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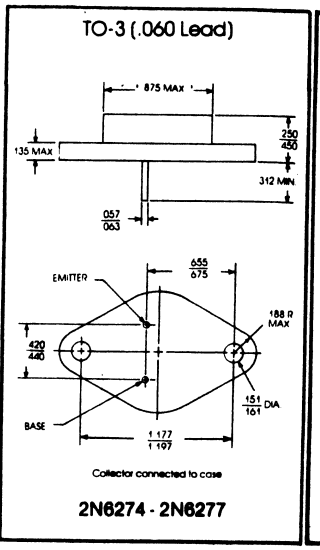
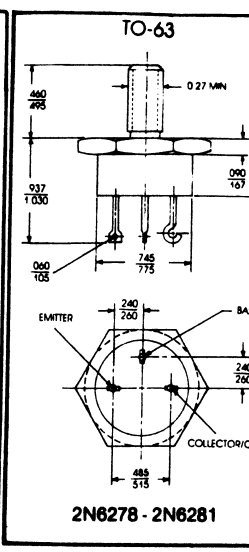
# NPN POWER TRANSISTORS

## 50 AMP SWITCHING

**2N6274 thru 2N6281**

- 250 W. Continuous Power
- VCEO (sus) to 150 V.




### MAXIMUM RATINGS

| PARAMETER | SYMBOL | 2N6274 2N6278 | 2N6275 2N6279 | 2N6276 2N6280 | 2N6277 2N6281 | UNIT |
|---|---|---|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | 100 | 120 | 140 | 150 | V |
| Collector-Base Voltage | $V_{CBO}$ | 120 | 140 | 160 | 180 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 6 | 6 | 6 | 6 | V |
| Collector Current-Continuous | | 50 | 50 | 50 | 50 | A |
| -Peak | | 100 | 100 | 100 | 100 | A |
| Base Current-Continuous | | 20 | 20 | 20 | 20 | A |
| Power Dissipation @$T_C \leq 25°C$ | | 250 | 250 | 250 | 250 | W |
| Linear Derating Factor | | 1.43 | 1.43 | 1.43 | 1.43 | W/°C |
| Storage & Operating Junction Temp. Range | | −65°C to +200°C | | | | |
| Lead Temperature (1/16" from case) | | +235°C for 10 seconds | | | | |

### ELECTRICAL CHARACTERISTICS AT 25°C CASE TEMPERATURE

| PARAMETER | SYMBOL | TEST CONDITIONS | 2N6274 2N6278 | | 2N6275 2N6279 | | 2N6276 2N6280 | | 2N6277 2N6281 | | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | |
| Collector Cutoff Current | $I_{CEX}$ | [1,2] $V_{CE}$ = 120V, $V_{BE}$ = 1.5V | | 1 | | | | | | | mA |
| | | [2] $V_{CE}$ = 140V, $V_{BE}$ = 1.5V | | | | 1 | | | | | mA |
| | | [2] $V_{CE}$ = 160V, $V_{BE}$ = 1.5V | | | | | | 1 | | | mA |
| | | [2] $V_{CE}$ = 180V, $V_{BE}$ = 1.5V | | | | | | | | 1 | mA |
| Collector Cutoff Current | $I_{CEX}$ | [1] $V_{CE}$ = 120V, $V_{BE}$ = 1.5V | | 10 | | | | | | | μA |
| | | $V_{CE}$ = 140V, $V_{BE}$ = 1.5V | | | | 10 | | | | | μA |
| | | $V_{CE}$ = 160V, $V_{BE}$ = 1.5V | | | | | | 10 | | | μA |
| | | $V_{CE}$ = 180V, $V_{BE}$ = 1.5V | | | | | | | | 10 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$ = 6V | | 100 | | 100 | | 100 | | 100 | μA |
| Collector-Emitter Sustain Voltage* | $V_{CEO(sus)}$ | $I_B$ = 0, $I_C$ = 50mA | 100 | | 120 | | 140 | | 150 | | V |
| DC Forward Current Transfer Ratio* | $h_{FE}$ | $V_{CE}$ = 4V, $I_C$ = 50A | 10 | | 10 | | 10 | | 10 | | |
| | | $V_{CE}$ = 4V, $I_C$ = 20A | 30 | 120 | 30 | 120 | 30 | 120 | 30 | 120 | |
| | | $V_{CE}$ = 4V, $I_C$ = 1A | 50 | | 50 | | 50 | | 50 | | |
| Collector-Emitter Saturation Voltage* | $V_{CE(sat)}$ | $I_C$ = 50A, $I_B$ = 10A | | 3 | | 3 | | 3 | | 3 | V |
| | | $I_C$ = 20A, $I_B$ = 2A 2N6274-2N6277 | | 1 | | 1 | | 1 | | 1 | V |
| | | $I_C$ = 20A, $I_B$ = 2A 2N6278-2N6281 | | 1.2 | | 1.2 | | 1.2 | | 1.2 | V |
| Base-Emitter Voltage* | $V_{BE(sat)}$ | $I_C$ = 50A, $I_B$ = 10A | | 3.5 | | 3.5 | | 3.5 | | 3.5 | V |
| | | $I_C$ = 20A, $I_B$ = 2A | | 1.8 | | 1.8 | | 1.8 | | 1.8 | V |
| Base Emitter On Voltage | $V_{BE(on)}$ | $I_C$ = 20A, $V_{CE}$ = 4V | | 1.8 | | 1.8 | | 1.8 | | 1.8 | V |
| Collector Cutoff Current | $I_{CEO}$ | $V_{CE}$ = 50V, $I_B$ = 0 | | 50 | | | | | | | μA |
| | | $V_{CE}$ = 60V, $I_B$ = 0 | | | | 50 | | | | | μA |
| | | $V_{CE}$ = 70V, $I_B$ = 0 | | | | | | 50 | | | μA |
| | | $V_{CE}$ = 75V, $I_B$ = 0 | | | | | | | | 50 | μA |
| Rise Time | $t_r$ | $V_{CC}$ = 80V, $I_C$ = 20A $I_{B1}$ = 2A, $V_{OB}$ = 5V | | .35 | | .35 | | .35 | | .35 | μs |
| Storage Time | $t_s$ | $V_{CC}$ = 80V, $I_C$ = 20A $I_{B1}$ = $I_{B2}$ = 2A | | .80 | | .80 | | .80 | | .80 | μs |
| High Frequency Beta | $h_{fe}$ | $V_{CE}$ = 10V, $I_C$ = 1A, f = 10MHz | 3 | | 3 | | 3 | | 3 | | |
| Common Base Output Capacitance | Cob | $V_{CB}$ = 10V, $I_E$ = 0, f = 0.1MHz | | 600 | | 600 | | 600 | | 600 | pF |

*Pulse Test: Pulse width ≤300 μs; Duty Cycle ≤2%
[1] Emitter diode is reverse biased
2. $T_C$ = 150°C

**Quality Semi-Conductors**