

2N1842A

MAXIMUM ALLOWABLE RATINGS

TYPE	PEAK FORWARD BLOCKING VOLTAGE, V_{FOM} $T_o = -40^{\circ}\text{C} + 100^{\circ}\text{C}$	PEAK FORWARD VOLTAGE, PFV ⁽¹⁾ $T_o = -40^{\circ}\text{C} + 100^{\circ}\text{C}$	REPETITIVE PEAK REVERSE VOLTAGE, V_{RPM} (rep) ⁽²⁾ $T_o = -40^{\circ}\text{C} + 100^{\circ}\text{C}$	NON-REPETITIVE PEAK REVERSE VOLTAGE (<5 MILLISEC.) V_{RPM} (non-rep) ⁽²⁾ $T_o = -40^{\circ}\text{C} + 100^{\circ}\text{C}$
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_{ROM} OF I_{FOM}	—	45.0	mA	$T_o = -40^{\circ}\text{C}$ to $+100^{\circ}\text{C}$ $V_{RPM} = V_{FOM} = 25\text{V Peak}$
FULL CYCLE AVG. REVERSE OR FORWARD BLOCKING CURRENT†	$I_{RXL(AV)}$ OF $I_{FXL(AV)}$	—	22.5*	mA	$T_o = +35^{\circ}\text{C}$, $I_o = 10\text{A}$ 180° Conduction Angle $V_{RPM} = V_{FXM} = 25\text{V Peak}$
GATE TRIGGER CURRENT	I_{GT}	—	30	mAdc	$T_o = +25^{\circ}\text{C}$, $V_{FK} = 12\text{Vdc}$, $R_L = 50$ ohms $T_o = -40^{\circ}\text{C}$, $V_{FK} = 12\text{Vdc}$, $R_L = 50$ ohms
GATE TRIGGER VOLTAGE	V_{GT}	—	3.5*	Vdc	$T_o = 40^{\circ}\text{C}$ to $+100^{\circ}\text{C}$, $V_{FK} = 12\text{Vdc}$, $R_L = 50$ ohms $T_o = +100^{\circ}\text{C}$, $V_{FKM} = \text{Rated } V_{FOM}$, $R_L = 1000$ ohms
PEAK ON-VOLTAGE	V_{FM}	—	2.9	V	$T_o = +25^{\circ}\text{C}$, $I_{FM} = 50\text{A Peak}$, 1-millisecond wide pulse
EFFECTIVE THERMAL RESISTANCE (DC)	θ_{1-0}	—	2.5	°C/watt	

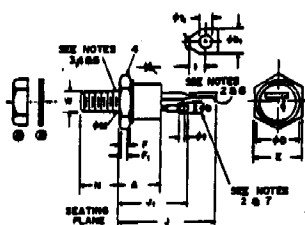
†Values apply for zero or negative gate voltage only. Maximum case to ambient thermal resistance for which maximum V_{FOM} and V_{RPM} ratings apply equals 11°C/watt.

*Indicates data included on JEDEC type number registration.

OUTLINE DRAWING

- NOTES:
1. Connector studs to extend to within 2% tolerance of mating plate. Diameter of mounting studs: .118" (3.00mm) diam. max. 120° fillet transition.
 2. Angular orientation of stud is not to be controlled.
 3. 4-20 UNF-2A, aluminum stud (diameter of stud threads shall be basic with allowance of .0005" (0.0127mm) maximum and .0005" (0.0127mm) minimum) reference case mount connector for field and Service 100V, Handbook 708.1927, P1.
 4. A dielectric seal must be used on both ends of horizontal stud to seal.
 5. Case is made of aluminum.
 6. Leads are made of copper.
 7. Studs are to be spot annealed.
 8. Lead spacing is to be as shown.
 9. Lead spacing for available space is shown.
 10. 4-20 UNF-2A, Al. plated, .178 min. dia.
 11. See 100V Inductor, 100V, 74, plotted, 223 min. dia.

(COMPLIES WITH JEDEC TO-48)



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	.330	.368	8.26	9.35	
B	.115	.140	2.92	3.54	1
C	.210	.220	5.33	5.59	2
D	—	.154	—	3.91	
E	.341	.362	8.68	9.23	
F	.112	.200	2.87	5.08	4
G	.260	—	6.60	—	
H	—	1.190	—	30.23	
J ₁	—	.075	—	1.91	
J ₂	—	—	—	25.25	
K	.120	—	3.05	—	
L	—	.450	—	11.43	1
M	.040	.070	1.02	1.78	
N	.125	.162	3.18	4.13	3

