

2N2405
SILICON
NPN TRANSISTOR



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N2405 is a silicon NPN epitaxial planar transistor designed for small signal general purpose switching applications.

MARKING: FULL PART NUMBER



TO-39 CASE

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

| | SYMBOL | | UNITS |
|--|----------------|-------------|------------------|
| Collector-Base Voltage | V_{CBO} | 120 | V |
| Collector-Emitter Voltage | V_{CER} | 140 | V |
| Collector-Emitter Voltage | V_{CEV} | 120 | V |
| Collector-Emitter Voltage | V_{CEO} | 90 | V |
| Emitter-Base Voltage | V_{EBO} | 7.0 | V |
| Continuous Collector Current | I_C | 1.0 | A |
| Power Dissipation ($T_C=25^\circ\text{C}$) | P_D | 5.0 | W |
| Power Dissipation | P_D | 1.0 | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -65 to +200 | $^\circ\text{C}$ |

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

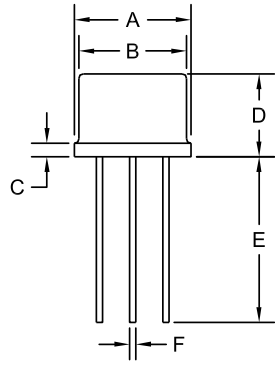
| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|--|-----|-----|---------------|
| I_{CBO} | $V_{CB}=90\text{V}$ | | 10 | nA |
| I_{CBO} | $V_{CB}=90\text{V}, T_C=150^\circ\text{C}$ | | 10 | μA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | 10 | nA |
| BV_{CBO} | $I_C=100\mu\text{A}$ | 120 | | V |
| BV_{CER} | $I_C=100\text{mA}, R_{BE}=10\Omega$ | 140 | | V |
| BV_{CER} | $I_C=100\text{mA}, R_{BE}=500\Omega$ | 120 | | V |
| BV_{CEO} | $I_C=100\text{mA}$ | 90 | | V |
| BV_{EBO} | $I_E=100\mu\text{A}$ | 7.0 | | V |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$ | | 0.2 | V |
| $V_{CE(SAT)}$ | $I_C=150\text{mA}, I_B=15\text{mA}$ | | 0.5 | V |
| $V_{BE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$ | | 0.9 | V |
| $V_{BE(SAT)}$ | $I_C=150\text{mA}, I_B=15\text{mA}$ | | 1.1 | V |
| h_{FE} | $V_{CE}=10\text{V}, I_C=100\mu\text{A}$ | 20 | | |
| h_{FE} | $V_{CE}=10\text{V}, I_C=10\text{mA}$ | 35 | | |
| h_{FE} | $V_{CE}=10\text{V}, I_C=150\text{mA}$ | 60 | 200 | |
| f_T | $V_{CE}=10\text{V}, I_C=50\text{mA}, f=20\text{MHz}$ | 120 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 15 | pF |
| C_{ib} | $V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$ | | 85 | pF |

R0 (2-December 2013)

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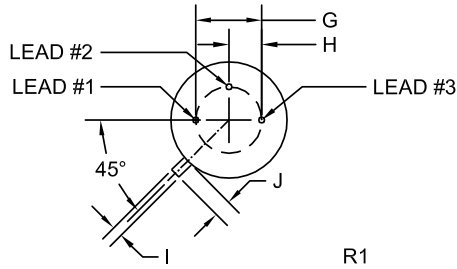


TO-39 CASE - MECHANICAL OUTLINE



| SYMBOL | DIMENSIONS | | | |
|---------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| 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)



LEAD CODE:

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

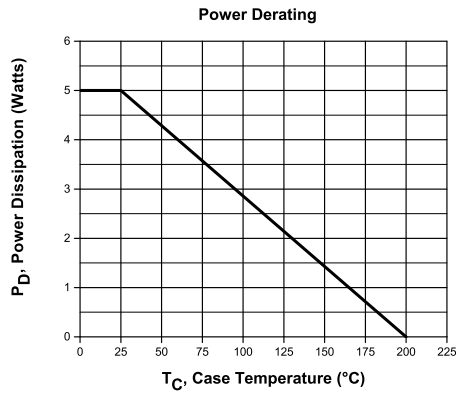
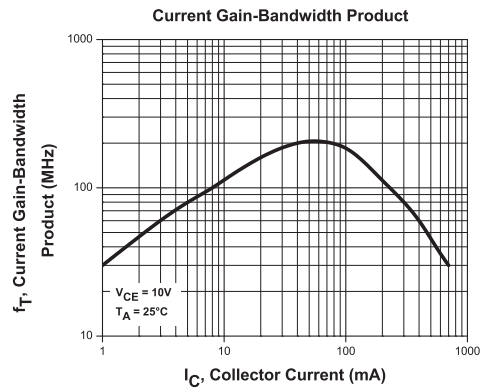
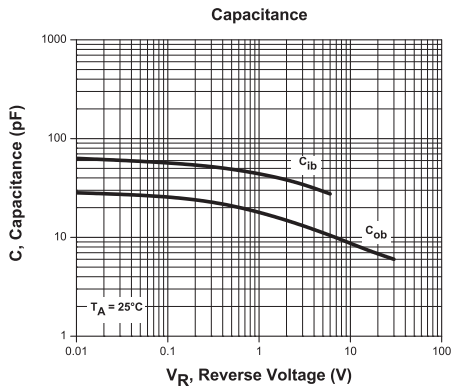
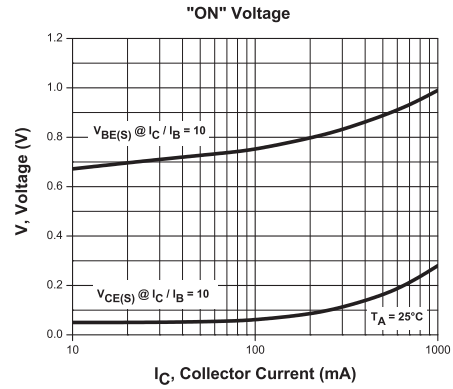
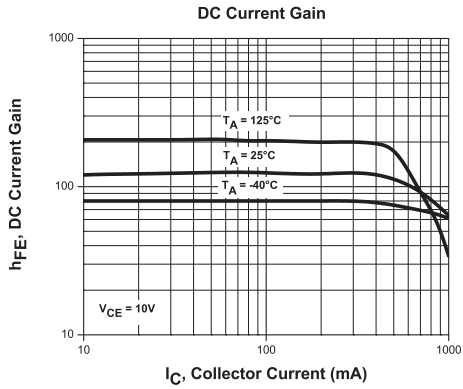
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TYPICAL ELECTRICAL CHARACTERISTICS



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- Customer specific screening
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- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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