

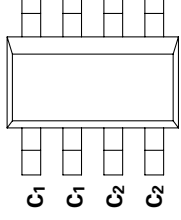


THE DATASHEET OF ZDT6718TA



SM-8 COMPLEMENTARY HIGH GAIN TRANSISTORS

ISSUE 1 - NOVEMBER 1995



PARTMARKING DETAIL - T6718

ABSOLUTE MAXIMUM RATINGS

| PARAMETER |
|---|
| Collector-Base Voltage |
| Collector-Emitter Voltage |
| Emitter-Base Voltage |
| Peak Pulse Current |
| Continuous Collector Current |
| Operating and Storage Temperature Range |

THERMAL CHARACTERISTICS

| PARAMETER |
|--|
| Total Power Dissipation at $T_{amb} = 25^{\circ}C$ Any single die "on" Both die "on" equally |
| Derate above $25^{\circ}C$ * Any single die "on" Both die "on" equally |
| Thermal Resistance - Junction to Ambient Any single die "on" Both die "on" equally |

* The power which can be dissipated on a PCB with copper equal to 2 inches

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NPN TRANSISTOR ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|---------------|-------------------|-------------------|------------------|----------------|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 20 | 100 | | V | $I_C = 100\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 20 | 27 | | V | $I_C = 10\text{mA}^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | 8.3 | | V | $I_E = 100\mu\text{A}$ |
| Collector Cutoff Current | I_{CBO} | | | 100 | nA | $V_{CB} = 16\text{V}$ |
| Emitter Cutoff Current | I_{EBO} | | | 100 | nA | $V_{EB} = 4\text{V}$ |
| Collector Emitter Cutoff Current | I_{CES} | | | 100 | nA | $V_{CES} = 16\text{V}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 7 70 130 | 15 150 200 | mV mV mV | $I_C = 0.1\text{A}, I_B = 10\text{mA}^*$ $I_C = 1\text{A}, I_B = 10\text{mA}^*$ $I_C = 2.5\text{A}, I_B = 50\text{mA}^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | 0.89 | 1.0 | V | $I_C = 2.5\text{A}, I_B = 50\text{mA}^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | 0.79 | 1.0 | V | $I_C = 2.5\text{A}, V_{CE} = 2\text{V}^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 200 300 200 | 400 450 360 | | | $I_C = 10\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 200\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 2\text{A}, V_{CE} = 2\text{V}^*$ $I_C = 6\text{A}, V_{CE} = 2\text{V}^*$ |
| Transition Frequency | f_T | 100 | 140 | | MHz | $I_C = 50\text{mA}, V_{CE} = 10\text{V}$ $f = 100\text{MHz}$ |
| Output Capacitance | C_{obo} | | 23 | 30 | pF | $V_{CB} = 10\text{V}, f = 1\text{MHz}$ |
| Turn-On Time | t_{on} | | 170 | | | $V_{CC} = 10\text{V}, I_C = 1\text{A}$ $I_B = -I_B2 = 10\text{mA}$ |
| Turn-Off Time | t_{off} | | 400 | | | |

*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle \leq 2%
For typical characteristics graphs see SuperSOT FMMT618 datasheet.

PNP TRANSISTOR ELECTRICAL CHARACTERISTICS

| PARAMETER | SYMBOL |
|---------------------------------------|---------------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ |
| Collector Cutoff Current | I_{CBO} |
| Emitter Cutoff Current | I_{EBO} |
| Collector Emitter Cutoff Current | I_{CES} |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ |
| Base-Emitter Turn-On Voltage | $V_{BE(ON)}$ |
| Static Forward Current Transfer Ratio | h_{FE} |
| Transition Frequency | f_T |
| Output Capacitance | C_{obo} |
| Turn-On Time | t_{on} |
| Turn-Off Time | t_{off} |

*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle \leq 2%
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NPN TRANSISTOR ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|---------------|--------------------------|--------------------------|------------------|----------------|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 20 | 100 | | V | $I_C = 100\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 20 | 27 | | V | $I_C = 10\text{mA}^*$ |
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| Collector Emitter Cutoff Current | I_{CES} | | | 100 | nA | $V_{CES} = 16\text{V}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 7 70 130 | 15 150 200 | mV mV mV | $I_C = 0.1\text{A}, I_B = 10\text{mA}^*$ $I_C = 1\text{A}, I_B = 10\text{mA}^*$ $I_C = 2.5\text{A}, I_B = 50\text{mA}^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | 0.89 | 1.0 | V | $I_C = 2.5\text{A}, I_B = 50\text{mA}^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | 0.79 | 1.0 | V | $I_C = 2.5\text{A}, V_{CE} = 2\text{V}^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 200 300 200 100 | 400 450 360 180 | | | $I_C = 10\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 200\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 2\text{A}, V_{CE} = 2\text{V}^*$ $I_C = 6\text{A}, V_{CE} = 2\text{V}^*$ |
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| Turn-On Time | t_{on} | | 170 | | | $V_{CC} = 10\text{V}, I_C = 1\text{A}$ $I_B = -I_B2 = 10\text{mA}$ |
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| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ |
| Base-Emitter Turn-On Voltage | $V_{BE(ON)}$ |
| Static Forward Current Transfer Ratio | h_{FE} |
| Transition Frequency | f_T |
| Output Capacitance | C_{obo} |
| Turn-On Time | t_{on} |
| Turn-Off Time | t_{off} |

*Measured under pulsed conditions. Pulse width=300 μ s. Duty cycle \leq 2%
For typical characteristics graphs see SuperSOT FMMT618 datasheet.

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