

DDTA (R2-ONLY SERIES) UA

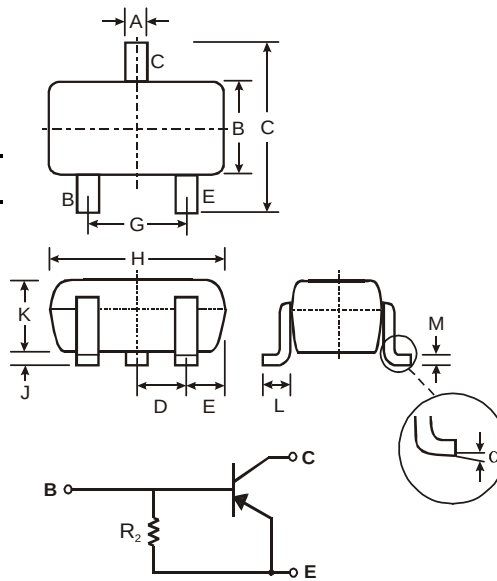
PNP PRE-BIASED SMALL SIGNAL SURFACE MOUNT TRANSISTOR

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 3
- Type Code: See Table Below
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)



SCHEMATIC DIAGRAM

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
α	0°	8°
All Dimensions in mm		

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

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-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 _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +150	°C

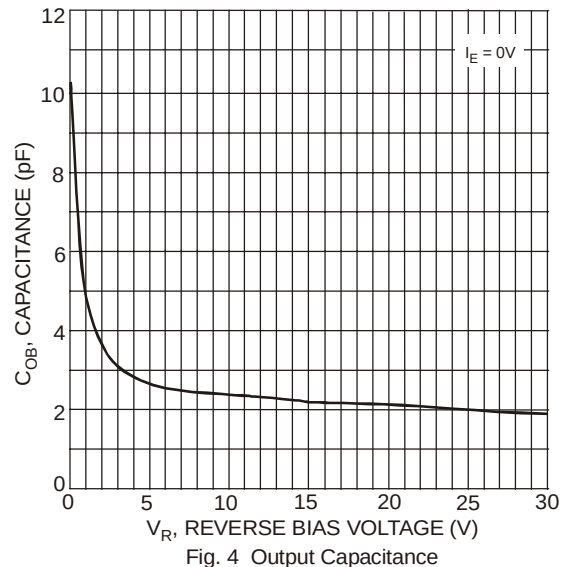
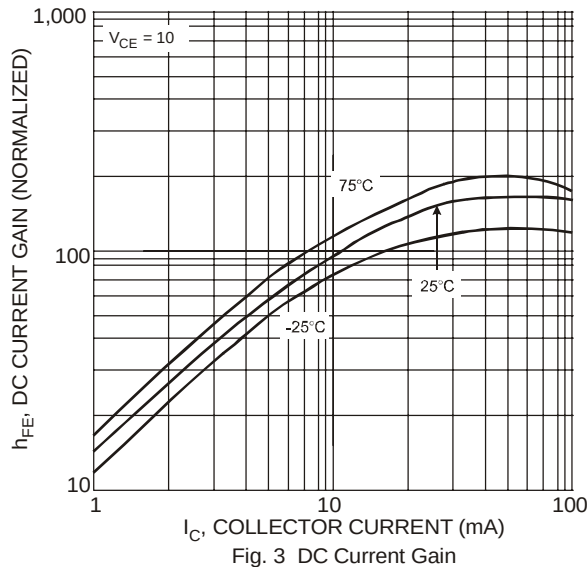
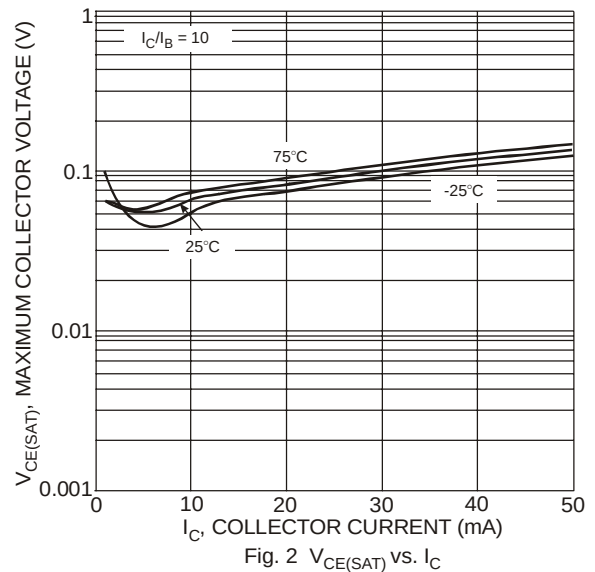
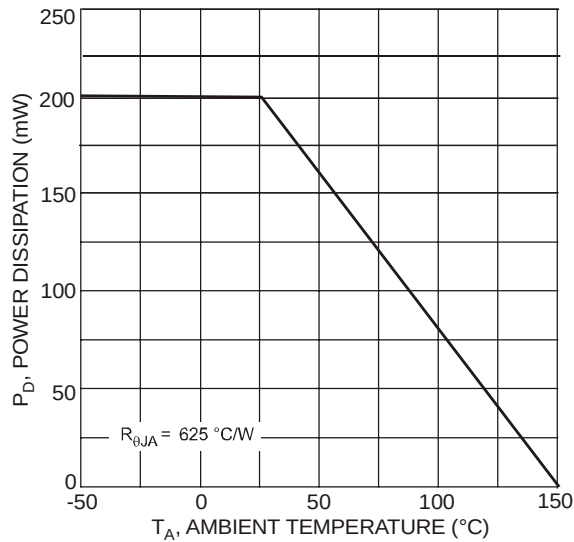
- Notes:
1. Mounted on FR4 PC Board with recommended pad layout as shown on Diodes Inc., suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>
 2. No purposefully added lead.
 3. Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 4. Product manufactured with date code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

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 = -50μA
Collector-Emitter Breakdown Voltage	BV _{CEO}	-50	—	—	V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	5	—	—	V	I _E = -720μA, DDTA114GUA I _E = -330μA, DDTA124GUA I _E = -160μA, DDTA144GUA I _E = -72μA, DDTA115GUA
Collector Cutoff Current	I _{CBO}	—	—	-0.5	μA	V _{CB} = -50V
Emitter Cutoff Current	I _{EBO}	-300 -140 -65 -30	—	-580 -260 -130 -58	μA	V _{EB} = -4V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	—	-0.3	V	I _C = -10mA, I _B = -0.5mA
DC Current Transfer Ratio	h _{FE}	30 56 68 82	—	—	—	I _C = -5mA, V _{CE} = -5V
Bleeder Resistor (R ₂) Tolerance	ΔR ₂	-30	—	+30	%	—
Gain-Bandwidth Product*	f _T	—	250	—	MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

* Transistor - For Reference Only

Typical Curves – DDTA114GUA



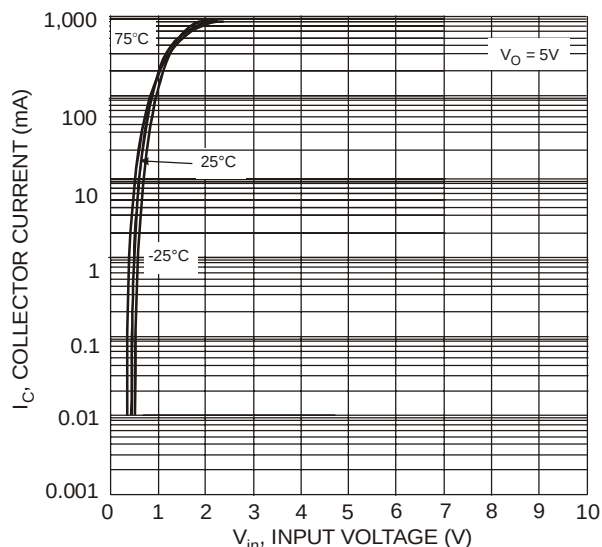


Fig. 5 Collector Current vs. Input Voltage

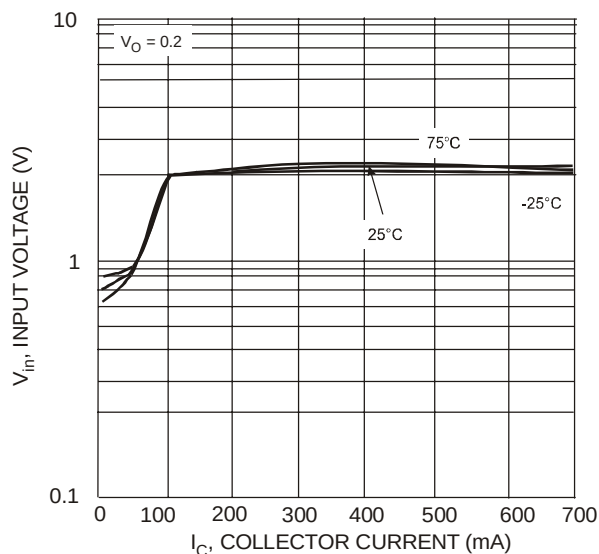


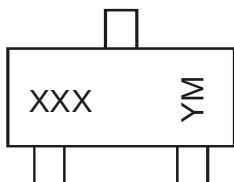
Fig. 6 Input Voltage vs. Collector Current

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: 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: T = 2006

M = Month ex: 9 = September

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

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

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