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Lead-free Green

ZUMTS17N

NPN RF TRANSISTOR IN SOT323

Features

- 3.2GHz unity gain for RF switching applications
- **Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

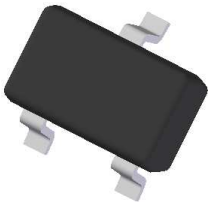
Applications

- RF Switch

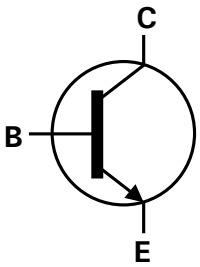
Mechanical Data

- Case: SOT323
- Case Material: molded plastic, "Green" molding compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.006 grams (approximate)

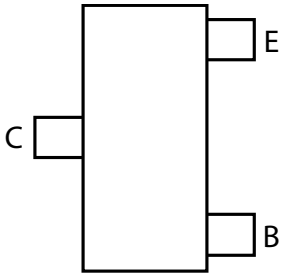
SOT323



Top View



Device symbol



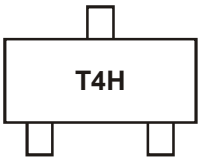
Top View
Pin Out

Ordering Information (Note 4)

Part Number	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZUMTS17NTA	T4H	7	8	3,000

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com for more information about Diodes Incorporated's definitions of Halogen and Antimony free, "Green" and Lead-Free.
3. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com.

Marking Information



T4H = Product Type Marking Code

Maximum Ratings (@T_A = +25°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
Continuous Collector Current	I_C	50	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

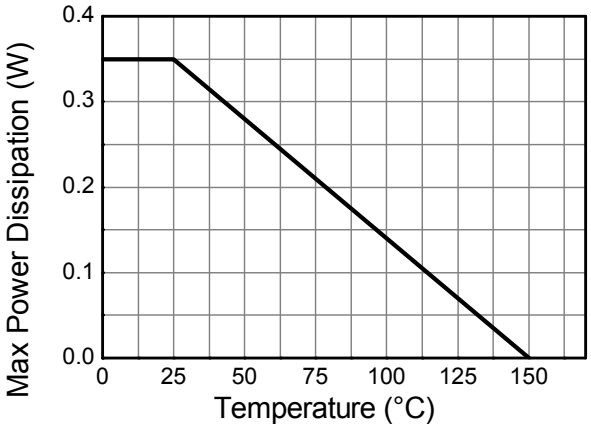
Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	310	mW
	(Note 6)		350	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	403	°C/W
	(Note 6)		357	
Thermal Resistance, Junction to Leads	(Note 7)	$R_{\theta JL}$	350	°C/W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to +150	°C

ESD Ratings (Note 8)

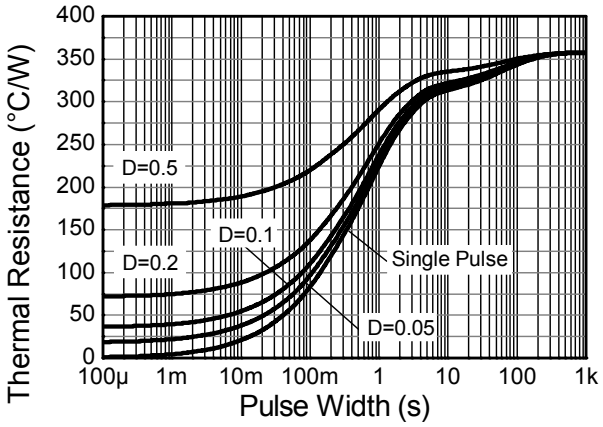
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	2,000	V	2
Electrostatic Discharge - Machine Model	ESD MM	100	V	A

Notes:
5. For the device mounted on minimum recommended pad layout FR4 PCB with high coverage of single sided 1oz copper in still air condition;
6. Same as Note 6, expect the device is mounted on 15mm X 15mm X 1.6mm FR4 PCB
7. Thermal resistance from junction to solder-point (at the end of the leads).
8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

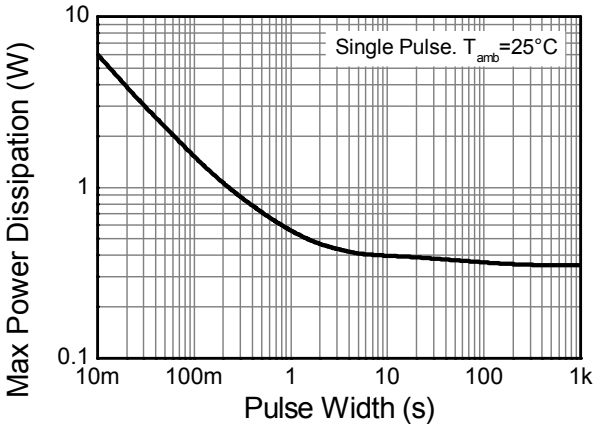
Thermal Characteristics and Derating information



Derating Curve



Transient Thermal Impedance



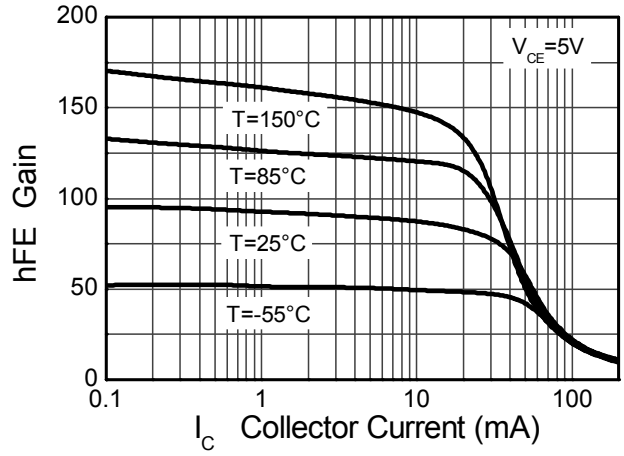
Pulse Power Dissipation

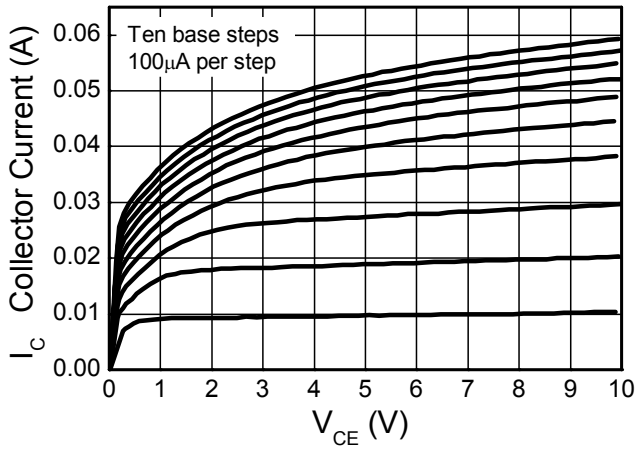
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

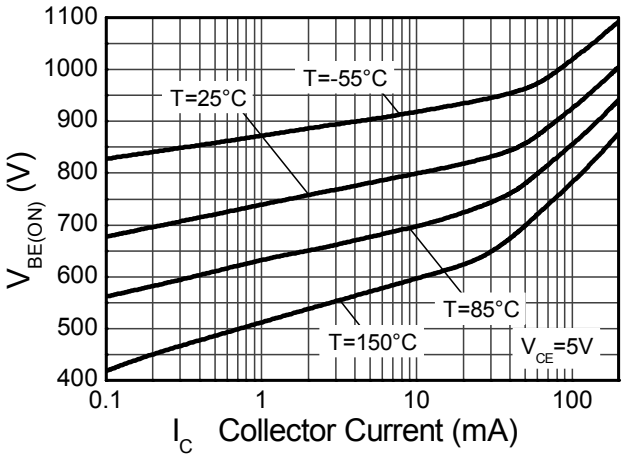
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	20	—	—	V	I_C = 10μA
Collector-Emitter Breakdown Voltage (Note 9)	BV_{CEO}	11	—	—	V	I_C = 1mA
Emitter-Base Breakdown Voltage	BV_{EBO}	3	—	—	V	I_E = 10μA
Collector Cutoff Current	I_{CBO}	—	—	0.5	μA	V_{CE} = 10V
Emitter Cutoff Current	I_{EBO}	—	—	0.5	μA	V_{EB} = 2V
Static Forward Current Transfer Ratio (Note 9)	h_{FE}	56	—	180	—	I_C = 5mA, V_{CE} = 10V
Collector-Emitter Saturation Voltage (Note 9)	$V_{CE(SAT)}$	—	—	0.5	V	I_C = 10mA, I_B = 5mA
Transition Frequency (Note 9)	f_T	1.4	3.2	—	GHz	V_{CE} = 5V, I_E = 25mA, f = 500MHz
Collector Output Capacitance (Note 9)	C_{ob}	—	0.8	1.5	pF	V_{CB} = 10V, f = 1.0MHz

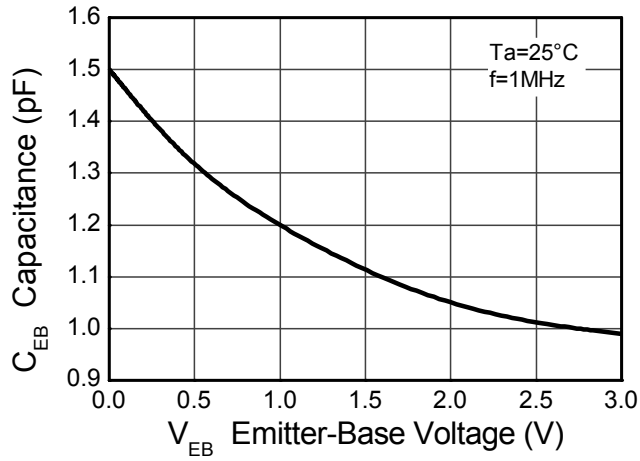
Notes: 9. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

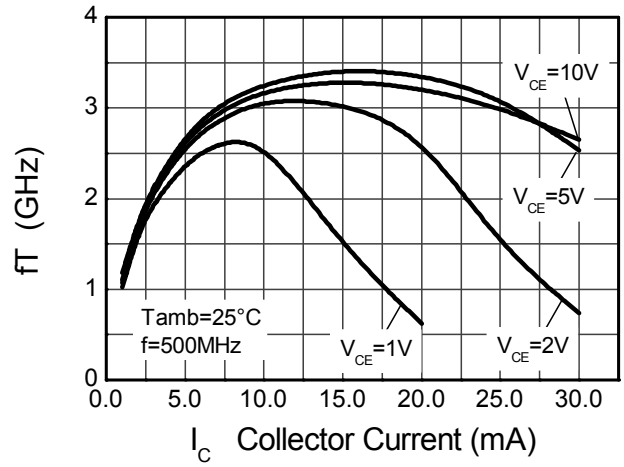
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

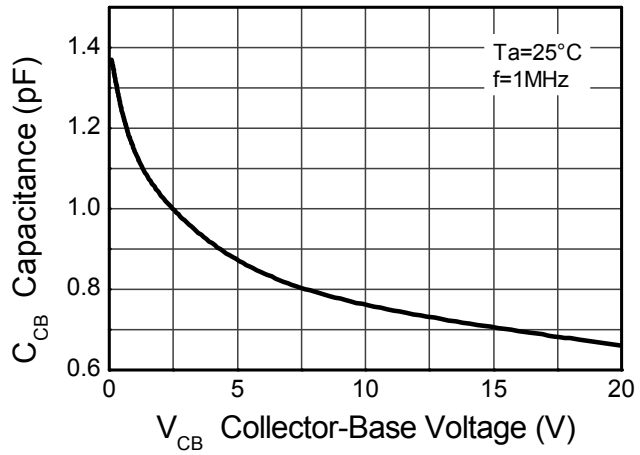






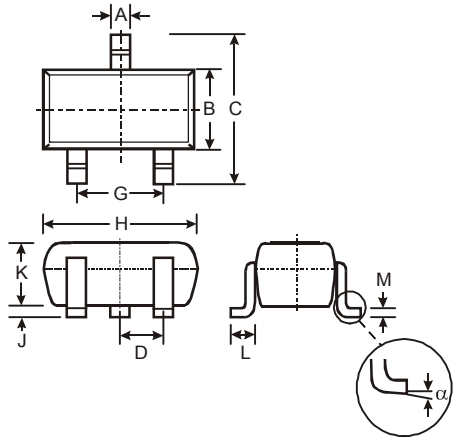






Package Outline Dimensions

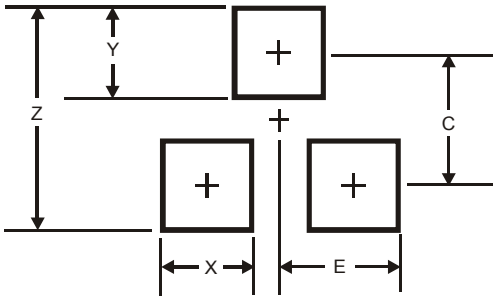
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT323			
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

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



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

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