

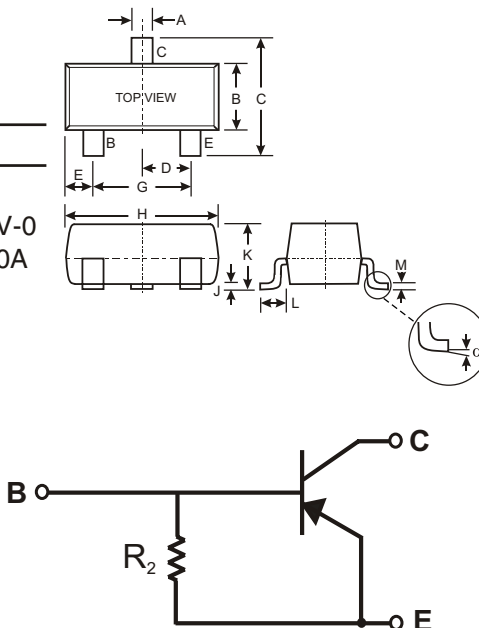
### Features

- 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 $\Omega$	P26
DDTA124GCA	22K $\Omega$	P27
DDTA144GCA	47K $\Omega$	P28
DDTA115GCA	100K $\Omega$	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
$\alpha$	0°	8°
All Dimensions in mm		

SCHEMATIC DIAGRAM

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating and Storage and Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

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

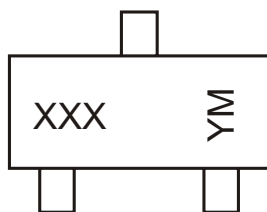
**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		$BV_{CBO}$	-50	—	—	V	$I_C = -50\mu\text{A}$
Collector-Emitter Breakdown Voltage		$BV_{CEO}$	-50	—	—	V	$I_C = -1\text{mA}$
Emitter-Base Breakdown Voltage		$BV_{EBO}$	5	—	—	V	$I_E = -720\mu\text{A}$ , DDTA114GCA $I_E = -330\mu\text{A}$ , DDTA124GCA $I_E = -160\mu\text{A}$ , DDTA144GCA $I_E = -72\mu\text{A}$ , DDTA115GCA
Collector Cutoff Current		$I_{CBO}$	—	—	-0.5	$\mu\text{A}$	$V_{CB} = -50\text{V}$
Emitter Cutoff Current	DDTA114GCA DDTA124GCA DDTA144GCA DDTA115GCA	$I_{EBO}$	-300 -140 -65 -30	—	-580 -260 -130 -58	$\mu\text{A}$	$V_{EB} = -4\text{V}$
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

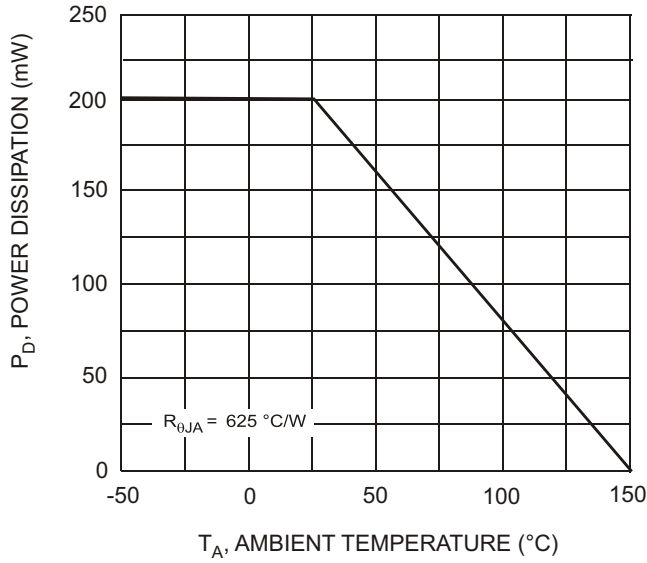


Fig. 1, Derating Curve

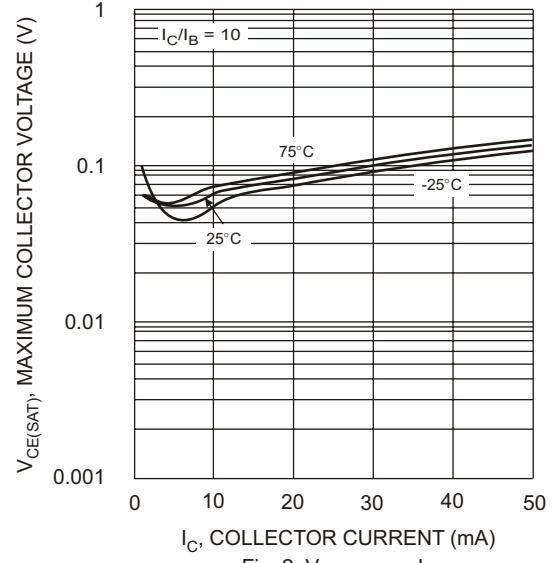


Fig. 2  $V_{CE(SAT)}$  vs.  $I_C$

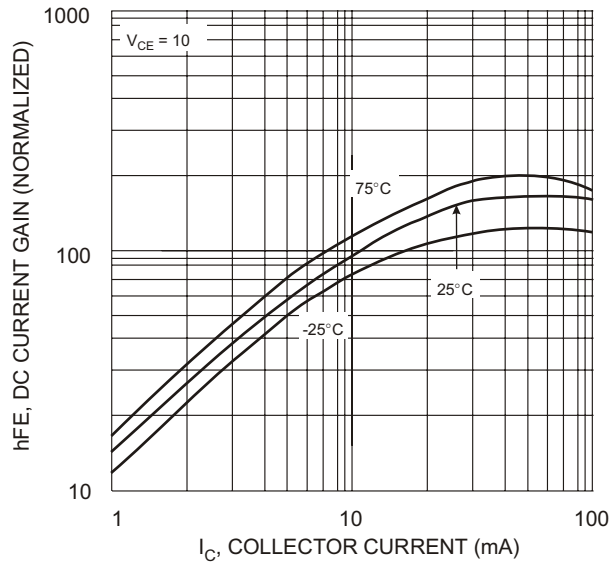


Fig. 3 DC CURRENT GAIN

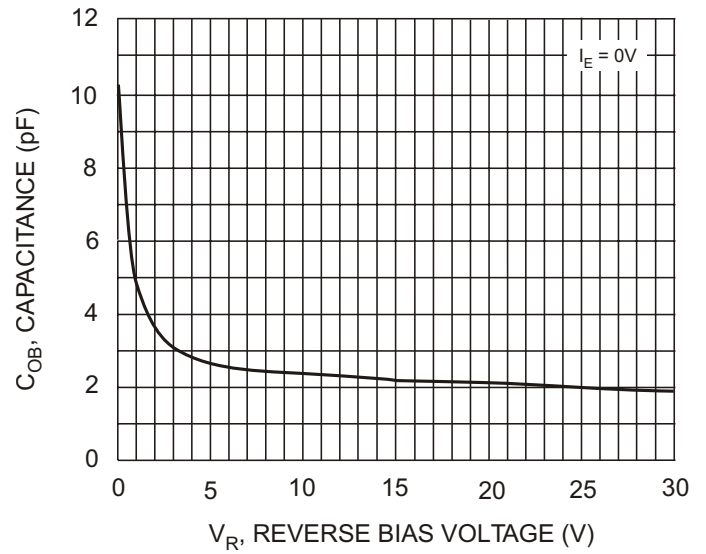


Fig. 4 Output Capacitance

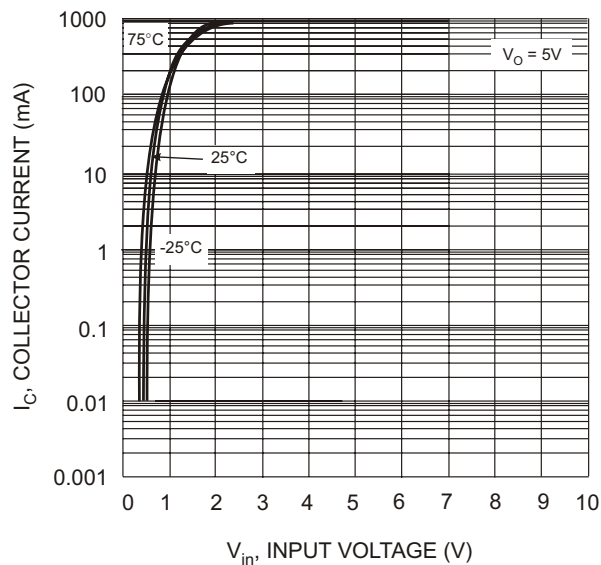


Fig. 5 Collector Current Vs. Input Voltage

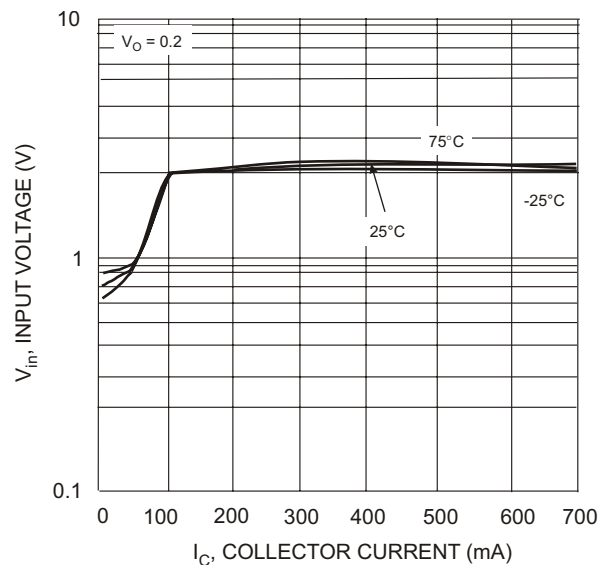


Fig. 6 Input Voltage vs. Collector Current