



**ZUMTS17N**

**NPN RF TRANSISTOR IN SOT-323**

**Features**

- Lead, Halogen, and Antimony Free/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

**Applications**

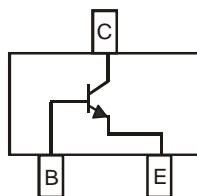
- RF Switch

**Mechanical Data**

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating) Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.006 grams (approximate)



Top View



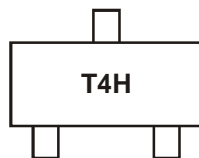
Device Schematic

**Ordering Information** (Note 3)

Part Number	Case	Reel size (inches)	Tape width (mm)	Packaging
ZUMTS17NTA	SOT-323	7	8mm	3000/Tape & Reel

- Notes:
1. No purposefully added lead. Halogen and Antimony free.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



T4H = Product Type Marking Code

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

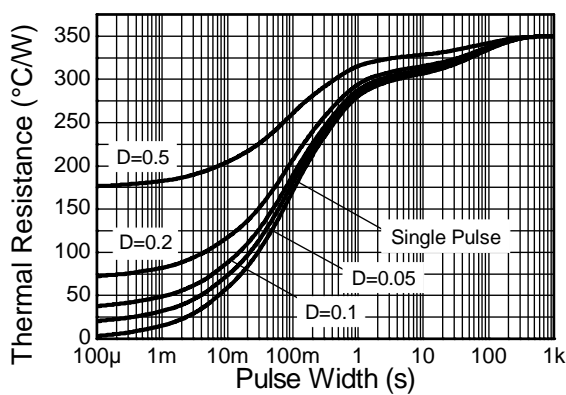
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	20	V
Collector-Emitter Voltage	$V_{CEO}$	11	V
Emitter-Base Voltage	$V_{EBO}$	3	V
Collector Current – Continuous (Note 4)	$I_C$	50	mA

**Thermal Characteristics**

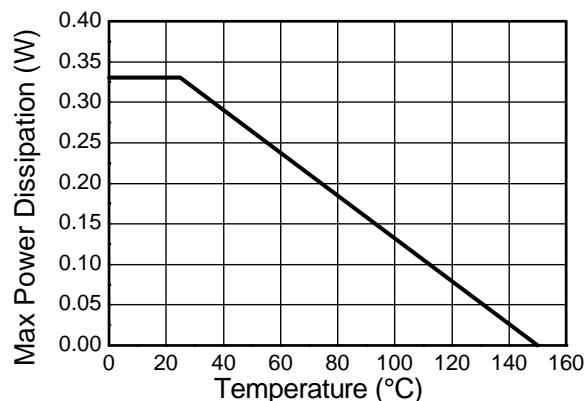
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	$P_D$	330	mW
Thermal Resistance, Junction to Ambient (Note 4)	$R_{\theta JA}$	378	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

Notes: 4. For a device surface mounted on 15mm X 15mm X 1.6mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions

**Thermal Characteristics and Derating information**



**Transient Thermal Impedance**



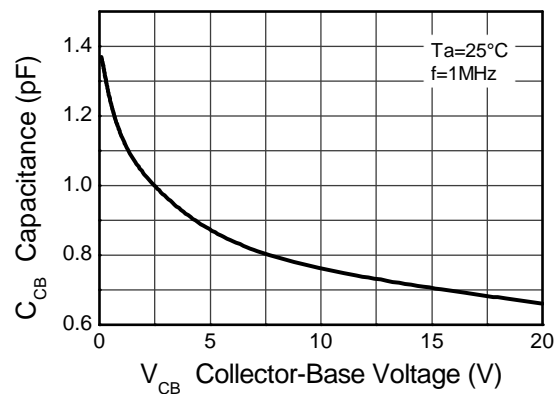
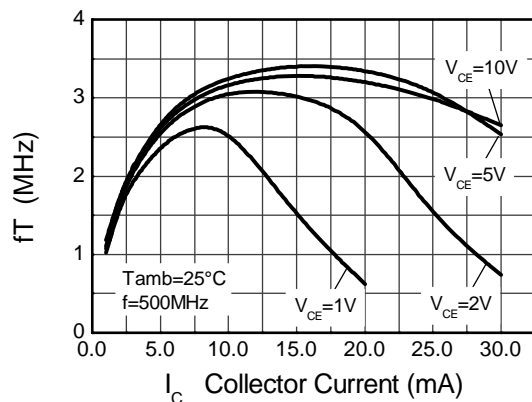
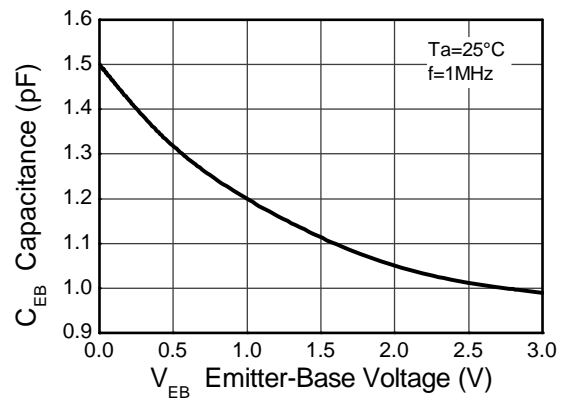
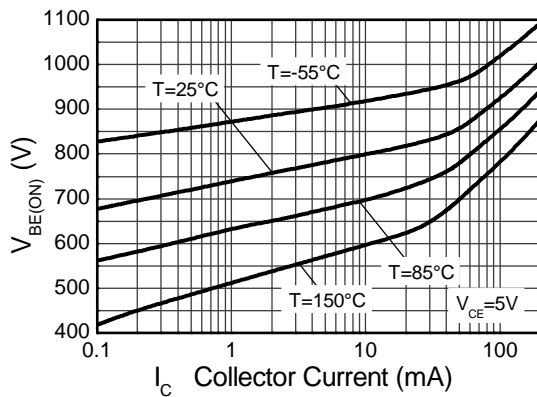
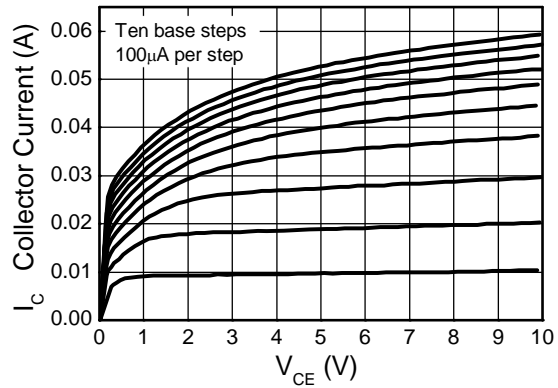
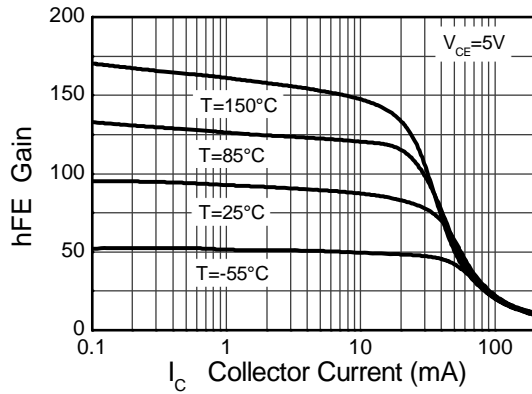
**Derating Curve**

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

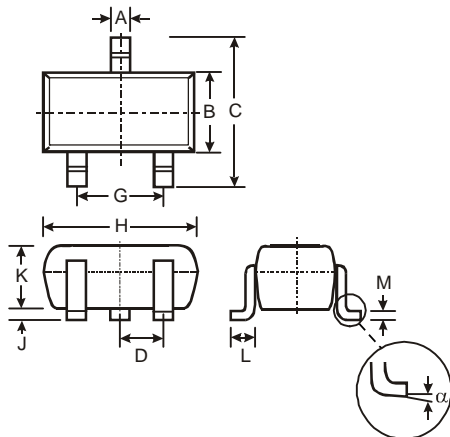
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 5)</b>						
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	20	—	—	V	I <sub>C</sub> = 10μA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	11	—	—	V	I <sub>C</sub> = 1.0mA
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	3	—	—	V	I <sub>E</sub> = 10μA
Collector Cutoff Current	I <sub>CBO</sub>	—	—	0.5	μA	V <sub>CE</sub> = 10V
Emitter Cutoff Current	I <sub>EBO</sub>	—	—	0.5	μA	V <sub>EB</sub> = 2V
DC Current Gain	h <sub>FE</sub>	56	—	180	—	I <sub>C</sub> = 5mA, V <sub>CE</sub> = 10V
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	—	—	0.5	V	I <sub>C</sub> = 10mA, I <sub>B</sub> = 5mA
Current Gain-Bandwidth Product	f <sub>T</sub>	1.4	3.2	—	GHZ	V <sub>CE</sub> = 5V, I <sub>E</sub> = 25mA, f = 500MHz
Output Capacitance	C <sub>ob</sub>	—	0.8	1.5	pF	V <sub>CB</sub> = 10V, f = 1.0MHz

Notes: 5. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

**Typical Characteristics**

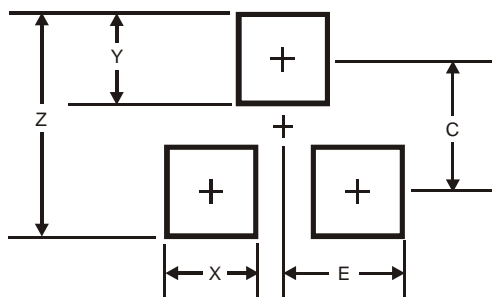


**Package Outline Dimensions**



SOT-323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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