

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com

BFX34

NPN SILICON TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION: The CENTRAL SEMICONDUCTOR BFX34 is a silicon NPN transistor designed for switching and general purpose applications where a high collector current (5.0 AMPS) is required.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

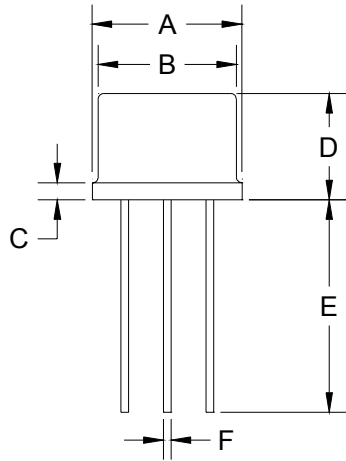
| | <u>SYMBOL</u> | | <u>UNITS</u> |
|---|----------------|-------------|--------------------|
| Collector-Base Voltage | V_{CBO} | 120 | V |
| Collector-Emitter Voltage | V_{CEO} | 60 | V |
| Emitter-Base Voltage | V_{EBO} | 6.0 | V |
| Collector Current | I_C | 5.0 | A |
| Power Dissipation | P_D | 1.0 | W |
| Power Dissipation ($T_C=25^\circ\text{C}$) | P_D | 5.0 | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -65 to +200 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | 175 | $^\circ\text{C/W}$ |
| Thermal Resistance | θ_{JC} | 35 | $^\circ\text{C/W}$ |

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

| <u>SYMBOL</u> | <u>TEST CONDITIONS</u> | <u>MIN</u> | <u>MAX</u> | <u>UNITS</u> |
|---------------|---|------------|------------|---------------|
| I_{CES} | $V_{CE}=60\text{V}$ | | 10 | μA |
| I_{EBO} | $V_{EB}=4.0\text{V}$ | | 10 | μA |
| BV_{CBO} | $I_C=5.0\text{mA}$ | 120 | | V |
| BV_{CEO} | $I_C=100\text{mA}$ | 60 | | V |
| BV_{EBO} | $I_E=1.0\text{mA}$ | 6.0 | | V |
| $V_{CE(SAT)}$ | $I_C=5.0\text{A}, I_B=0.5\text{A}$ | | 1.0 | V |
| $V_{BE(SAT)}$ | $I_C=5.0\text{A}, I_B=0.5\text{A}$ | | 1.6 | V |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=2.0\text{A}$ | 40 | 150 | |
| f_T | $V_{CE}=5.0\text{V}, I_C=0.5\text{A}, f=20\text{MHz}$ | 70 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 100 | pF |
| C_{ib} | $V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$ | | 500 | pF |
| t_{on} | $V_{CC}=20\text{V}, I_C=5.0\text{A}, I_{B1}=I_{B2}=0.5\text{A}$ | | 0.6 | μs |
| t_{off} | $V_{CC}=20\text{V}, I_C=5.0\text{A}, I_{B1}=I_{B2}=0.5\text{A}$ | | 1.2 | μs |

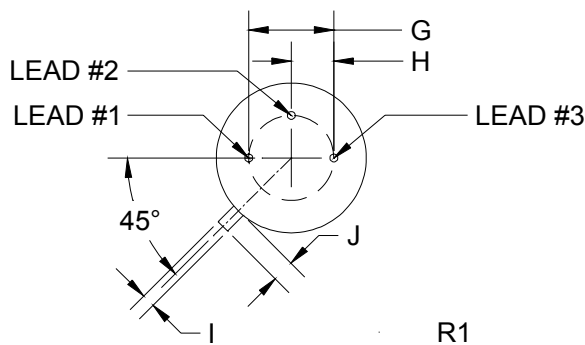
(SEE REVERSE SIDE)

TO-39 PACKAGE - MECHANICAL OUTLINE



| SYMBOL | INCHES | | MILLIMETERS | |
|---------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A (DIA) | 0.335 | 0.370 | 8.51 | 9.40 |
| B (DIA) | 0.315 | 0.335 | 8.00 | 8.51 |
| C | - | 0.040 | - | 1.02 |
| D | 0.240 | 0.260 | 6.10 | 6.60 |
| E | 0.500 | - | 12.70 | - |
| F (DIA) | 0.016 | 0.021 | 0.41 | 0.53 |
| G (DIA) | 0.200 | | 5.08 | |
| H | 0.100 | | 2.54 | |
| I | 0.028 | 0.034 | 0.71 | 0.86 |
| J | 0.029 | 0.045 | 0.74 | 1.14 |

TO-39 (REV: R1)



R1

Lead Code

- 1) Emitter
- 2) Base
- 3) Collector

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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

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