

CMJ0130  
THRU  
CMJH220

**SURFACE MOUNT SILICON  
CURRENT LIMITING DIODES**



**SOD-123FL CASE**



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

**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**

$P_{OV}$

$P_{OV}$

$P_D$

$T_J, T_{stg}$

$\theta_{JA}$

100

50

500

-65 to +150

180

**UNITS**

V

V

mW

$^\circ\text{C}$

$^\circ\text{C/W}$

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

| Type    | Regulator Current<br>(Note 1) |           |           | Minimum<br>Dynamic<br>Impedance | Minimum<br>Knee<br>Impedance | Maximum<br>Limiting<br>Voltage         | Temperature<br>Coefficient<br>(Note 2) | Marking<br>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<br>mA                     | NOM<br>mA | MAX<br>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  $I_P \text{ NOM (mA)}$   
2) The Temperature Coefficient is measured between + 25 $^\circ\text{C}$  and +50 $^\circ\text{C}$ .

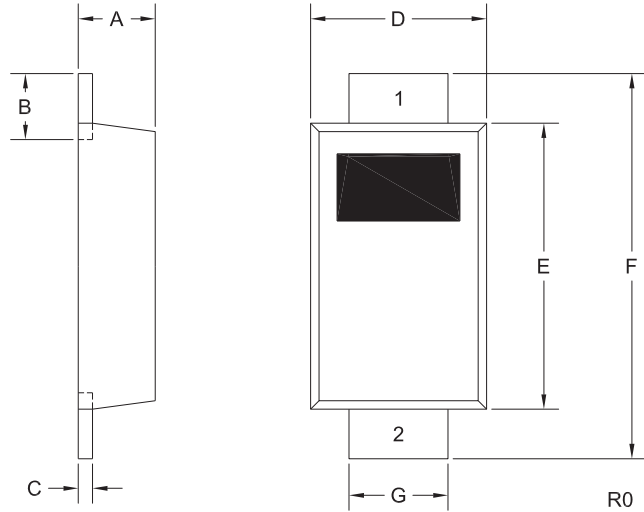
R6 (24-July 2019)

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SOD-123FL CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Cathode
- 2) Anode

MARKING: SEE ELECTRICAL  
CHARACTERISTICS TABLE

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | 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)

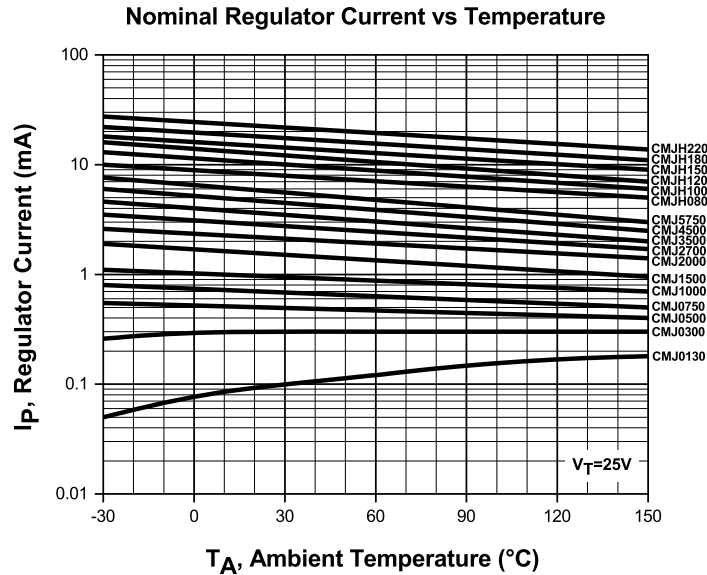
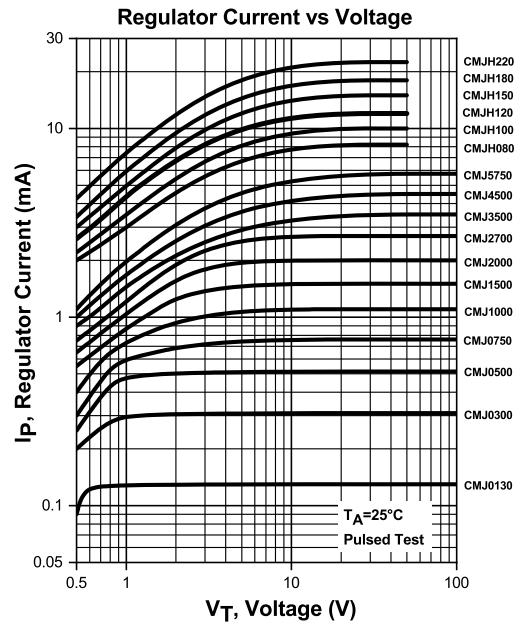
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## TYPICAL ELECTRICAL CHARACTERISTICS



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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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