17/17
Last Buy Date:	7/17/17
Last Shipment Date	1/17/18

Summary:All transistors manufactured in the TO-78 package 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 various 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 Product Management Process. Any replacement product will be noted below. The effective date for placing the last purchase order will be six(6) months from the date of this notice and twelve(12) months from the notice date for final shipments; this may be extended if inventory is available.

Central Part Number	Replacement
CEN876	N/A
CEN894	N/A
CEN895	N/A
CEN896	N/A
CEN911	N/A
CEN947	N/A
CEN955 W/DATA	N/A
MD2219A	N/A
MD2369	N/A
MD2369A	N/A
MD2369B	N/A
MD2905	N/A
MD2905A	N/A
MD5179	N/A
MD7000	N/A
MD7001	N/A
MD7003	N/A
MD7003A	N/A
MD7003B	N/A
MD8002	N/A
MD8003	N/A
MD918	N/A
MD918A	N/A
MD918B	N/A
MD984	N/A
2N2060	N/A
2N2060A	N/A
2N2060M	N/A
2N2223	N/A
2N2223A	N/A
2N2453	N/A
2N2453A	N/A
2N2480	N/A
2N2480A	N/A
2N2639	N/A
2N2640	N/A
2N2641	N/A
2N2642	N/A

*** CONTINUED ***

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.

Central Semiconductor Corp.

http://www.centralsemi.com

Product End of Life Notification

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*** CONTINUED FROM PRIOR PAGE ***

Central Part Number	Replacement
2N2643	N/A
2N2644	N/A
2N2652	N/A
2N2652A	N/A
2N2720	N/A
2N2721	N/A
2N2722	N/A
2N2903	N/A
2N2903A	N/A
2N2913	N/A
2N2914	N/A
2N2915	N/A
2N2915A	N/A
2N2916	N/A
2N2916A	N/A
2N2917	N/A
2N2918	N/A
2N2919	N/A
2N2919A	N/A
2N2920	N/A
2N2920A	N/A
2N3726	N/A
2N3727	N/A
2N3806	N/A
2N3807	N/A
2N3808	N/A
2N3809	N/A
2N3810	N/A
2N3810A	N/A
2N3811	N/A
2N3811A	N/A
2N4015	N/A
2N4016	N/A
2N4854	N/A
2N4937	N/A
2N4938	N/A
2N4939	N/A
2N5793	N/A
2N5794	N/A
2N5796	N/A
2N5912	N/A
2N6502	N/A

*** CONTINUED ***

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*** CONTINUED FROM PRIOR PAGE ***

Central Part Number **Replacement**

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.

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