DDTC (R2-ONLY SERIES) UA

NPN PRE-BIASED SMALL SIGNAL SOT-323 SURFACE MOUNT TRANSISTOR

NEW PRODUCT

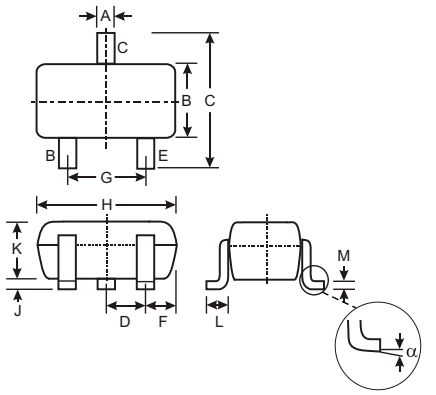
Features

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

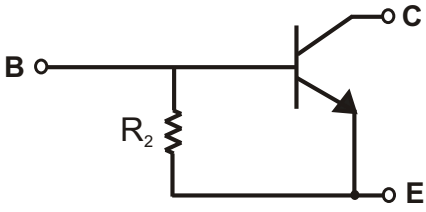
Mechanical Data

- 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		



SCHEMATIC DIAGRAM

Maximum Ratings @ T_A = 25 C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C (Max)	100	mA
Power Dissipation	P_d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R_{JA}	625	C/W
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +150	C

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

NEW PRODUCT

Electrical Characteristics @ T_A = 25 C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV_{CBO}	50			V	I_C = 50 A
Collector-Emitter Breakdown Voltage		BV_{CEO}	50			V	I_C = 1mA
Emitter-Base Breakdown Voltage		BV_{EBO}	5			V	I_E = 720 A, DDTC114GUA I_E = 330 A, DDTC124GUA I_E = 160 A, DDTC144GUA I_E = 72 A, DDTC115GUA
Collector Cutoff Current		I_{CBO}			0.5	A	V_{CB} = 50V
Emitter Cutoff Current	DDTC114GUA DDTC124GUA DDTC144GUA DDTC115GUA	I_{EBO}	300 140 65 30		580 260 130 58	A	V_{EB} = 4V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			0.3	V	I_C = 10mA, I_B = 0.5mA
DC Current Transfer Ratio	DDTC114GUA DDTC124GUA DDTC144GUA DDTC115GUA	h_{FE}	30 56 68 82				I_C = 5mA, V_{CE} = 5V
Bleeder Resistor (R_2) Tolerance		DR_2	-30		+30	%	
Gain-Bandwidth Product*		f_T		250		MHz	V_{CE} = 10V, I_E = -5mA, f = 100MHz

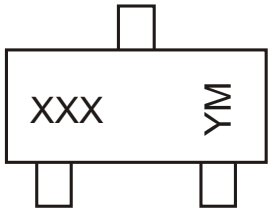
* Transistor - For Reference Only

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

NEW PRODUCT

TYPICAL CURVES - DDTC114GUA

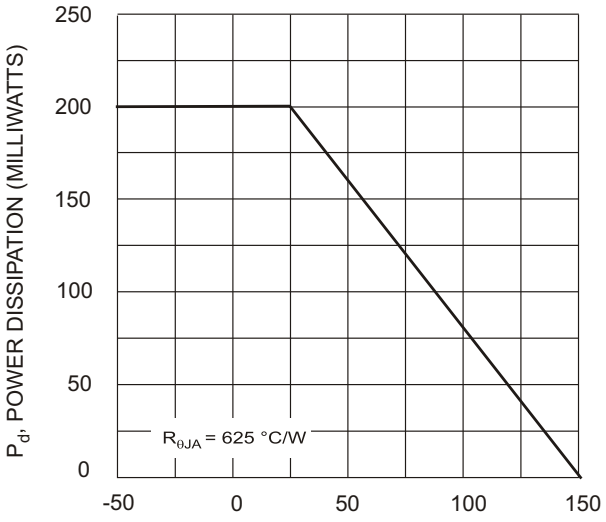


Fig. 1 Derating Curve

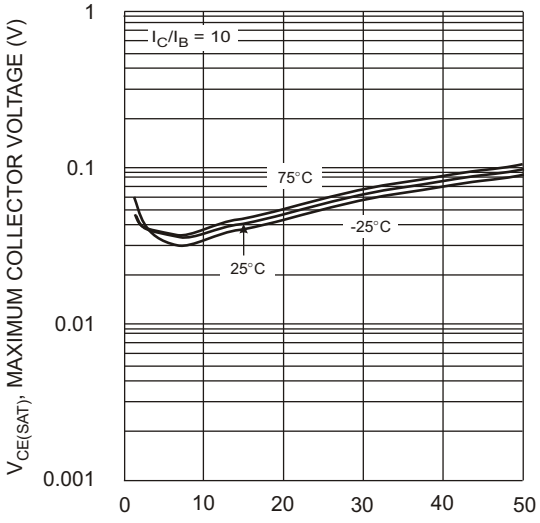


Fig. 2 $V_{CE(SAT)}$ vs. I_C

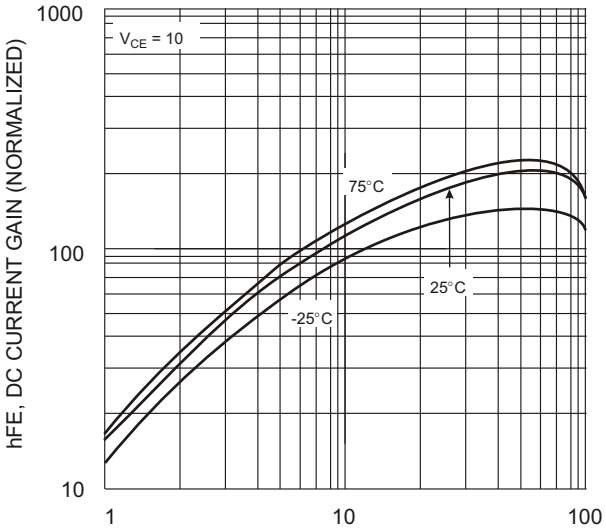


Fig. 3 DC CURRENT GAIN

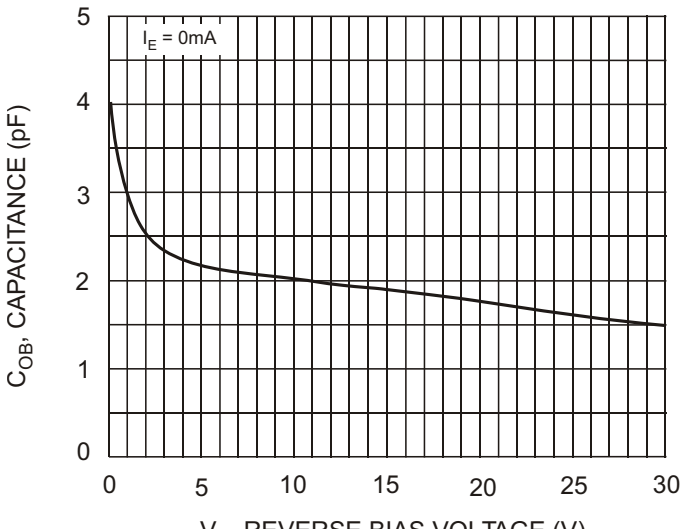


Fig. 4 Output Capacitance

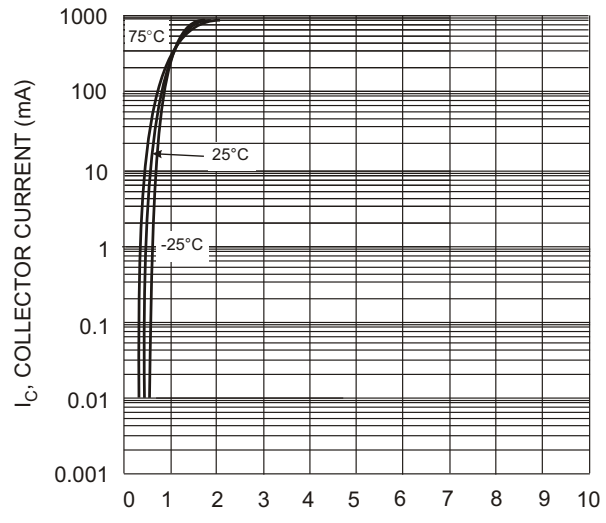


Fig. 5 Collector Current Vs. Input Voltage

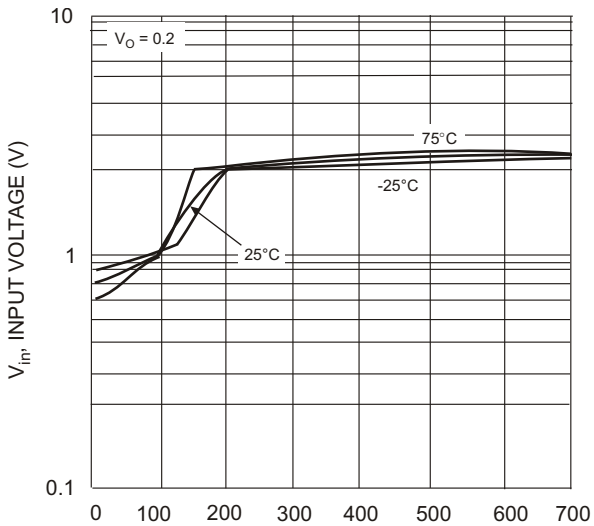


Fig. 6 Input Voltage vs. Collector Current