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# 2N3375
# 2N3632/2N3733

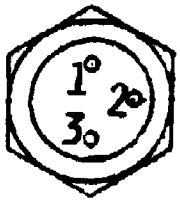
## RF & MICROWAVE TRANSISTORS
## VHF-UHF CLASS C WIDE BAND

- FREQUENCY 130 TO 400MHz
- VOLTAGE 28V
- POWER OUT 2.5 TO 13.5W
- HIGH POWER GAIN
- HIGH EFFICIENCY
- CLASS C TRANSISTORS
- COMMON EMITTER

TO 60

**BRANDING**
2N3375
2N3632
2N3733

**PIN CONNECTION**




3882N3375-01

1 emitter
2 base
3 collector

**DESCRIPTION**

This line of silicon epitaxial NPN planar high frequency transistors employs a multi emitter electrode design. This feature together with a heavily diffused base matrix located between the individual emitters results in high RF current handling capability, high power gain, low base resistance and low output capacitance. These transistors are intended for Class A, B, or C amplifier, oscillator or frequency multiplier circuits and are specifically designed for operation in the VHF-UHF region.

| Device | Package |
|---|---|
| 2N3375 | TO 60 |
| 2N3632 | TO 60 |
| 2N3733 | TO 60 |

## ABSOLUTE MAXIMUM RATINGS ($T_{case}$ = 25°C)

| Symbol | Parameter | 2N3375 | 2N3632 | 2N3733 | Unit |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector to Base Voltage | 65 | 65 | 65 | V |
| $V_{CEO}$ | Collector to Emitter Voltage | 40 | 40 | 40 | V |
| $V_{EBO}$ | Emitter to Base Voltage | 4.0 | 4.0 | 4.0 | V |
| $I_{C\ (max)}$ | Continuous Collector Current | 1.5 | 3.0 | 3.0 | A |
| $P_D$ | Total Dissipation at 25°C Stud | 11.6 | 23.0 | 23.0 | V |
| $T_j$ | Junction Temperature | 200 | 200 | 200 | °C |
| $T_{stg}$ | Storage Temperature | – 65 to 150 | – 65 to 150 | – 65 to 150 | °C |

| | | 2N3375 | 2N3632 | 2N3733 | |
|---|---|---|---|---|---|
| $R_{th(j-c)}$ | Junction-case Thermal Resistance | 15.0 | 7.6 | 7.6 | °C |

## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25°C)

STATIC

| Symbol | Test Conditions | | 2N3375 | | | 2N3632 | | | 2N3733 | | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| $BV_{CBO}$ | $I_C$ = 0.5mA | $V_{BE}$ = 0 | 65 | | | 65 | | | 65 | | | V |
| $BV_{CEO}$ | $I_C$ = 200mA | $I_B$ = 0 | 40 | | | 40 | | | 40 | | | V |
| $BV_{EBO}$ | $I_E$ = 0.25mA | $I_C$ = 0 | 4 | ($I_E$ = 0.1mA) | | 4 | | | 4 | | | V |
| $I_{CEO}$ | $V_{CB}$ = 30V | $I_E$ = 0 | | | 0.1 | | | 0.25 | | | 0.25 | mA |
| $H_{FE}$ | $V_{CE}$ = 5V | $I_C$ = 250mA | 10 | | | 5 | ($I_C$ = 1A) | | 10 | | | |

DYNAMIC

| Symbol | Test Conditions | | 2N3375 | | | 2N3632 | | | 2N3733 | | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| $P_O$ | F = 175MHz Class C | $V_{CE}$ = 28V | | | | 13.5 | | | | | | W |
| $P_O$ | F = 400MHz | $V_{CC}$ = 28V | 3 | | | | | | 10 | | | W |
| $G_P$ | F = 175MHz | $V_{CC}$ = 28V | | | | 5.8 | | | | | | dB |
| $G_P$ | F = 400MHz | $V_{CC}$ = 28V | 4.8 | | | | | | 4.0 | | | dB |
| $\eta_C$ | F = 175MHz | $V_{CC}$ = 28V | | | | 70 | | | | | | % |
| $\eta_C$ | F = 400MHz | $V_{CC}$ = 28V | 40 | | | | | | 45 | | | % |
| $C_{OB}$ | F = 1MHz | $V_{CB}$ = 30V | | | 10 | | | 20 | | | 20 | pF |