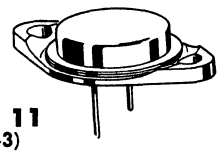
# 2N297A (GERMANIUM)



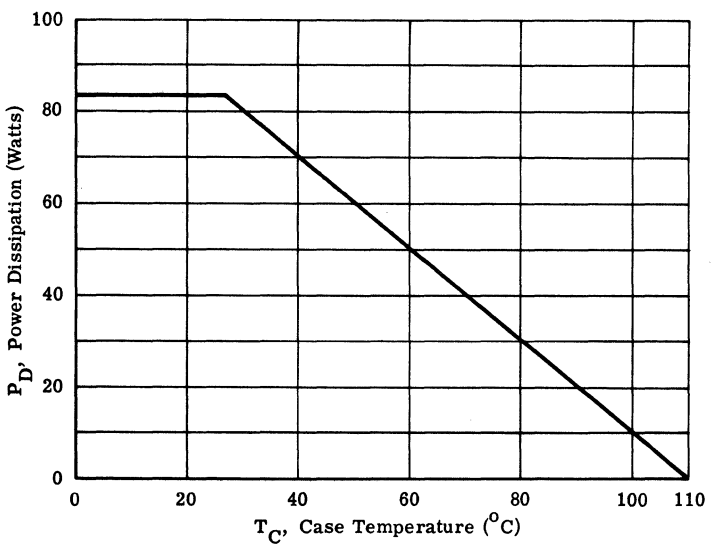
CASE 11
(TO-3)

PNP germanium power transistor for military and industrial power switching and amplifier applications. Operating temperature range and collector dissipation rating exceeds military specifications.

## MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CB}$ | 60 | Vdc |
| Collector-Emitter Voltage | $V_{CES}$ | 50 | Vdc |
| Collector-Emitter Voltage | $V_{CEO}$ | 40 | Vdc |
| Emitter-Base Voltage | $V_{EB}$ | 40 | Vdc |
| Emitter Current | $I_E$ | 5.0 | Amp |
| Operating Temperature Range | $T_J$ | −65 to +110 | °C |
| Collector Dissipation at 25°C Case Temperature ($\theta_{JC}$ = 1 °C/W max) | $P_D$ | 85 | Watts |

**POWER-TEMPERATURE DERATING CURVE**



## 2N297 A (continued)

## ELECTRICAL CHARACTERISTICS ($T_C$ = 25°C unless otherwise noted)

| Characteristic | Symbol | Minimum | Maximum | Unit |
|---|---|---|---|---|
| DC Current Transfer Ratio<br>$V_{CE}$ = 2 V<br>$I_C$ = 0.5 Adc | $h_{FE}$ | 40 | 100 | — |
| DC Current Transfer Ratio<br>$V_{CE}$ = 2 V<br>$I_C$ = 2.0 Adc | $h_{FE}$ | 20 | — | — |
| Small-Signal Current Transfer Ratio Cutoff Frequency<br>$V_{CE}$ = 14 Vdc<br>$I_C$ = 0.5 Amp | $f_{\alpha e}$ | 5.0 | — | kHz |
| Emitter-Base Cutoff Current<br>$V_{EB}$ = 40 Vdc<br>$I_C$ = 0 | $I_{EBO}$ | — | 3.0 | mAdc |
| Collector-Base Cutoff Current<br>$V_{CB}$ = 2 Vdc<br>$I_E$ = 0 | $I_{CBO}$ | — | 200 | μAdc |
| Collector-Base Cutoff Current<br>$V_{CB}$ = 60 Vdc<br>$I_E$ = 0 | $I_{CBO}$ | — | 3.0 | mAdc |
| Base Current<br>$V_{CE}$ = 2 Vdc<br>$I_C$ = 0.5 Adc | $I_B$ | 5.0 | 12.5 | mAdc |
| Base Current<br>$V_{CE}$ = 2 Vdc<br>$I_C$ = 2 Adc | $I_B$ | — | 100 | mAdc |
| Emitter-Base Voltage<br>$V_{CE}$ = 2 Vdc<br>$I_C$ = 2 Adc | $V_{EB}$ | — | 1.5 | Vdc |
| Floating Potential<br>$V_{CB}$ = 60 Vdc<br>(Voltmeter input resistance = 10 Megohm min) | $V_{fl}$ | | 0.18 | Vdc |
| Collector-Emitter Saturation Voltage<br>$I_C$ = 2 Adc<br>$I_B$ = 200 mAdc | $V_{CE(SAT)}$ | | 1.0 | Vdc |
| Collector-Emitter Voltage<br>$I_C$ = 300 mAdc<br>$I_B$ = 0 | $BV_{CEO}$ | 40 | — | Vdc |
| Collector-Emitter Voltage<br>$I_C$ = 300 mAdc<br>$V_{EB}$ = 0 | $BV_{CES}$ | 50 | — | Vdc |
| High-Temperature Operation<br>$T_C$ = +71°C min<br>Collector Cutoff Current<br>$V_{CB}$ = 30 Vdc<br>$I_E$ = 0 | $I_{CBO}$ | — | 6.0 | mAdc |

## 2N307 (GERMANIUM)

## 2N307 A

For Specifications, See 2N242 Data.