

2N1842A

MAXIMUM ALLOWABLE RATINGS

| TYPE | PEAK FORWARD BLOCKING VOLTAGE, V_{FOM} $T_c = -40^\circ\text{C} + 100^\circ\text{C}$ | PEAK FORWARD VOLTAGE, PFV ⁽¹⁾ $T_c = -40^\circ\text{C} + 100^\circ\text{C}$ | REPETITIVE PEAK REVERSE VOLTAGE, V_{RPM} (REP) ⁽²⁾ $T_c = -40^\circ\text{C} + 100^\circ\text{C}$ | NON-REPETITIVE PEAK REVERSE VOLTAGE (<3 MILLISEC.) V_{RPM} (NON-REP) ⁽²⁾ $T_c = -40^\circ\text{C} + 100^\circ\text{C}$ |
|---------|---|---|--|---|
| 2N1842A | 25 Volts* | 35 Volts | 25 Volts* | 35 Volts* |

⁽¹⁾ Values apply for zero or negative gate voltage only. Maximum case to ambient thermal resistance for which maximum V_{FOM} and V_{RPM} ratings apply equals 11°C per watt.

⁽²⁾ Cells with higher PFV ratings are available upon request.

RMS Forward Current, On-State _____ 16 amperes (all conduction angles)
Average Forward Current, On-State _____ Depends on conduction angle (see Charts 3 and 4)
Rate of Rise of Forward Current, On-State, di/dt _____ 10 amperes per microsecond
Peak One-cycle Surge Forward Current, I_{FM} (surge) _____ 125 amperes*
 I^2t (for fusing) _____ 40 ampere² seconds (for times ≥ 1.5 milliseconds)
Peak Gate Power Dissipation, P_{GM} _____ 5 watts*
Average Gate Power Dissipation, P_G (AV) _____ 0.5 watt*
Peak Forward Gate Voltage, V_{GFM} _____ 10 volts*
Peak Reverse Gate Voltage, V_{GRM} _____ 5 volts*
Storage Temperature, T_{stg} _____ -40°C to $+125^\circ\text{C}$ *
Operating Temperature, T_j _____ -40°C to $+100^\circ\text{C}$ *
Stud Torque _____ 30 lb-in (35 kg-cm)

*Indicates Data included on JEDEC type number registration.

CHARACTERISTICS

| TEST | SYMBOL | MIN. | MAX. | UNITS | TEST CONDITIONS |
|--|----------------------------|------|-------|------------------------------|--|
| PEAK REVERSE OR FORWARD BLOCKING CURRENT† | I_{RPM} OF I_{FPM} | — | 45.0 | mA | $T_c = -40^\circ\text{C}$ to $+100^\circ\text{C}$ $V_{RPM} = V_{FOM} = 25\text{V Peak}$ |
| FULL CYCLE AVG. REVERSE OR FORWARD BLOCKING CURRENT† | $I_{R(AV)}$ OF $I_{F(AV)}$ | — | 22.5* | mA | $T_c = +85^\circ\text{C}$, $I_o = 10\text{A}$ 180° Conduction Angle $V_{RPM} = V_{FPM} = 25\text{V Peak}$ |
| GATE TRIGGER CURRENT | I_{GT} | — | 80 | mAdc | $T_c = +25^\circ\text{C}$, $V_{FK} = 12\text{Vdc}$, $R_L = 50$ ohms |
| GATE TRIGGER VOLTAGE | V_{GT} | — | 3.5* | Vdc | $T_c = -40^\circ\text{C}$, $V_{FK} = 12\text{Vdc}$, $R_L = 50$ ohms |
| PEAK ON-VOLTAGE | V_{FM} | — | 2.9 | V | $T_c = +100^\circ\text{C}$, $V_{FK} = \text{Rated } V_{FOM}$, $R_L = 1000$ ohms |
| EFFECTIVE THERMAL RESISTANCE (DC) | θ_{j-c} | — | 2.5 | $^\circ\text{C}/\text{watt}$ | $T_c = +25^\circ\text{C}$, $I_{FM} = 50\text{A Peak}$, 1 millisecond wide pulse |

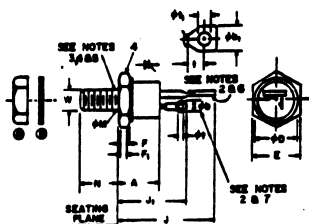
†Values apply for zero or negative gate voltage only. Maximum case to ambient thermal resistance for which maximum V_{FOM} and V_{RPM} ratings apply equals $11^\circ\text{C}/\text{watt}$.

*Indicates data included on JEDEC type number registration.

OUTLINE DRAWING

- NOTES:
1. Complete threads to extend to within 2/32" of mating plane. Diameter of unthreaded portion .140" (A-22400) Maximum. 22° (15.4944) chamfer.
 2. Angular dimension of chamfer to be uniform.
 3. 1/32" (0.03125) chamfer on both ends of threaded portion.
 4. A chamfer for unthreaded on one or both ends of horizontal portion is required.
 5. Case is non-ferrous.
 6. Large terminal is cathode connection.
 7. Small terminal is gate connection.
 8. Seating for available upon request.
 9. 1/32" (0.03125) chamfer, plated, .178 max. dia.
 10. 1/32" (0.03125) chamfer, steel, 1/32" (0.03125) max. dia.

(COMPLIES WITH JEDEC TO-48)



| SYMBOL | INCHES | | MILLIMETERS | | NOTES |
|----------------|--------|------|-------------|-------|-------|
| | MIN. | MAX. | MIN. | MAX. | |
| A | .250 | .260 | 6.35 | 6.60 | 1 |
| B | .115 | .140 | 2.92 | 3.55 | 1 |
| C ₁ | .210 | .260 | 5.33 | 6.60 | 2 |
| D | .250 | .260 | 6.35 | 6.60 | 1 |
| E | .340 | .342 | 8.63 | 8.74 | 1 |
| F | .112 | .200 | 2.87 | 5.08 | 4 |
| F ₁ | .060 | | 1.52 | | |
| J | 1.150 | | 29.27 | | |
| J ₁ | .075 | | 1.91 | | |
| K | .125 | | 3.18 | | |
| GA | | | | | 1 |
| HA | .422 | .463 | 10.72 | 11.81 | |
| HP | .060 | .075 | 1.52 | 1.91 | |
| WP | .125 | .165 | 3.18 | 4.19 | 3 |

