PN2221 PN2221A PN2222 PN2222A

SILICON NPN TRANSISTORS



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR PN2221, PN2222 series devices are silicon NPN epitaxial planar transistors designed for small signal, general purpose switching applications.

MARKING: FULL PART NUMBER



| | . 0 02 0/102 | | | | | |
|----------------------|---|-----------------------------------|------------------|-------------|--------------|-------|
| MAYIM | UM RATINGS: (T _A =25°C) S | YMBOL | PN2221 PN2222 | | 221A 222A | UNITS |
| | | V _{CBO} | 60 | | 75 | V |
| | or-Emitter Voltage | VCEO | 30 | | 10 | V |
| Emitter-Base Voltage | | VEBO | 5.0 | 6.0 | | V |
| | lous Collector Current | IC | 0.0 | 800 | | mA |
| | Dissipation | P _D | | 625 | | mW |
| | | г _Ј , Т _{stg} | -65 | -65 to +150 | | |
| o por au | ng ana etorage canonen remperature | _ | | | 224 4 | °C |
| ELECT | BICAL CHARACTERISTICS: (T25°C) | | PN2221 PN2222 | | 221A 222A | |
| SYMBO | RICAL CHARACTERISTICS: (T _A =25°C) DL TEST CONDITIONS | MII | | MIN | MAX | UNITS |
| ICBO | V _{CB} =50V | - | 10 | - | - | nA |
| ICBO | V _{CB} =60V | _ | - | _ | 10 | nA |
| ICEV | V _{CF} =60V, V _{FB} =3.0V | _ | _ | _ | 10 | nA |
| IEBO | V _{FB} =3.0V | _ | 10 | _ | 10 | nA |
| BVCBC | | 60 | | 75 | - | V |
| BVCEC | IC=10mA | 30 | | 40 | _ | V |
| BVEBC |) I _E =10μA | 5.0 | | 6.0 | _ | V |
| V _{CE(S/} | AT) IC=150mA, I _B =15mA | _ | 0.4 | - | 0.3 | V |
| VCE(S/ | AT) IC=500mA, I _B =50mA | - | 1.6 | - | 1.0 | V |
| VBE(SA | , | 0.6 | 3 1.3 | 0.6 | 1.2 | V |
| V _{BE} (SA | , | - | 2.6 | - | 2.0 | V |
| DL(O | (1) | F | PN2221 | PN: | 2222 | |
| | | <u>P</u> | N2221A | PN2 | 222A | |
| | | MI | | MIN | MAX | |
| hFE | $V_{CE}=10V$, $I_{C}=0.1mA$ | 20 | | 35 | - | |
| hFE | V _{CE} =10V, I _C =1.0mA | 25 | | 50 | - | |
| hFE | V_{CE} =10V, I_{C} =10mA | 35 | | 75 | - | |
| h _{FE} | V _{CE} =10V, I _C =150mA | 40 | | 100 | 300 | |
| h _{FE} | V _{CE} =1.0V, I _C =150mA | 20 | | 50 | - | |
| h _{FE} | V _{CE} =10V, I _C =500mA (PN2221, PN2222) | 20 | | 30 | - | |
| hFE | V _{CE} =10V, I _C =500mA (PN2221A, PN2222A) | | | 40 | - | |
| fΤ | V _{CE} =20V, I _C =20mA, f=100MHz (except PN2 | | | 250 | - | MHz |
| f _T | V _{CE} =20V, I _C =20mA, f=100MHz (PN2222A) | - | - | 300 | - | MHz |
| C _{ob} | V _{CB} =10V, f=100kHz | - | 8.0 | - | 8.0 | pF |
| ton | V_{CC} =30V, I_{C} =150mA, I_{B} =15mA | - | 35 | - | 35 | ns |
| toff | V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA | - | 285 | - | 285 | ns |
| | | | | | | |

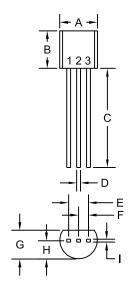
R2 (31-May 2018)

PN2221 PN2221A PN2222 PN2222A

SILICON NPN TRANSISTORS



TO-92 CASE - MECHANICAL OUTLINE



| DIMENSIONS | | | | | | | | |
|------------|--------|-------|-------------|------|--|--|--|--|
| | INCHES | | MILLIMETERS | | | | | |
| SYMBOL | MIN | MAX | MIN | MAX | | | | |
| A (DIA) | 0.175 | 0.205 | 4.45 | 5.21 | | | | |
| В | 0.170 | 0.210 | 4.32 | 5.33 | | | | |
| С | 0.500 | - | 12.70 | - | | | | |
| D | 0.016 | 0.022 | 0.41 | 0.56 | | | | |
| Е | 0.100 | | 2.54 | | | | | |
| F | 0.050 | | 1.27 | | | | | |
| G | 0.125 | 0.165 | 3.18 | 4.19 | | | | |
| Н | 0.080 | 0.105 | 2.03 | 2.67 | | | | |
| | 0.015 | | 0.38 | | | | | |

TO-92 (REV: R1)

LEAD CODE:

- 1) Emitter
- 2) Base

R1

3) Collector

MARKING: FULL PART NUMBER

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 guick 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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