

## NPN SILICON HIGH POWER TRANSISTOR

Qualified per MIL-PRF-19500/262

### Devices

2N1722

2N1724

### Qualified Level

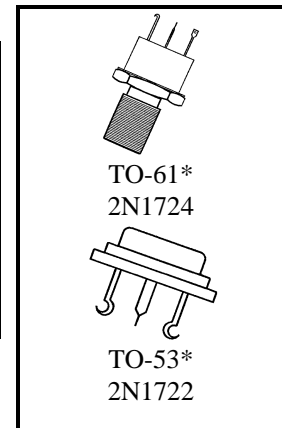
JAN  
JANTX

### MAXIMUM RATINGS

| Ratings                   |                                      | Symbol    | Value       | Units              |
|---------------------------|--------------------------------------|-----------|-------------|--------------------|
| Collector-Emitter Voltage |                                      | $V_{CEO}$ | 80          | Vdc                |
| Collector-Base Voltage    |                                      | $V_{CBO}$ | 175         | Vdc                |
| Emitter-Base Voltage      |                                      | $V_{EBO}$ | 10          | Vdc                |
| Collector Current         |                                      | $I_C$     | 5.0         | Adc                |
| Total Power Dissipation   | @ $T_A = +25^{\circ}\text{C}^{(1)}$  | $P_T$     | 3.0         | W                  |
|                           | @ $T_C = +100^{\circ}\text{C}^{(2)}$ |           | 50          | W                  |
| Temperature Range:        | Operating                            | $T_{OP}$  | 175         | $^{\circ}\text{C}$ |
|                           | Storage Junction                     | $T_{stg}$ | -65 to +200 |                    |

1) Derate linearly 20 mW/ $^{\circ}\text{C}$  for  $T_A$  between  $+25^{\circ}\text{C}$  and  $+175^{\circ}\text{C}$

2) Derate linearly 666 mW/ $^{\circ}\text{C}$  for  $T_C$  between  $+100^{\circ}\text{C}$  and  $+175^{\circ}\text{C}$



\*See Appendix A for  
Package Outline

### ELECTRICAL CHARACTERISTICS

| Characteristics | Symbol | Min. | Max. | Unit |
|-----------------|--------|------|------|------|
|-----------------|--------|------|------|------|

### OFF CHARACTERISTICS

|   |               |    |     |                 |
|---|---------------|----|-----|-----------------|
| Collector-Emitter Breakdown Voltage<br>$I_C = 200 \text{ mAdc}$ | $V_{(BR)CEO}$ | 80 |     | Vdc             |
| Emitter-Base Breakdown Voltage<br>$I_E = 10 \text{ mAdc}$       | $V_{(BR)EBO}$ | 10 |     | Vdc             |
| Collector-Emitter Cutoff Current<br>$V_{CE} = 60 \text{ Vdc}$   | $I_{CES}$     |    | 300 | $\mu\text{Adc}$ |
| Collector-Base Cutoff Current<br>$V_{CB} = 175 \text{ Vdc}$     | $I_{CBO}$     |    | 5.0 | mAdc            |
| Emitter-Base Cutoff Current<br>$V_{EB} = 7.0 \text{ Vdc}$       | $I_{EBO}$     |    | 400 | $\mu\text{Adc}$ |

2N1722, 2N1724 JAN SERIES

**ELECTRICAL CHARACTERISTICS (con't)**

| Characteristics | Symbol | Min. | Max. | Unit |
|-----------------|--------|------|------|------|
|-----------------|--------|------|------|------|

**ON CHARACTERISTICS**

|   |               |                |     |     |
|---|---------------|----------------|-----|-----|
| Forward-Current Transfer Ratio<br>$I_C = 2.0 \text{ Adc}, V_{CE} = 15 \text{ Vdc}$<br>$I_C = 5.0 \text{ Adc}, V_{CE} = 15 \text{ Vdc}$<br>$I_C = 100 \text{ mAdc}, V_{CE} = 15 \text{ Vdc}$ | $h_{FE}$      | 30<br>15<br>30 | 120 |     |
| Collector-Emitter Saturation Voltage<br>$I_C = 2.0 \text{ Adc}, I_B = 200 \text{ mAdc}$   | $V_{CE(sat)}$ |                | 0.6 | Vdc |
| Base-Emitter Saturation Voltage<br>$I_C = 2.0 \text{ Adc}, I_B = 200 \text{ mVdc}$  | $V_{BE(sat)}$ |                | 1.2 | Vdc |

**DYNAMIC CHARACTERISTICS**

|   |            |     |     |    |
|---|------------|-----|-----|----|
| Magnitude of Common Emitter Small-Signal Short-Circuit<br>Forward Current Transfer Ratio<br>$I_C = 500 \text{ mAdc}, V_{CE} = 15 \text{ Vdc}; f = 10 \text{ MHz}$ | $ h_{fe} $ | 1.0 | 5.0 |    |
| Output Capacitance<br>$V_{CB} = 15 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$   | $C_{obo}$  |     | 550 | pF |