

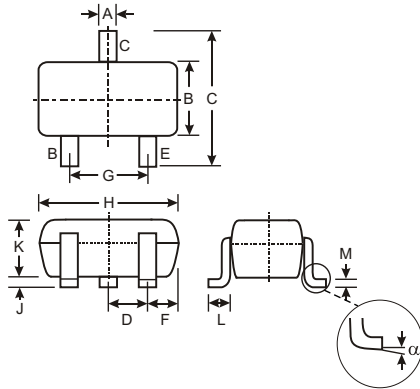
### Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDTA)
- Built-In Biasing Resistor, R2 only

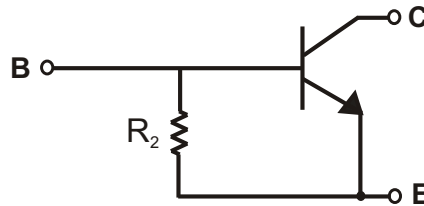
### Mechanical Data

- Case: SOT-323, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: Date Code and Marking Code (See Diagrams & Page 2)
- Weight: 0.006 grams (approx.)
- Ordering Information (See Page 2)

P/N	R2 (NOM)	MARKING
DDTC114GUA	10K	N26
DDTC124GUA	22K	N27
DDTC144GUA	47K	N28
DDTC115GUA	100K	N29



SOT-323		
Dim	Min	Max
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
	0	8
All Dimensions in mm		



SCHMATIC DIAGRAM

### Maximum Ratings @ T<sub>A</sub> = 25 C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub> (Max)	100	mA
Power Dissipation	P <sub>d</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>JA</sub>	625	C/W
Operating and Storage and Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	C

Note: 1. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.

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

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV <sub>CBO</sub>	50			V	I <sub>C</sub> = 50 A
Collector-Emitter Breakdown Voltage		BV <sub>CEO</sub>	50			V	I <sub>C</sub> = 1mA
Emitter-Base Breakdown Voltage		BV <sub>EBO</sub>	5			V	I <sub>E</sub> = 720 A, DDTC114GUA I <sub>E</sub> = 330 A, DDTC124GUA I <sub>E</sub> = 160 A, DDTC144GUA I <sub>E</sub> = 72 A, DDTC115GUA
Collector Cutoff Current		I <sub>CBO</sub>			0.5	A	V <sub>CB</sub> = 50V
Emitter Cutoff Current	DDTC114GUA	I <sub>EBO</sub>	300		580	A	V <sub>EB</sub> = 4V
	DDTC124GUA		140		260		
	DDTC144GUA		65		130		
	DDTC115GUA		30		58		
Collector-Emitter Saturation Voltage		V <sub>CE(sat)</sub>			0.3	V	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA
DC Current Transfer Ratio	DDTC114GUA	h <sub>FE</sub>	30				I <sub>C</sub> = 5mA, V <sub>CE</sub> = 5V
	DDTC124GUA		56				
	DDTC144GUA		68				
	DDTC115GUA		82				
Bleeder Resistor (R <sub>2</sub> ) Tolerance		DR <sub>2</sub>	-30		+30	%	
Gain-Bandwidth Product*		f <sub>T</sub>		250		MHZ	V <sub>CE</sub> = 10V, I <sub>E</sub> = -5mA, f = 100MHZ

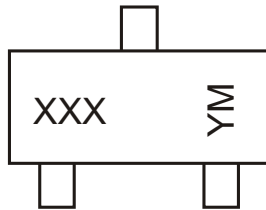
\* Transistor - For Reference Only

## Ordering Information (Note 2)

Device	Packaging	Shipping
DDTC114GUA-7	SOT-323	3000/Tape & Reel
DDTC124GUA-7	SOT-323	3000/Tape & Reel
DDTC144GUA-7	SOT-323	3000/Tape & Reel
DDTC115GUA-7	SOT-323	3000/Tape & Reel

Notes: 2. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



XXX = Product Type Marking Code  
See Sheet 1 Diagrams  
YM = Date Code Marking  
Y = Year ex: N = 2002  
M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009
Code	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

TYPICAL CURVES - DDTc114GUA

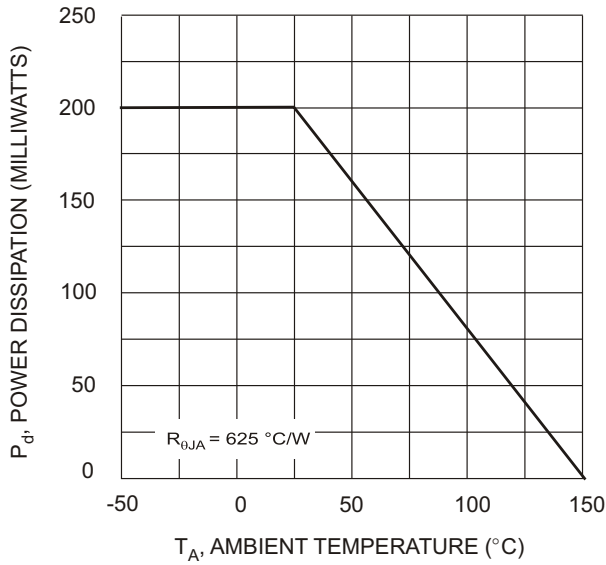


Fig. 1 Derating Curve

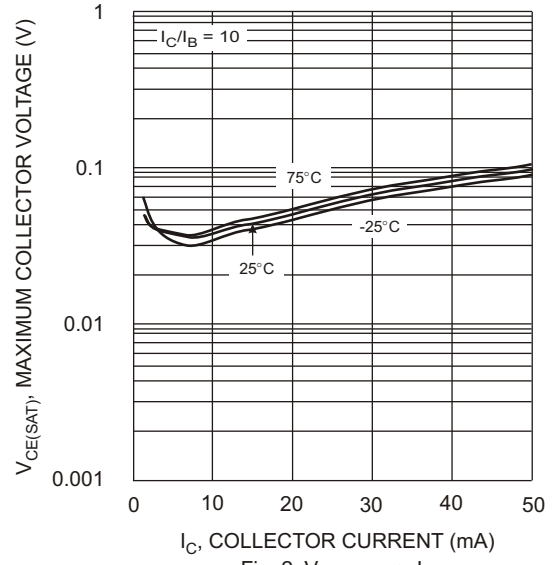


Fig. 2  $V_{CE(SAT)}$  vs.  $I_C$

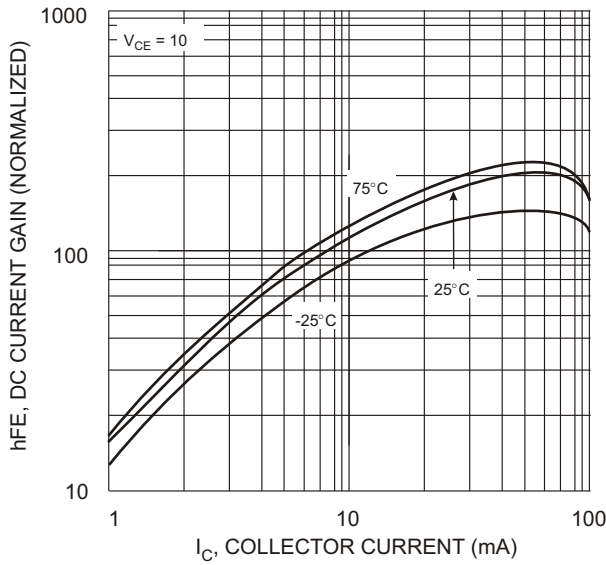


Fig. 3 DC CURRENT GAIN

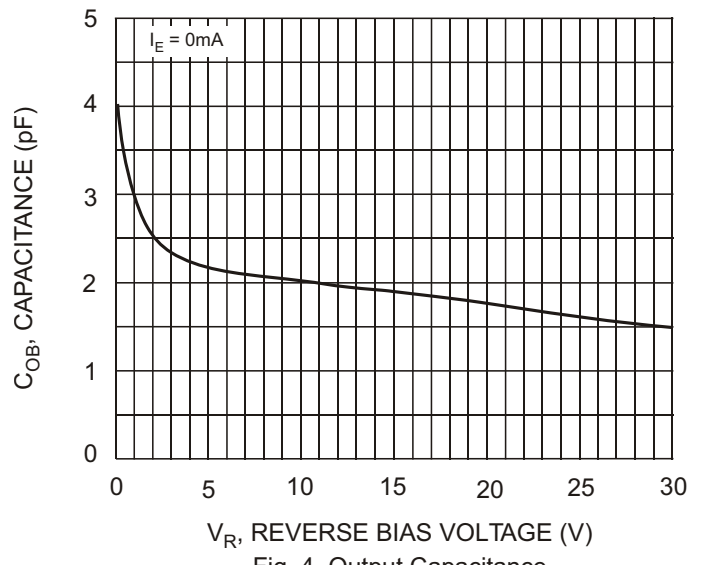


Fig. 4 Output Capacitance

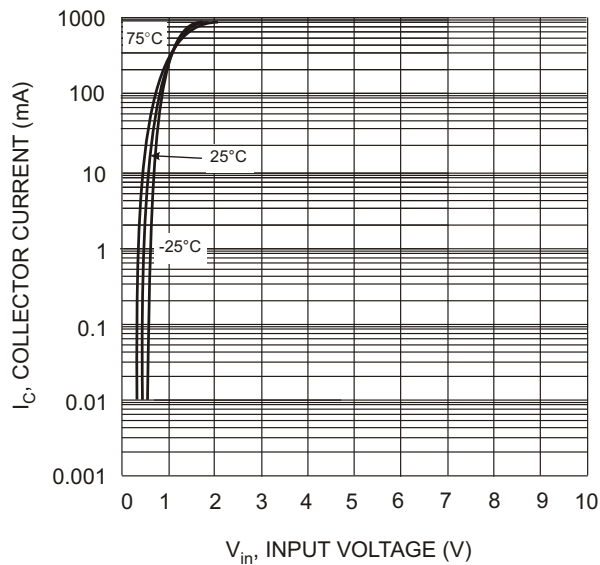


Fig. 5 Collector Current Vs. Input Voltage

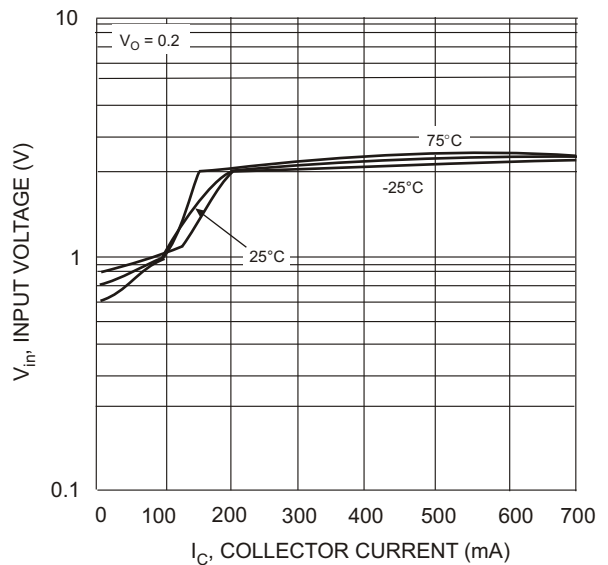


Fig. 6 Input Voltage vs. Collector Current