

CMJ0130  
THRU  
CMJH220

**SURFACE MOUNT SILICON  
CURRENT LIMITING DIODES**



www.centrasemi.com



**SOD-123FL CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMJ0130 series devices are silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the epoxy molded, low profile SOD-123FL case. Special selections of  $I_P$  (regulator current) are available for critical applications.

**MARKING: SEE MARKING CODES ON ELECTRICAL CHARACTERISTICS TABLE**

**FEATURES:**

- High reliability
- Special selections available
- Through hole devices available

**MAXIMUM RATINGS:** ( $T_A=60^\circ\text{C}$ )

Peak Operating Voltage (CMJ0130 THRU CMJ5750)  
Peak Operating Voltage (CMJH080 THRU CMJH220)  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $P_{OV}$       | 100         | V                  |
| $P_{OV}$       | 50          | V                  |
| $P_D$          | 500         | mW                 |
| $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$   |
| $\theta_{JA}$  | 180         | $^\circ\text{C/W}$ |

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| Type    | Regulator Current (Note 1) |        |        | Minimum Dynamic Impedance | Minimum Knee Impedance | Maximum Limiting Voltage               | Temperature Coefficient (Note 2) | Marking Code |
|---------|----------------------------|--------|--------|---------------------------|------------------------|--|----------------------------------|--------------|
|         | $I_P @ V_T=25V$            |        |        | $Z_T @ V_T=25V$           | $Z_K @ V_K=6.0V$       | $V_L @ I_L=0.8 \times I_P \text{ MIN}$ | TC                               |              |
|         | MIN mA                     | NOM mA | MAX mA | M $\Omega$                | k $\Omega$             | V                                      | %/ $^\circ\text{C}$              |              |
| CMJ0130 | 0.05                       | 0.13   | 0.21   | 6.0                       | 2,000                  | 0.6                                    | +2.10 to +0.10                   | 101          |
| CMJ0300 | 0.20                       | 0.31   | 0.42   | 4.0                       | 1,000                  | 0.8                                    | +0.40 to -0.20                   | 301          |
| CMJ0500 | 0.40                       | 0.515  | 0.63   | 2.0                       | 500                    | 1.1                                    | +0.15 to -0.25                   | 501          |
| CMJ0750 | 0.60                       | 0.76   | 0.92   | 1.0                       | 200                    | 1.4                                    | 0.0 to -0.32                     | 701          |
| CMJ1000 | 0.88                       | 1.1    | 1.32   | 0.65                      | 100                    | 1.7                                    | -0.10 to -0.37                   | 102          |
| CMJ1500 | 1.28                       | 1.5    | 1.72   | 0.45                      | 70                     | 2.0                                    | -0.13 to -0.40                   | 152          |
| CMJ2000 | 1.68                       | 2.0    | 2.32   | 0.35                      | 50                     | 2.3                                    | -0.15 to -0.42                   | 202          |
| CMJ2700 | 2.28                       | 2.69   | 3.1    | 0.30                      | 30                     | 2.7                                    | -0.18 to -0.45                   | 272          |
| CMJ3500 | 3.0                        | 3.55   | 4.1    | 0.25                      | 20                     | 3.2                                    | -0.20 to -0.47                   | 352          |
| CMJ4500 | 3.9                        | 4.5    | 5.1    | 0.20                      | 10                     | 3.7                                    | -0.22 to -0.50                   | 452          |
| CMJ5750 | 5.0                        | 5.75   | 6.5    | 0.05                      | 5.0                    | 4.5                                    | -0.25 to -0.53                   | 562          |
| CMJH080 | 6.56                       | 8.2    | 9.84   | 0.32                      | 15                     | 3.1                                    | -0.25 to -0.45                   | 822          |
| CMJH100 | 8.0                        | 10     | 12     | 0.17                      | 6.0                    | 3.5                                    | -0.25 to -0.45                   | 103          |
| CMJH120 | 9.6                        | 12     | 14.4   | 0.08                      | 3.0                    | 3.8                                    | -0.25 to -0.45                   | 123          |
| CMJH150 | 12                         | 15     | 18     | 0.03                      | 2.0                    | 4.3                                    | -0.25 to -0.45                   | 153          |
| CMJH180 | 16                         | 18     | 20     | 0.02                      | 1.8                    | 4.6                                    | -0.25 to -0.45                   | 183          |
| CMJH220 | 20                         | 22.5   | 25     | 0.01                      | 1.6                    | 5.3                                    | -0.25 to -0.45                   | 223          |

Notes: 1) Pulsed Method: Pulse Width (ms) = 27.5 divided by  $I_P$  NOM (mA)  
2) The Temperature Coefficient is measured between +25 $^\circ\text{C}$  and +50 $^\circ\text{C}$ .

R6 (24-July 2019)

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**SOD-123FL CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- 1) Cathode
- 2) Anode

**MARKING: SEE ELECTRICAL  
CHARACTERISTICS TABLE**

| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | INCHES     |       | MILLIMETERS |      |
|        | MIN        | MAX   | MIN         | MAX  |
| A      | 0.024      | 0.031 | 0.60        | 0.80 |
| B      | 0.020      | 0.028 | 0.50        | 0.70 |
| C      | 0.003      | 0.007 | 0.08        | 0.18 |
| D      | 0.059      | 0.067 | 1.50        | 1.70 |
| E      | 0.094      | 0.110 | 2.40        | 2.80 |
| F      | 0.130      | 0.146 | 3.30        | 3.70 |
| G      | 0.031      | 0.039 | 0.80        | 1.00 |

SOD-123FL (REV:R0)

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TYPICAL ELECTRICAL CHARACTERISTICS



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## 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)

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[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

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