

CentralTM Semiconductor Corp.

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

Manufacturers of World Class Discrete Semiconductors

TIP29
TIP29A
TIP29B
TIP29C

SILICON NPN POWER TRANSISTOR
1 AMP, 30 WATTS

JEDEC TO-220 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP29 Series is a NPN Epitaxial-Base Silicon Power Transistor designed for power amplifier and high-speed switching applications.

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

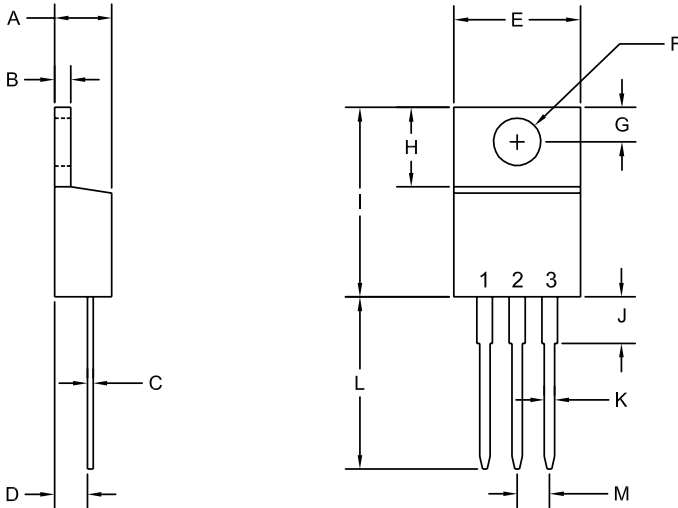
| | SYMBOL | TIP29 | TIP29A | TIP29B | TIP29C | UNIT |
|---|-----------------------------------|-------------|--------|-------------|--------|------|
| Collector-Base Voltage | V _{CB0} | 40 | 60 | 80 | 100 | V |
| Emitter-Base Voltage | V _{EB0} | 5.0 | 5.0 | 5.0 | 5.0 | V |
| Collector-Emitter Voltage | V _{CE0} | 40 | 60 | 80 | 100 | V |
| Collector Current, Continuous | I _C | 1.0 | 1.0 | 1.0 | 1.0 | A |
| Collector Current, Peak | I _{CM} | 3.0 | 3.0 | 3.0 | 3.0 | A |
| Base Current | I _B | 0.4 | 0.4 | 0.4 | 0.4 | A |
| Power Dissipation | P _D | 30 | 30 | 30 | 30 | W |
| Power Dissipation (T _A =25°C) | P _D | 2.0 | 2.0 | 2.0 | 2.0 | W |
| Operating and Storage Junction Temperature | T _J , T _{stg} | -65 TO +150 | | -65 TO +150 | | °C |

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNIT |
|----------------------|--|---------|-----|------|
| I _{CEO} | V _{CE} =30V (TIP29, TIP29A) | | 0.3 | mA |
| I _{CEO} | V _{CE} =60V (TIP29B, TIP29C) | | 0.3 | mA |
| I _{CES} | V _{CE} =Rated V _{CE0} | | 0.2 | mA |
| I _{EB0} | V _{EB} =5.0V | | 1.0 | mA |
| BV _{CE0} | I _C =30mA, (TIP29) | 40 | | V |
| BV _{CE0} | I _C =30mA, (TIP29A) | 60 | | V |
| BV _{CE0} | I _C =30mA, (TIP29B) | 80 | | V |
| BV _{CE0} | I _C =30mA, (TIP29C) | 100 | | V |
| V _{CE(SAT)} | I _C =1.0A, I _B =125mA | | 0.7 | V |
| V _{BE(on)} | V _{CE} =4.0V, I _C =1.0A | | 1.3 | V |
| h _{FE} | V _{CE} =4.0V, I _C =0.2A | 40 | | - |
| h _{FE} | V _{CE} =4.0V, I _C =1.0A | 15 | 75 | - |
| h _{fe} | V _{CE} =10V, I _C =0.2A, f=1 kHz | 20 | | - |
| f _T | V _{CE} =10V, I _C =0.2A, f=1 MHz | 3 | | MHz |
| ton | I _C =1.0A, I _{B1} =I _{B2} =100mA, R _L =30 OHMS | 0.5 TYP | | uS |
| toff | I _C =1.0A, I _{B1} =I _{B2} =100mA, R _L =30 OHMS | 2.0 TYP | | uS |

Package Details - TO-220

Mechanical Drawing



| SYMBOL | INCHES | | MILLIMETERS | |
|---------|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.170 | 0.190 | 4.31 | 4.82 |
| B | 0.045 | 0.055 | 1.15 | 1.39 |
| C | 0.013 | 0.026 | 0.33 | 0.65 |
| D | 0.083 | 0.107 | 2.10 | 2.72 |
| E | 0.394 | 0.417 | 10.01 | 10.60 |
| F (DIA) | 0.140 | 0.157 | 3.55 | 4.00 |
| G | 0.100 | 0.118 | 2.54 | 3.00 |
| H | 0.230 | 0.270 | 5.85 | 6.85 |
| I | 0.560 | 0.625 | 14.23 | 15.87 |
| J | - | 0.250 | - | 6.35 |
| K | 0.025 | 0.038 | 0.64 | 0.96 |
| L | 0.500 | 0.579 | 12.70 | 14.70 |
| M | 0.090 | 0.110 | 2.29 | 2.79 |

TO-220 (REV: R2)

LEAD CODE:

R2

TRIAC

- 1) MT1
- 2) MT2
- 3) GATE

SCR

- 1) CATHODE
- 2) ANODE
- 3) GATE

TRANSISTOR

- 1) BASE
- 2) COLLECTOR
- 3) EMITTER

Note: TAB is Common to Pin 2

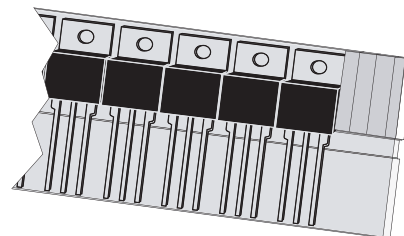
Packing Information

Standard: Bulk

Devices are bulk packed in white corrugated box with black conductive coating (surface resistivity of $<10^5$ ohms per square).

Standard Packing Quantity: 500

Sleeve Packing Quantity: 50



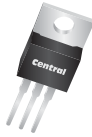
TO-220 Antistatic Sleeve

CentralTM
Semiconductor Corp.
www.centrasemi.com

R0 (9-August 2004)

Material Composition Specification

TO-220 Case



Device average mass 1.89 g
 Fluctuation margin +/-10%

| Component | Material | Material | | Substance | CAS No. | Substance | | |
|----------------|-------------------------|----------|---------|--------------------------------|-------------|-----------|-------|---------|
| | | (%wt) | (mg) | | | (%wt) | (mg) | (ppm) |
| active device | doped Si | 0.3% | 5.67 | Si | 7440-21-3 | 0.3% | 5.67 | 3,006 |
| bond wire | aluminum | 0.14% | 2.55 | Al | 7429-90-5 | 0.14% | 2.55 | 1,352 |
| leadframe | Cu alloy | 66.89% | 1261.86 | Cu | 7440-50-8 | 66.79% | 1,260 | 667,944 |
| | | | | Fe | 7439-89-6 | 0.003% | 0.06 | 32 |
| | | | | P | 7723-14-0 | 0.1% | 1.8 | 954 |
| die attach | high temperature solder | 0.33% | 6.21 | Pb | 7439-92-1 | 0.3% | 5.74 | 3,043 |
| | | | | Sn | 7440-31-5 | 0.02% | 0.31 | 164 |
| | | | | Ag | 7440-22-4 | 0.01% | 0.16 | 82 |
| encapsulation* | EMC | 31.81% | 600 | silica | 7631-86-9 | 23.22% | 438 | 232,190 |
| | | | | epoxy resin | Proprietary | 7.32% | 138 | 73,156 |
| | | | | Sb ₂ O ₃ | 1309-64-4 | 0.64% | 12 | 6,361 |
| | | | | TBBA | 79-94-7 | 0.64% | 12 | 6,361 |
| | EMC GREEN | 31.81% | 600 | silica | 7631-86-9 | 23.86% | 450 | 238,552 |
| | | | | epoxy resin | Proprietary | 4.93% | 93 | 49,301 |
| | | | | epoxy polymer | Proprietary | 2.39% | 45 | 23,855 |
| | | | | Sb ₂ O ₃ | 1309-64-4 | 0.54% | 10.2 | 5,406 |
| carbon black | | | | 1333-86-4 | 0.1% | 1.8 | 954 | |
| | | | | | | | | |
| plating** | tin/lead process | 0.54% | 10.1 | Sn | 7440-31-5 | 0.43% | 8.08 | 4,283 |
| | | | | Pb | 7439-92-1 | 0.11% | 2.02 | 1,071 |
| | matte tin | 0.54% | 10.1 | Sn | 7440-31-5 | 0.54% | 10.1 | 5,354 |

*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.

R4 (16-July 2018)

Material Composition Specification

TO-220 Case



Device average mass 1.89 g
 Fluctuation margin +/-10%

| Component | Material | Material | | Substance | CAS No. | Substance | | |
|----------------|-------------------------|----------|---------|--------------------------------|-------------|-----------|-------|---------|
| | | (%wt) | (mg) | | | (%wt) | (mg) | (ppm) |
| active device | doped Si | 0.3% | 5.67 | Si | 7440-21-3 | 0.3% | 5.67 | 3,006 |
| bond wire | aluminum | 0.14% | 2.55 | Al | 7429-90-5 | 0.14% | 2.55 | 1,352 |
| leadframe | Cu alloy | 66.89% | 1261.86 | Cu | 7440-50-8 | 66.79% | 1,260 | 667,944 |
| | | | | Fe | 7439-89-6 | 0.003% | 0.06 | 32 |
| | | | | P | 7723-14-0 | 0.1% | 1.8 | 954 |
| die attach | high temperature solder | 0.33% | 6.21 | Pb | 7439-92-1 | 0.3% | 5.74 | 3,043 |
| | | | | Sn | 7440-31-5 | 0.02% | 0.31 | 164 |
| | | | | Ag | 7440-22-4 | 0.01% | 0.16 | 82 |
| encapsulation* | EMC | 31.81% | 600 | silica | 7631-86-9 | 23.22% | 438 | 232,190 |
| | | | | epoxy resin | Proprietary | 7.32% | 138 | 73,156 |
| | | | | Sb ₂ O ₃ | 1309-64-4 | 0.64% | 12 | 6,361 |
| | | | | TBBA | 79-94-7 | 0.64% | 12 | 6,361 |
| | EMC GREEN | 31.81% | 600 | silica | 7631-86-9 | 23.86% | 450 | 238,552 |
| | | | | epoxy resin | Proprietary | 4.93% | 93 | 49,301 |
| | | | | epoxy polymer | Proprietary | 2.39% | 45 | 23,855 |
| | | | | Sb ₂ O ₃ | 1309-64-4 | 0.54% | 10.2 | 5,406 |
| carbon black | | | | 1333-86-4 | 0.1% | 1.8 | 954 | |
| | | | | | | | | |
| plating** | tin/lead process | 0.54% | 10.1 | Sn | 7440-31-5 | 0.43% | 8.08 | 4,283 |
| | | | | Pb | 7439-92-1 | 0.11% | 2.02 | 1,071 |
| | matte tin | 0.54% | 10.1 | Sn | 7440-31-5 | 0.54% | 10.1 | 5,354 |

*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.

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R4 (16-July 2018)

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.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.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.centrasemi.com/terms



Product End of Life Notification

| | |
|---------------------------|------------|
| PDN ID: | PDN01250 |
| Notification Date: | 2/10/23 |
| Last Buy Date: | Stock Only |
| Last Shipment Date | 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

DISCLAIMER: This End of Life (EOL) notification is in accordance with 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.



https://www.centrasemi.com

Product End of Life Notification

| | |
|--------------------|------------|
| PDN ID: | PDN01250 |
| Notification Date: | 2/10/23 |
| Last Buy Date: | Stock Only |
| Last Shipment Date | Stock Only |

Summary: The following power transistors are discontinued and now classified as of End of Life (EOL). NOTE: If inventory has been depleted, some devices may be available on special order; please contact your Central salesperson, manufacturer's rep, franchised distributor, or inquiry@centrasemi.com.

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 |
|---------------------|-----------------------|
| BDW51 | N/A |
| BDW51A | N/A |
| BDW51B | N/A |
| BDW51C | N/A |
| BDW52 | N/A |
| BDW52A | N/A |
| BDW52B | N/A |
| BDW52C | N/A |
| BDW94B | N/A |
| BDX20 | N/A |
| BDX54 | N/A |
| BDX54B | N/A |
| BDX54C | N/A |
| BDX54E | N/A |
| BDX85 | N/A |
| BDX85A | N/A |
| BDX85B | N/A |
| BDX85C | N/A |
| BDX87 | N/A |
| BDX87A | N/A |
| BDX87B | N/A |
| BDX87C | N/A |
| BDY90 | N/A |
| BD135 | N/A |
| BD135 SL | N/A |
| BD135-10 SL | N/A |
| BD135-16 | N/A |
| BD135-16 SL | N/A |
| BD136 | N/A |
| BD136-10 | N/A |
| BD136-10 SL | N/A |
| BD136-16 | N/A |
| BD136-16 SL | N/A |
| BD137 | N/A |

*** CONTINUED ***

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https://www.centalsemi.com

Product End of Life Notification

| | |
|---------------------------|------------|
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| Notification Date: | 2/10/23 |
| Last Buy Date: | Stock Only |
| Last Shipment Date | Stock Only |

*** CONTINUED FROM PRIOR PAGE ***

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

| <u>Central Part Number</u> | <u>Suggested Replacement</u> |
|----------------------------|------------------------------|
| BD137-10 | N/A |
| BD137-10 SL | N/A |
| BD137-16 | N/A |
| BD138 | N/A |
| BD138-10 | N/A |
| BD138-10 SL | N/A |
| BD138-16 | N/A |
| BD138-16 SL | N/A |
| BD139 | N/A |
| BD139-10 | N/A |
| BD139-10 SL | N/A |
| BD139-16 | N/A |
| BD139-16 SL | N/A |
| BD140 | N/A |
| BD140-10 | N/A |
| BD140-10 SL | N/A |
| BD140-16 | N/A |
| BD140-16 SL | N/A |
| BD157 | N/A |
| BD158 | N/A |
| BD159 | N/A |
| BD175 | N/A |
| BD176 | N/A |
| BD177 | N/A |
| BD178 | N/A |
| BD179 | N/A |
| BD180 | N/A |
| BD201 | N/A |
| BD204 | N/A |
| BD233 | N/A |
| BD234 | N/A |
| BD235 | N/A |
| BD236 | N/A |
| BD237 | N/A |
| BD238 | N/A |
| BD238 SL | N/A |
| BD433 | N/A |
| BD434 | N/A |
| BD437 | N/A |
| BD438 | N/A |
| BD439 | N/A |
| BD440 | N/A |
| BD441 | N/A |

*** CONTINUED ***

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https://www.centrasemi.com

Product End of Life Notification

| | |
|--------------------|------------|
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| Last Shipment Date | Stock Only |

*** CONTINUED FROM PRIOR PAGE ***

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

| Central Part Number | Suggested Replacement |
|---------------------|-----------------------|
| BD442 | N/A |
| BD537 | N/A |
| BD538 | N/A |
| BD675 | N/A |
| BD675A | N/A |
| BD676 | N/A |
| BD676A | N/A |
| BD676A SL | N/A |
| BD677 | N/A |
| BD677A | N/A |
| BD678 | N/A |
| BD678A | N/A |
| BD679 | N/A |
| BD679A | N/A |
| BD679A SL | N/A |
| BD680 | N/A |
| BD680A | N/A |
| BD680A SL | N/A |
| BD681 | N/A |
| BD681 SL | N/A |
| BD682 | N/A |
| BD682 SL | N/A |
| BD683 | N/A |
| BD683 SL | N/A |
| BD908 | N/A |
| BF457 | N/A |
| BF458 | N/A |
| BF459 | N/A |
| BF459 SL | N/A |
| BF469 | N/A |
| BF471 | N/A |
| BF472 | N/A |
| BUW34 | N/A |
| BUW35 | N/A |
| BUW36 | N/A |
| BUW44 | N/A |
| BUW45 | N/A |
| BUW46 | N/A |
| BUX43 | N/A |
| BUX44 | N/A |
| BUX47 | N/A |
| BUX48 | N/A |
| BUX80 | N/A |

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https://www.centrasemi.com

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| Last Shipment Date | Stock Only |

*** CONTINUED FROM PRIOR PAGE ***

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

| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| BUY69A | N/A |
| BUY69B | N/A |
| BUY69C | N/A |
| BU408 | N/A |
| BU409 | N/A |
| CEN1025 | N/A |
| CEN1037 | N/A |
| CEN1063 | N/A |
| CEN1092 | N/A |
| CEN1102 | N/A |
| CEN1111 | N/A |
| CEN1177 | N/A |
| CEN1247 | N/A |
| CEN1306 | N/A |
| CEN1323 | N/A |
| CEN1328 | N/A |
| CEN1364 SL | N/A |
| CEN1378 SL | N/A |
| CEN1391 | N/A |
| CEN1396 | N/A |
| CEN1406 | N/A |
| CEN1416 | N/A |
| CEN1439 | N/A |
| CEN1450 | N/A |
| CEN496 | N/A |
| CEN537 | N/A |
| CEN591 | N/A |
| CEN596 | N/A |
| CEN644 | N/A |
| CEN671 | N/A |
| CEN698-1 | N/A |
| CEN698-2 | N/A |
| CEN774 | N/A |
| CEN821 | N/A |
| CEN844 | N/A |
| CEN925 | N/A |
| CEN951 | N/A |
| CEN961 | N/A |
| CEN972 | N/A |
| CEN992 | N/A |
| CM3441 | N/A |
| CP166-BUP54-WN | N/A |
| CZT122 BK | N/A |

*** CONTINUED ***

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https://www.centrasemi.com

Product End of Life Notification

| | |
|--------------------|------------|
| PDN ID: | PDN01250 |
| Notification Date: | 2/10/23 |
| Last Buy Date: | Stock Only |
| Last Shipment Date | Stock Only |

*** CONTINUED FROM PRIOR PAGE ***

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

| Central Part Number | Suggested Replacement |
|---------------------|-----------------------|
| CZT122 TR | N/A |
| CZT31C BK | N/A |
| CZT31C TR | N/A |
| D44C12 | N/A |
| D44E1 | N/A |
| D44E3 | N/A |
| D45E3 | N/A |
| D45H8 | N/A |
| MJE13003 | N/A |
| MJE13003 SL | N/A |
| MJE13005 | N/A |
| MJE13005 SL | N/A |
| MJE13006 | N/A |
| MJE13008 | N/A |
| MJE13009 | N/A |
| MJE15030 | N/A |
| MJE15031 | N/A |
| MJE170 | N/A |
| MJE171 | N/A |
| MJE172 | N/A |
| MJE180 | N/A |
| MJE181 | N/A |
| MJE182 | N/A |
| MJE200 | N/A |
| MJE210 | N/A |
| MJE220 | N/A |
| MJE221 | N/A |
| MJE222 | N/A |
| MJE223 | N/A |
| MJE224 | N/A |
| MJE225 | N/A |
| MJE230 | N/A |
| MJE231 | N/A |
| MJE232 | N/A |
| MJE233 | N/A |
| MJE234 | N/A |
| MJE235 | N/A |
| MJE2360T | N/A |
| MJE240 | N/A |
| MJE241 | N/A |
| MJE242 | N/A |
| MJE243 | N/A |
| MJE244 | N/A |

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Product End of Life Notification

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

| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| MJE250 | N/A |
| MJE251 | N/A |
| MJE252 | N/A |
| MJE253 | N/A |
| MJE254 | N/A |
| MJE2801T | N/A |
| MJE2901T | N/A |
| MJE2955T | N/A |
| MJE340 | N/A |
| MJE341 | N/A |
| MJE344 | N/A |
| MJE344 SL | N/A |
| MJE3440 | N/A |
| MJE350 | N/A |
| MJE370 | N/A |
| MJE371 | N/A |
| MJE520 | N/A |
| MJE521 | N/A |
| MJE700 | N/A |
| MJE701 | N/A |
| MJE702 | N/A |
| MJE703 | N/A |
| MJE710 | N/A |
| MJE711 | N/A |
| MJE712 | N/A |
| MJE720 | N/A |
| MJE721 | N/A |
| MJE722 | N/A |
| MJE800 | N/A |
| MJE800T | N/A |
| MJE801 | N/A |
| MJE801T | N/A |
| MJE802 | N/A |
| MJE802T | N/A |
| MJE803 | N/A |
| MJE803T | N/A |
| MJ1000 | N/A |
| MJ1001 | N/A |
| MJ10012 | N/A |
| MJ11011 | N/A |
| MJ11012 | N/A |
| MJ11013 | N/A |
| MJ11014 | N/A |

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| Central Part Number | Suggested Replacement |
|---------------------|-----------------------|
| MJ11015 | N/A |
| MJ11016 | N/A |
| MJ2501 | N/A |
| MJ2955 | N/A |
| MJ3000 | N/A |
| MJ3001 | N/A |
| MJ4033 | N/A |
| MJ4035 | N/A |
| MJ410 | N/A |
| MJ802 | N/A |
| MJ901 | N/A |
| PMD10K100 | N/A |
| PMD10K40 | N/A |
| PMD10K60 | N/A |
| PMD10K80 | N/A |
| PMD12K100 | N/A |
| PMD12K40 | N/A |
| PMD12K60 | N/A |
| PMD12K80 | N/A |
| PMD13K100 | N/A |
| PMD16K100 | N/A |
| PMD16K60 | N/A |
| PMD16K80 | N/A |
| PMD1601K | N/A |
| PMD1602K | N/A |
| PMD1603K | N/A |
| PMD17K100 | N/A |
| PMD17K60 | N/A |
| PMD17K80 | N/A |
| PMD1701K | N/A |
| PMD1702K | N/A |
| PMD1703K | N/A |
| PMD18K100 | N/A |
| PMD18K60 | N/A |
| PMD18K80 | N/A |
| PMD19K100 | N/A |
| PMD19K60 | N/A |
| PMD19K80 | N/A |
| SE9303 | N/A |
| SE9304 | N/A |
| SE9305 | N/A |
| TIP102 | N/A |
| TIP107 | N/A |

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| Central Part Number | Suggested Replacement |
|---------------------|-----------------------|
| TIP107 SL | N/A |
| TIP117 | N/A |
| TIP117 SL | N/A |
| TIP122 | N/A |
| TIP122 SL | N/A |
| TIP127 | N/A |
| TIP127 SL | N/A |
| TIP132 | N/A |
| TIP137 | N/A |
| TIP140T | N/A |
| TIP141T | N/A |
| TIP142T | N/A |
| TIP145T | N/A |
| TIP146T | N/A |
| TIP147T | N/A |
| TIP29 | N/A |
| TIP29A | N/A |
| TIP29A SL | N/A |
| TIP29B | N/A |
| TIP29C | N/A |
| TIP31 | N/A |
| TIP31 SL | N/A |
| TIP31A | N/A |
| TIP31B | N/A |
| TIP31C SL | N/A |
| TIP32 | N/A |
| TIP32A | N/A |
| TIP32A SL | N/A |
| TIP32B | N/A |
| TIP32C | N/A |
| TIP41 | N/A |
| TIP41A | N/A |
| TIP41B | N/A |
| TIP41C | N/A |
| TIP41C SL | N/A |
| TIP42 | N/A |
| TIP42A | N/A |
| TIP42B | N/A |
| TIP42C | N/A |
| TIP42C SL | N/A |
| TIP42D | N/A |
| 2N3054 | N/A |
| 2N3055 | N/A |

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

| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| 2N3442 | N/A |
| 2N3448 | N/A |
| 2N3713 | N/A |
| 2N3714 | N/A |
| 2N3715 | N/A |
| 2N3716 | N/A |
| 2N3766 | N/A |
| 2N3767 | N/A |
| 2N3771 | N/A |
| 2N3772 | N/A |
| 2N3773 | N/A |
| 2N3789 | N/A |
| 2N3790 | N/A |
| 2N3791 | N/A |
| 2N3792 | N/A |
| 2N3902 | N/A |
| 2N4231 | N/A |
| 2N4232 | N/A |
| 2N4233 | N/A |
| 2N4347 | N/A |
| 2N4348 | N/A |
| 2N4398 | N/A |
| 2N4399 | N/A |
| 2N4901 | N/A |
| 2N4902 | N/A |
| 2N4903 | N/A |
| 2N4904 | N/A |
| 2N4905 | N/A |
| 2N4906 | N/A |
| 2N4910 | N/A |
| 2N4911 | N/A |
| 2N4912 | N/A |
| 2N4913 | N/A |
| 2N4914 | N/A |
| 2N4915 | N/A |
| 2N4918 | N/A |
| 2N4919 | N/A |
| 2N4920 | N/A |
| 2N4921 | N/A |
| 2N4922 | N/A |
| 2N4923 | N/A |
| 2N4923 SL | N/A |
| 2N5067 | N/A |

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

| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| 2N5068 | N/A |
| 2N5069 | N/A |
| 2N5192 | N/A |
| 2N5192 SL | N/A |
| 2N5195 | N/A |
| 2N5195 SL | N/A |
| 2N5240 | N/A |
| 2N5294 | N/A |
| 2N5296 | N/A |
| 2N5297 | N/A |
| 2N5297 SL | N/A |
| 2N5298 | N/A |
| 2N5301 | N/A |
| 2N5302 | N/A |
| 2N5303 | N/A |
| 2N5490 | N/A |
| 2N5492 | N/A |
| 2N5494 | N/A |
| 2N5496 | N/A |
| 2N5629 | N/A |
| 2N5632 | N/A |
| 2N5655 | N/A |
| 2N5656 | N/A |
| 2N5657 | N/A |
| 2N5745 | N/A |
| 2N5760 | N/A |
| 2N5838 | N/A |
| 2N5873 | N/A |
| 2N5875 | N/A |
| 2N5876 | N/A |
| 2N5877 | N/A |
| 2N5878 | N/A |
| 2N5879 | N/A |
| 2N5880 | N/A |
| 2N5881 | N/A |
| 2N5882 | N/A |
| 2N5883 | N/A |
| 2N5884 | N/A |
| 2N5885 | N/A |
| 2N5886 | N/A |
| 2N6029 | N/A |
| 2N6031 | N/A |
| 2N6034 | N/A |

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

| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| 2N6035 | N/A |
| 2N6036 | N/A |
| 2N6037 | N/A |
| 2N6038 | N/A |
| 2N6039 SL | N/A |
| 2N6040 | N/A |
| 2N6042 | N/A |
| 2N6043 | N/A |
| 2N6044 | N/A |
| 2N6045 | N/A |
| 2N6050 | N/A |
| 2N6051 | N/A |
| 2N6052 | N/A |
| 2N6055 | N/A |
| 2N6056 | N/A |
| 2N6057 | N/A |
| 2N6058 | N/A |
| 2N6059 | N/A |
| 2N6099 | N/A |
| 2N6109 | N/A |
| 2N6111 | N/A |
| 2N6121 | N/A |
| 2N6122 | N/A |
| 2N6123 | N/A |
| 2N6124 | N/A |
| 2N6125 | N/A |
| 2N6126 | N/A |
| 2N6129 | N/A |
| 2N6130 | N/A |
| 2N6131 | N/A |
| 2N6132 | N/A |
| 2N6133 | N/A |
| 2N6134 | N/A |
| 2N6226 | N/A |
| 2N6229 | N/A |
| 2N6230 | N/A |
| 2N6246 | N/A |
| 2N6247 | N/A |
| 2N6248 | N/A |
| 2N6249 | N/A |
| 2N6250 | N/A |
| 2N6251 | N/A |
| 2N6253 | N/A |

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| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| 2N6254 | N/A |
| 2N6259 | N/A |
| 2N6260 | N/A |
| 2N6263 | N/A |
| 2N6282 | N/A |
| 2N6283 | N/A |
| 2N6284 | N/A |
| 2N6285 | N/A |
| 2N6286 | N/A |
| 2N6287 | N/A |
| 2N6288 | N/A |
| 2N6290 | N/A |
| 2N6292 | N/A |
| 2N6306 | N/A |
| 2N6307 | N/A |
| 2N6308 | N/A |
| 2N6312 | N/A |
| 2N6371 | N/A |
| 2N6383 | N/A |
| 2N6384 | N/A |
| 2N6385 | N/A |
| 2N6386 | N/A |
| 2N6387 | N/A |
| 2N6388 | N/A |
| 2N6465 | N/A |
| 2N6466 | N/A |
| 2N6469 | N/A |
| 2N6470 | N/A |
| 2N6471 | N/A |
| 2N6472 | N/A |
| 2N6475 | N/A |
| 2N6476 | N/A |
| 2N6489 | N/A |
| 2N6489 SL | N/A |
| 2N6490 | N/A |
| 2N6491 | N/A |
| 2N6497 | N/A |
| 2N6498 | N/A |
| 2N6498 SL | N/A |
| 2N6499 | N/A |
| 2N6499 SL | N/A |
| 2N6530 | N/A |
| 2N6531 | N/A |

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| Central Part Number | Suggested Replacement |
|----------------------------|------------------------------|
| 2N6532 | N/A |
| 2N6543 | N/A |
| 2N6544 | N/A |
| 2N6545 | N/A |
| 2N6546 | N/A |
| 2N6547 | N/A |
| 2N6569 | N/A |
| 2N6576 | N/A |
| 2N6577 | N/A |
| 2N6578 | N/A |
| 2N6594 | N/A |
| 2N6609 | N/A |
| 2N6666 | N/A |
| 2N6667 | N/A |
| 2N6668 | N/A |
| 2N6671 | N/A |
| 2N6672 | N/A |
| 2N6673 | N/A |
| 2N6674 | N/A |
| 2N6675 | N/A |
| 2N6677 | N/A |
| 2N6678 | N/A |
| 40250 | N/A |
| 40312 | 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. If you would like assistance, please visit <https://my.centrasemi.com/submit-inquiry?type=ER> to submit an online inquiry.

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