


**2N2060,A
2N2223,A
2N2480,A**



**DUAL
AMPLIFIER TRANSISTOR**
NPN SILICON

MAXIMUM RATINGS

| Rating | Symbol | 2N2060,A 2N2223,A | 2N2480 | 2N2480A | Unit |
|---|-----------------------------------|----------------------|--------|------------------------|-------|
| Collector-Emitter Voltage | V _{CEO} | 60 | 40 | 40 | Vdc |
| Collector-Emitter Voltage | V _{CER} | 80 | — | — | Vdc |
| Collector-Base Voltage | V _{CBO} | 100 | 75 | 80 | Vdc |
| Emitter-Base Voltage | V _{EBO} | 7.0 | 5.0 | 5.0 | Vdc |
| Collector Current — Continuous | I _C | 500 | | | mAdc |
| | | One Die | | All Die Equal Power | |
| Total Device Dissipation @ T _A = 25°C | P _D | 2N2060,A | 0.5 | 0.6 | mW |
| | | 2N2223,A | 0.5 | 0.6 | |
| | | 2N2480,A | 0.3 | 0.6 | |
| | | Derate above 25°C | | | |
| | | 2N2060,A | 2.86 | 3.43 | |
| | | 2N2223,A | 2.86 | 3.43 | |
| | | 2N2480,A | 1.72 | 3.43 | |
| Total Device Dissipation @ T _C = 25°C | P _D | 2N2060,A | 1.5 | 3.0 | Watts |
| | | 2N2223,A | 1.6 | 3.0 | |
| | | 2N2480,A | 1.0 | 2.0 | |
| | | Derate above 25°C | | | |
| | | 2N2060,A | 8.6 | 17.2 | |
| | | 2N2223,A | 9.1 | 11.4 | |
| | | 2N2480,A | 5.7 | 11.4 | |
| Operating and Storage Junction Temperature Range | T _J , T _{stg} | -65 to +200 | | | °C |

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

| Characteristic | Symbol | Min | Max | Unit |
|--|-----------------------|----------------------------------|-----|-------|
| OFF CHARACTERISTICS | | | | |
| Collector-Emitter Breakdown Voltage(1) (I _C = 100 mAdc, R _{BE} ≤ 10 ohms) | V _{CER(sus)} | 80 | — | Vdc |
| Collector-Emitter Sustaining Voltage(1) (I _C = 20 mAdc, I _B = 0) | V _{CEO(sus)} | 2N2480 | 40 | — |
| | | 2N2480A | 40 | — |
| (I _C = 30 mAdc, I _B = 0) | | 2N2060, 2N2060A, 2N2223, 2N2223A | 60 | — |
| Collector-Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0) | V _{(BR)CBO} | 100 | — | Vdc |
| | | 2N2060, 2N2060A, 2N2223, 2N2223A | 75 | — |
| | | 2N2480* | 80 | — |
| | | 2N2480A* | 80 | — |
| Emitter-Base Breakdown Voltage (I _E = 100 μAdc, I _C = 0) | V _{(BR)EBO} | 7.0 | — | Vdc |
| | | 2N2060, 2N2060A, 2N2223, 2N2223A | 5.0 | — |
| | | 2N2480, 2N2480A | 5.0 | — |
| Collector Cutoff Current (V _{CB} = 30 Vdc, I _E = 0, T _A = 150°C) | I _{CBO} | — | 15 | μAdc |
| (V _{CB} = 60 Vdc, I _E = 0) | | 2N2480 | — | 0.050 |
| | | 2N2480A | — | 0.020 |
| (V _{CB} = 80 Vdc, I _E = 0) | | 2N2060, 2N2060A | — | 0.002 |
| | | 2N2223, 2N2223A | — | 0.010 |
| (V _{CB} = 80 Vdc, I _E = 0, T _A = 150°C) | | 2N2060, 2N2060A | — | 10 |
| | | 2N2223, 2N2223A | — | 15 |
| Emitter Cutoff Current (V _{BE} = 5.0 Vdc, I _C = 0) | I _{EBO} | — | 2.0 | nAdc |
| | | 2N2060, 2N2060A | — | 10 |
| | | 2N2223, 2N2223A | — | 50 |
| | | 2N2480 | — | 20 |
| | | 2N2480A | — | 20 |

