

SOT323 NPN SILICON PLANAR RF TRANSISTORS

ISSUE 1 – DECEMBER 1998

ZUMTS17 ZUMTS17H

PARTMARKING DETAIL — ZUMTS17 - T4
ZUMTS17H - T4H



ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|----------------|-------------|-------------|
| Collector-Base Voltage | V_{CBO} | 25 | V |
| Collector-Emitter Voltage | V_{CEO} | 15 | V |
| Emitter-Base Voltage | V_{EBO} | 2.5 | V |
| Peak Pulse Current | I_{CM} | 50 | mA |
| Continuous Collector Current | I_C | 25 | mA |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | P_{tot} | 330 | mW |
| Operating and Storage Temperature Range | $T_j; T_{stg}$ | -55 to +150 | $^{\circ}C$ |

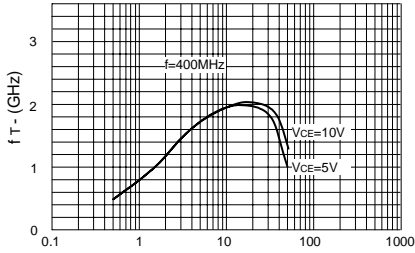
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|-----------|----------|------------|------------|---------------|---|
| Collector Cut-Off Current | I_{CBO} | | | 10 10 | nA μA | $V_{CB}=10V, I_E=0$ $V_{CB}=10V, I_E=0,$ $T_{amb} = 100^{\circ}C$ |
| Static Forward Current Transfer Ratio | h_{FE} | 25 20 | | 150 125 | | $I_C=2.0mA, V_{CE}=1.0V$ $I_C=25mA, V_{CE}=1.0V$ |
| ZUMTS17H | | 70 | | 200 | | $I_C=2.0mA, V_{CE}=1.0V$ |
| Transition Frequency | f_T | | 1.0 1.3 | | GHz GHz | $I_C=2.0mA, V_{CE}=5.0V$ $f=500MHz$ $I_C=25mA, V_{CE}=5.0V$ $f=500MHz$ |
| Feedback Capacitance | $-C_{re}$ | | 0.85 | | pF | $I_C=2.0mA, V_{CE}=5V, f=1MHz$ |
| Collector Capacitance | C_{Tc} | | | 1.5 | pF | $I_E=I_b=0, V_{CB}=10V,$ $f=1MHz$ |
| Emitter Capacitance | C_{Te} | | | 2.0 | pF | $I_C=I_c=0, V_{EB}=5.0V,$ $f=1MHz$ |
| Noise Figure | N | | 4.5 | | dB | $I_C=2.0mA, V_{CE}=5.0V$ $R_S=50\Omega, f=500MHz$ |
| Intermodulation Distortion | d_{im} | | -45 | | dB | $I_C=10mA, V_{CE}=6.0V$ $R_L=37.5\Omega, T_{amb}=25^{\circ}C$ $V_o=100mV$ at $f_p=183MHz$ $V_o=100mV$ at $f_q=200MHz$ measured at $f_{(2q-p)}=217MHz$ |

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device

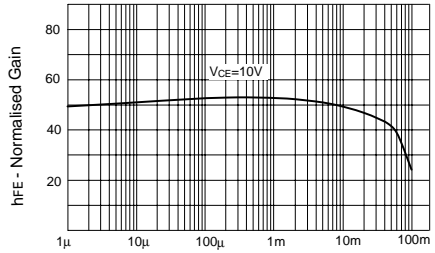
ZUMTS17 ZUMTS17H

TYPICAL CHARACTERISTICS



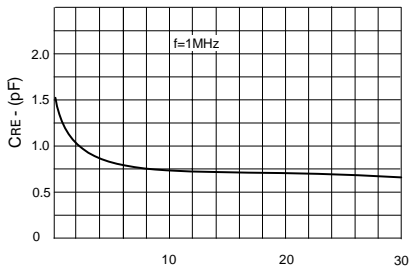
I_C - Collector Current (mA)

f_T v I_C



I_C - Collector Current (A)

hFE v I_C



V_{CE} - (V)

C_{RE} v V_{CE}