

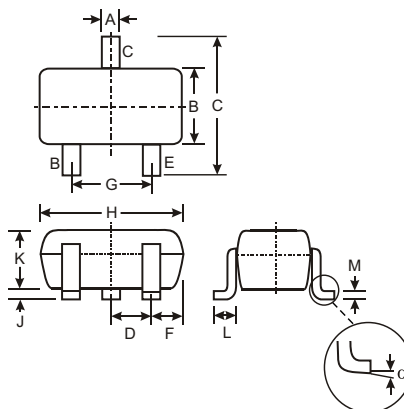
Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistor, R2 only
- Lead Free/RoHS Compliant (Note 2)**
- "Green" Device, Note 3 and 4

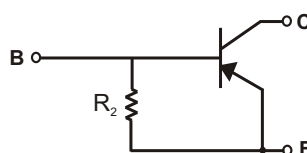
Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking: Date Code and Type Code, See Page 2
- Type Code: See Table Below
- Ordering Information (See Page 2)
- Weight: 0.006 grams (approximate)

P/N	R2 (NOM)	Type Code
DDTA114GUA	10K	P26
DDTA124GUA	22K	P27
DDTA144GUA	47K	P28
DDTA115GUA	100K	P29



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:
- Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.
 - No purposefully added lead.
 - Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 - Product manufactured with date code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

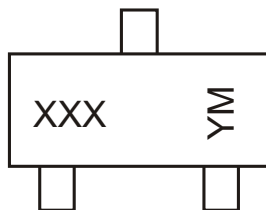
Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV_{CBO}	-50			V	$I_C = -50\text{ A}$
Collector-Emitter Breakdown Voltage		BV_{CEO}	-50			V	$I_C = -1\text{mA}$
Emitter-Base Breakdown Voltage		BV_{EBO}	5			V	$I_E = -720\text{ A}$, DDTA114GUA $I_E = -330\text{ A}$, DDTA124GUA $I_E = -160\text{ A}$, DDTA144GUA $I_E = -72\text{ A}$, DDTA115GUA
Collector Cutoff Current		I_{CBO}			-0.5	A	$V_{CB} = -50\text{V}$
Emitter Cutoff Current	DDTA114GUA DDTA124GUA DDTA144GUA DDTA115GUA	I_{EBO}	-300 -140 -65 -30		-580 -260 -130 -58	A	$V_{EB} = -4\text{V}$
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			-0.3	V	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$
DC Current Transfer Ratio	DDTA114GUA DDTA124GUA DDTA144GUA DDTA115GUA	h_{FE}	30 56 68 82				$I_C = -5\text{mA}$, $V_{CE} = -5\text{V}$
Bleeder Resistor (R_2) Tolerance		R_2	-30		+30	%	
Gain-Bandwidth Product*		f_T		250		MHz	$V_{CE} = -10\text{V}$, $I_E = 5\text{mA}$, $f = 100\text{MHz}$

* Transistor - For Reference Only

Ordering Information (Note 4 & 5)

Device	Packaging	Shipping
DDTA114GUA-7-F	SOT-323	3000/Tape & Reel
DDTA124GUA-7-F	SOT-323	3000/Tape & Reel
DDTA144GUA-7-F	SOT-323	3000/Tape & Reel
DDTA115GUA-7-F	SOT-323	3000/Tape & Reel

- Notes: 4. Product manufactured with date code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information


XXX = Product Type Marking Code, See Table on Page 1
 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

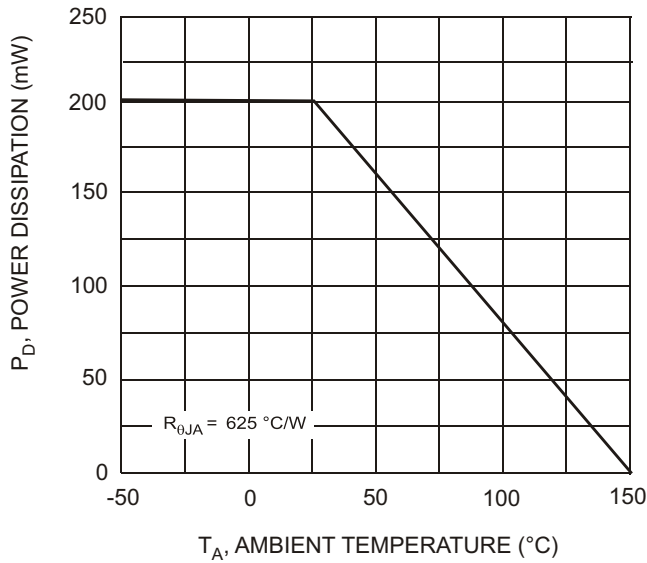
TYPICAL CURVES - DDTA114GUA
NEW PRODUCT


Fig. 1, Derating Curve

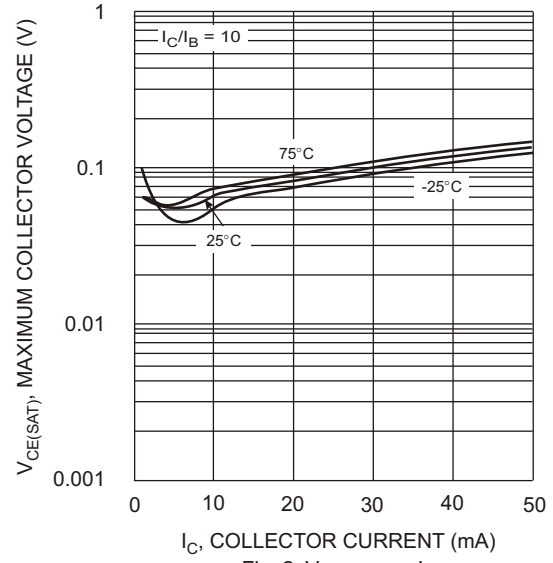
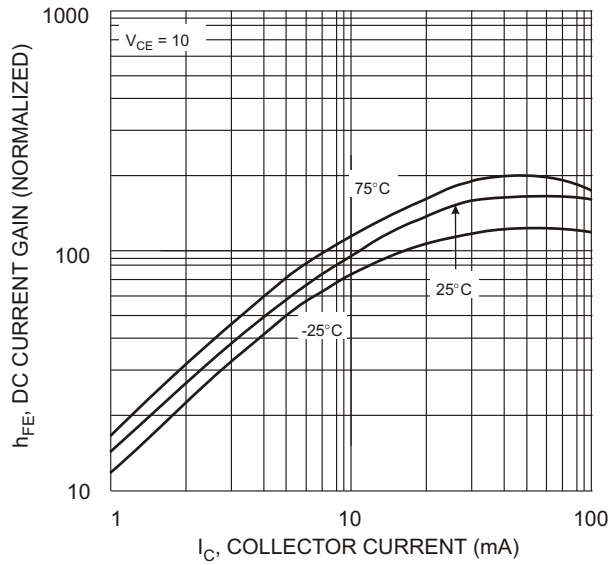

 Fig. 2 $V_{CE(SAT)}$ vs. I_C


Fig. 3 DC CURRENT GAIN

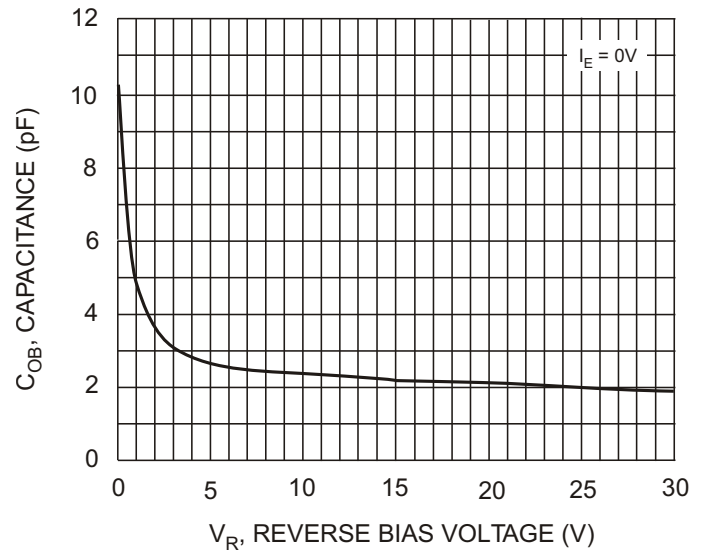


Fig. 4 Output Capacitance

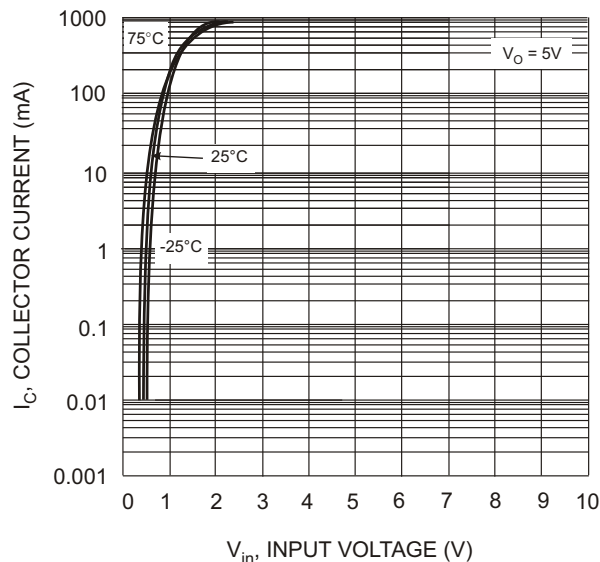


Fig. 5 Collector Current Vs. Input Voltage

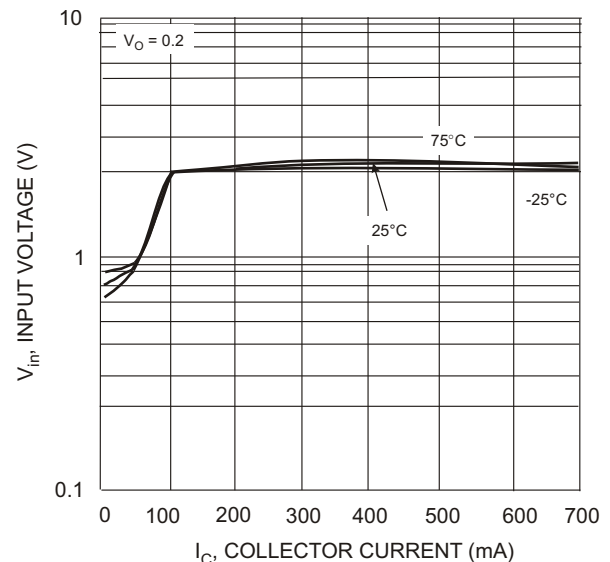


Fig. 6 Input Voltage vs. Collector Current

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