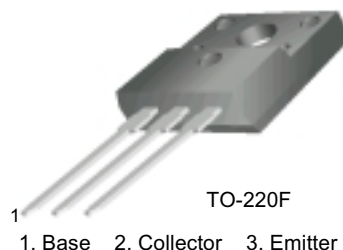


KSD1413

KSD1413

Power Amplifier Applications

- High DC Current Gain
- Low Collector- Emitter Saturation Voltage
- Complement to KSB1023



NPN Silicon Darlington Transistor

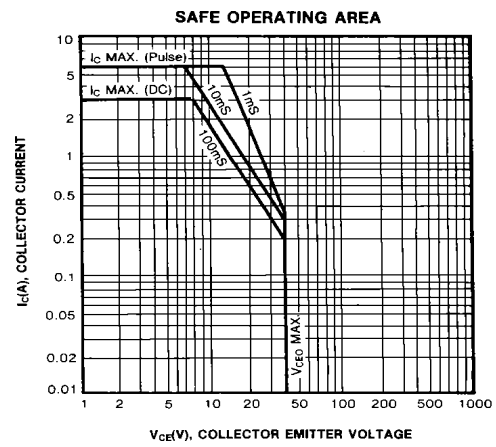
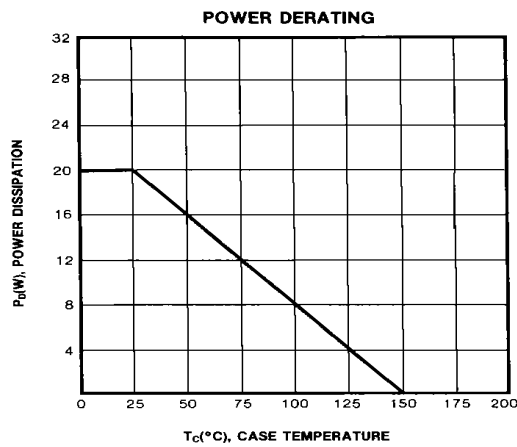
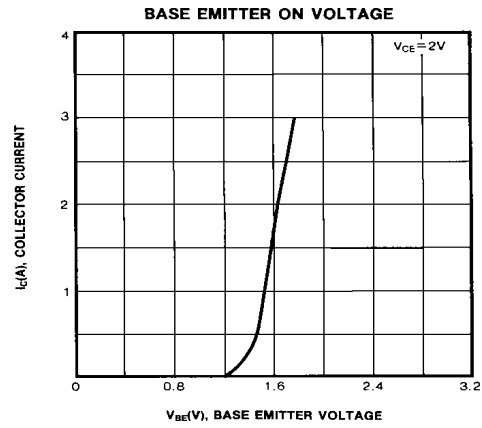
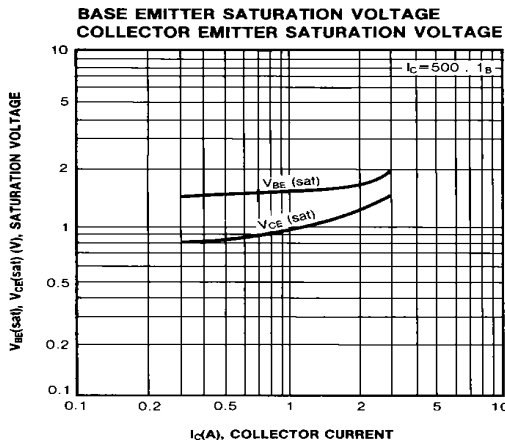
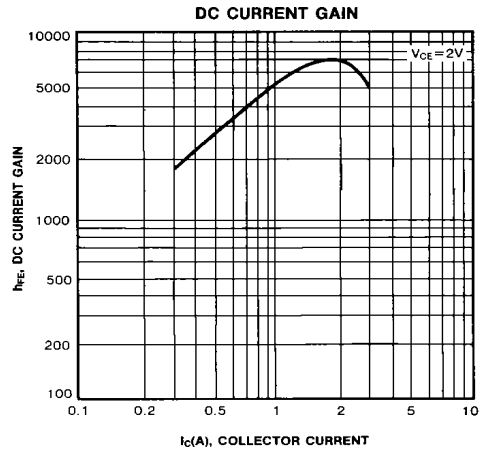
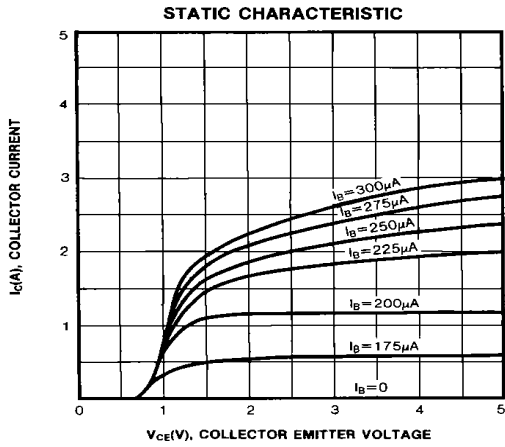
Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage | 60 | V |
| V_{CEO} | Collector-Emitter Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current (DC) | 3 | A |
| I_{CP} | Collector Current (Pulse) | 6 | A |
| I_B | Base Current | 0.3 | A |
| P_C | Collector Dissipation ($T_a=25^\circ\text{C}$) | 2 | W |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 20 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 55 ~ 150 | $^\circ\text{C}$ |

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|------------------------|--------------------------------------|--|--------------|------|------|---------------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 25\text{mA}, I_B = 0$ | 40 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = 60\text{V}, I_E = 0$ | | | 20 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = 5\text{V}, I_C = 0$ | | | 2.5 | mA |
| h_{FE1} h_{FE2} | DC Current Gain | $V_{CE} = 2\text{V}, I_C = 1\text{A}$ $V_{CE} = 2\text{V}, I_C = 3\text{A}$ | 2000 1000 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 2\text{A}, I_B = 4\text{mA}$ | | | 1.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 2\text{A}, I_B = 4\text{mA}$ | | | 2 | V |
| t_{ON} | Turn ON Time | $V_{CC} = 30\text{V}, I_C = 3\text{A}$ | | 0.1 | | μs |
| t_{STG} | Storage Time | $I_{B1} = -I_{B2} = 6\text{mA}$ | | 1 | | μs |
| t_F | Fall Time | $R_L = 10\Omega$ | | 0.2 | | μs |

Typical Characteristics



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