

DDTA (R2-ONLY SERIES) CA

PNP PRE-BIASED SMALL SIGNAL SOT-23
SURFACE MOUNT TRANSISTOR

NEW PRODUCT

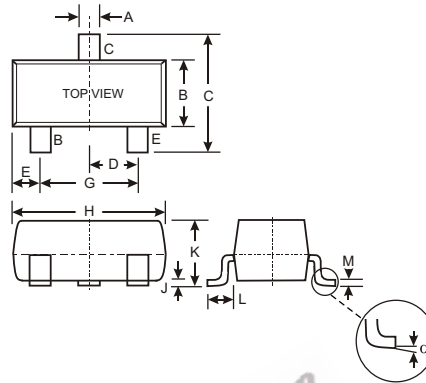
Features

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

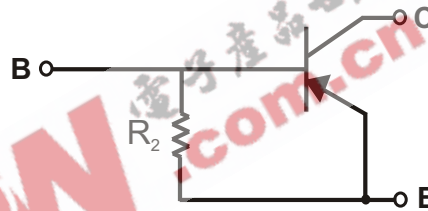
Mechanical Data

- Case: SOT-23, 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: 0.008 grams (approx.)
- Ordering Information (See Page 2)

P/N	R2 (NOM)	MARKING
DDTA114GCA	10K	P26
DDTA124GCA	22K	P27
DDTA144GCA	47K	P28
DDTA115GCA	100K	P29



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.85	0.80
	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>.

Electrical Characteristics @ $T_A = 25\text{ C}$ 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	$I_E = -720\text{ A}$, DDTA114GCA $I_E = -330\text{ A}$, DDTA124GCA $I_E = -160\text{ A}$, DDTA144GCA $I_E = -72\text{ A}$, DDTA115GCA
Collector Cutoff Current		I_{CBO}			-0.5	A	$V_{CB} = -50\text{ V}$
Emitter Cutoff Current		DDTA114GCA DDTA124GCA DDTA144GCA DDTA115GCA 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		DDTA114GCA DDTA124GCA DDTA144GCA DDTA115GCA h_{FE}	30 56 68 82				$I_C = -5\text{ mA}$, $V_{CE} = -5\text{ V}$
Bleeder Resistor (R_2) Tolerance		DR_2	-30		+30	%	
Gain-Bandwidth Product*		f_T		250		MHz	$V_{CE} = -10\text{ V}$, $I_E = 5\text{ mA}$, $f = 100\text{ MHz}$

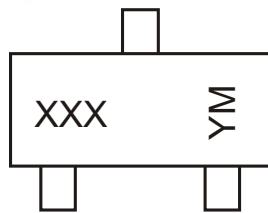
* Transistor - For Reference Only

Ordering Information (Note 2)

Device	Packaging	Shipping
DDTA114GCA-7	SOT-23	3000/Tape & Reel
DDTA124GCA-7	SOT-23	3000/Tape & Reel
DDTA144GCA-7	SOT-23	3000/Tape & Reel
DDTA115GCA-7	SOT-23	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 - DDTA114GCA

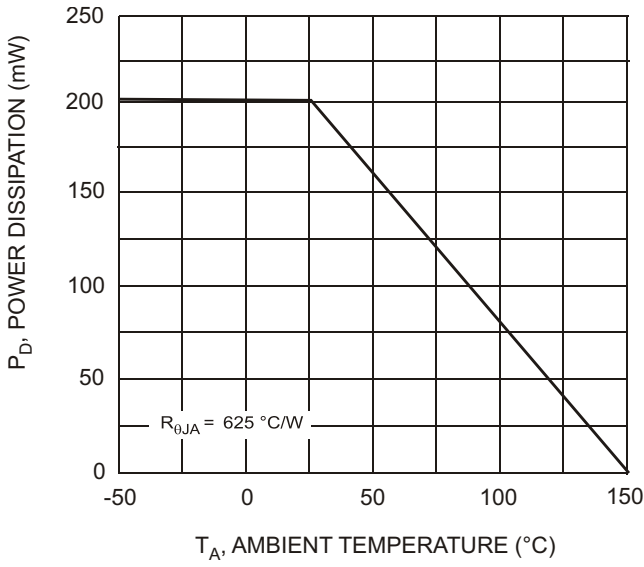


Fig. 1, Derating Curve

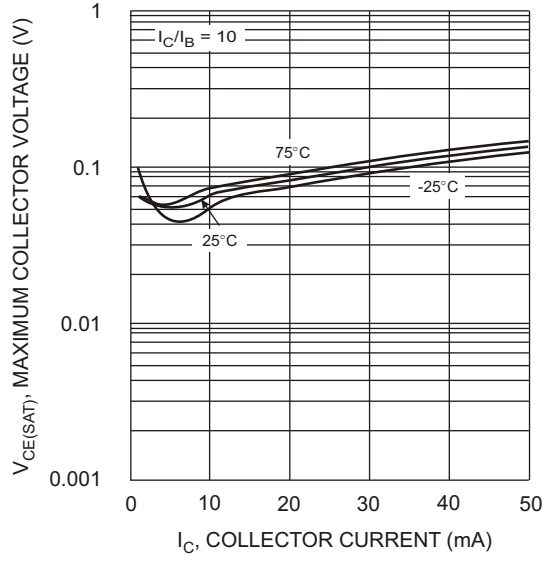


Fig. 2 $V_{CE(SAT)}$ vs. I_C

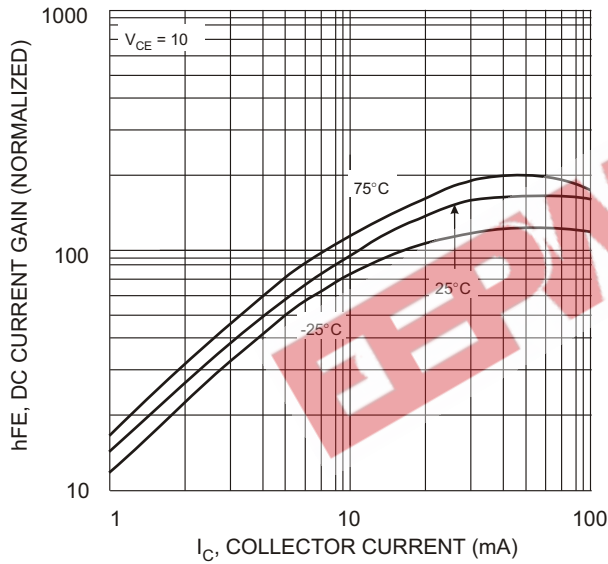


Fig. 3 DC CURRENT GAIN

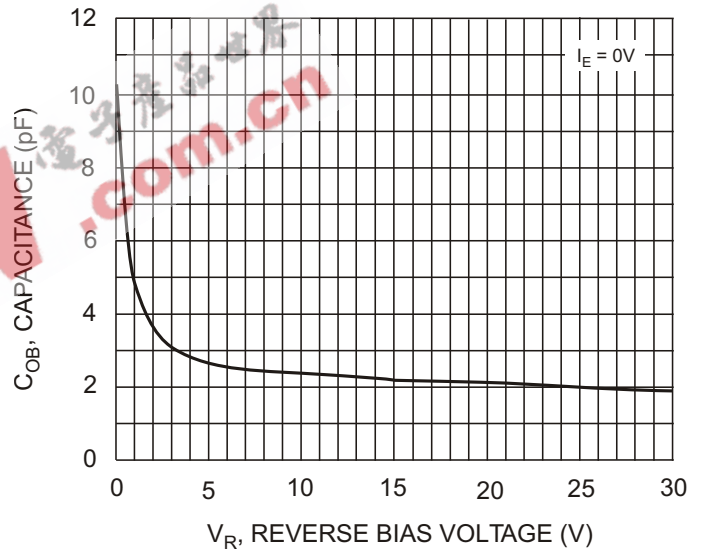


Fig. 4 Output Capacitance

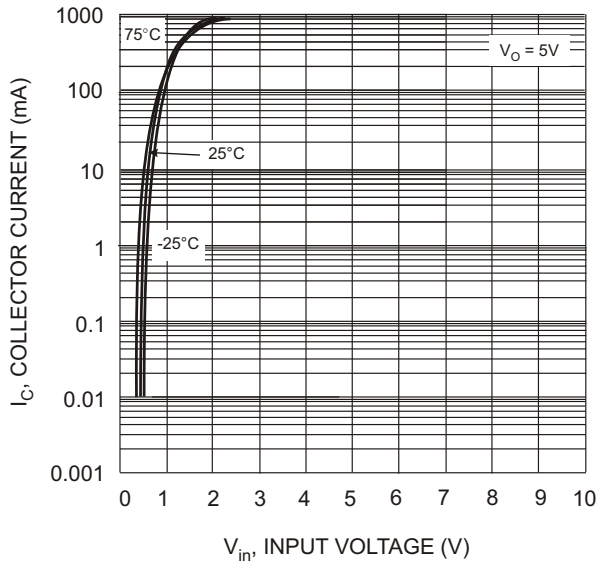


Fig. 5 Collector Current Vs. Input Voltage

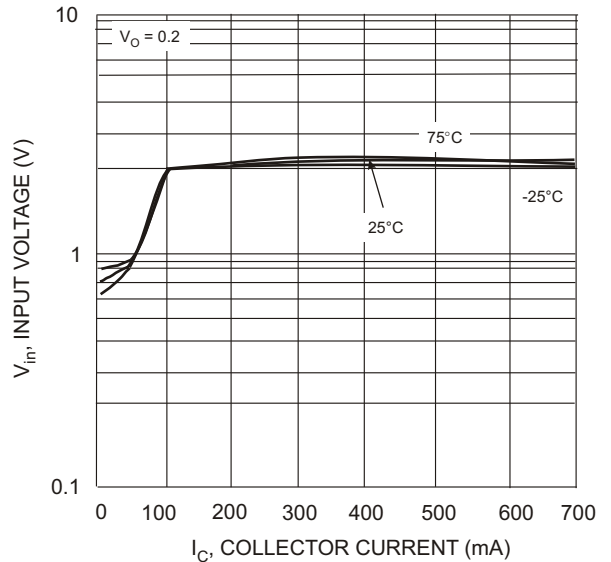


Fig. 6 Input Voltage vs. Collector Current