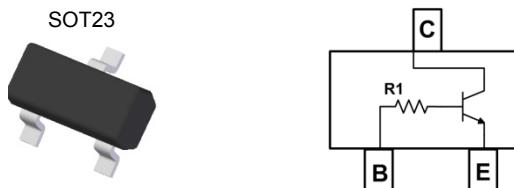


Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDTA)
- Built-In Biasing Resistors, R1 only
- Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)**
- Halogen and Antimony Free "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Part Number	R1 (NOM)
DDTC113TCA	1KΩ
DDTC123TCA	2.2KΩ
DDTC143TCA	4.7KΩ
DDTC114TCA	10KΩ
DDTC124TCA	22KΩ
DDTC144TCA	47KΩ
DDTC115TCA	100KΩ
DDTC125TCA	200KΩ



Top View

Device Schematic – Top View

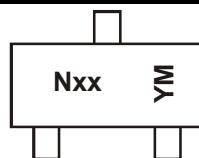
Ordering Information (Notes 4 & 5)

Product	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DDTC113TCA-7-F	AEC-Q101	N01	7	8	3,000
DDTC123TCA-7-F	AEC-Q101	N03	7	8	3,000
DDTC143TCA-7-F	AEC-Q101	N07	7	8	3,000
DDTC143TCAQ-7-F	Automotive	N07	7	8	3,000
DDTC143TCAQ-13-F	Automotive	N07	13	8	10,000
DDTC114TCA-7-F	AEC-Q101	N12	7	8	3,000
DDTC124TCA-7-F	AEC-Q101	N16	7	8	3,000
DDTC144TCA-7-F	AEC-Q101	N19	7	8	3,000
DDTC115TCA-7-F	AEC-Q101	N23	7	8	3,000
DDTC125TCA-7-F	AEC-Q101	N25	7	8	3,000

Notes:

- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.
- For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



NXX = Product Type Marking Code (See Table above)

YM = Date Code Marking

Y = Year (ex: X = 2010)

M = Month (ex: 9 = September)

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		
Code	T	U	V	W	X	Y	Z	A	B	C		
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

Absolute 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

Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

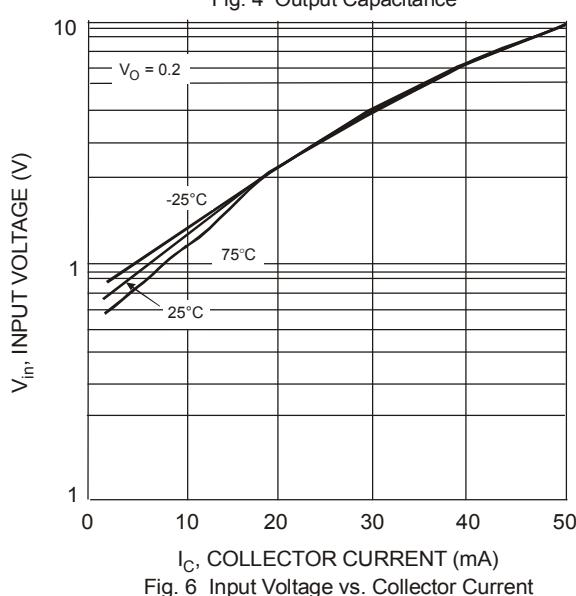
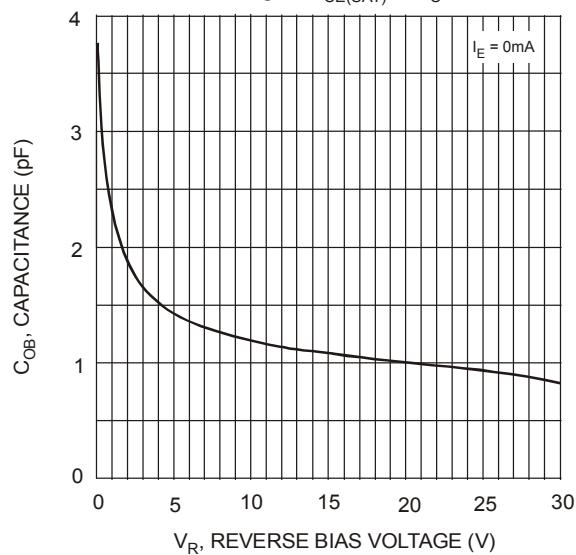
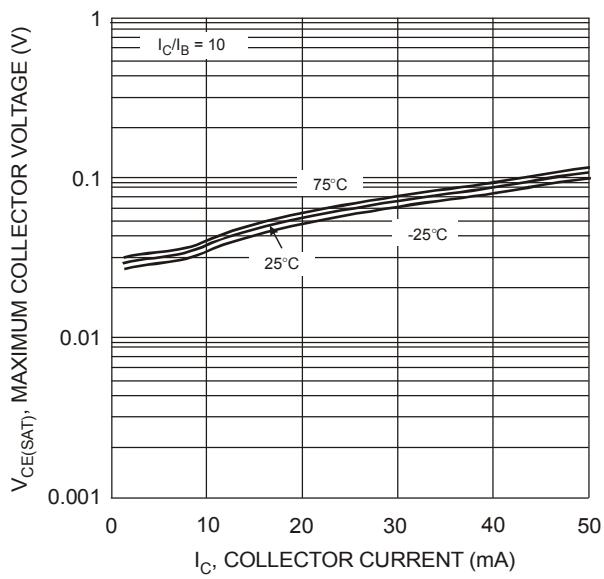
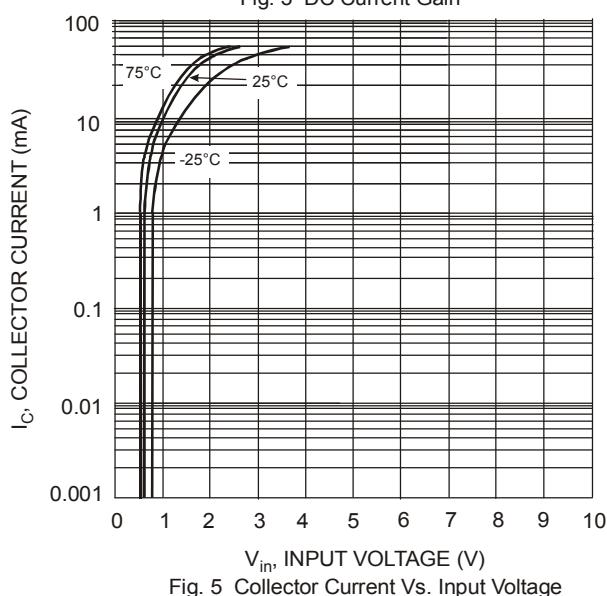
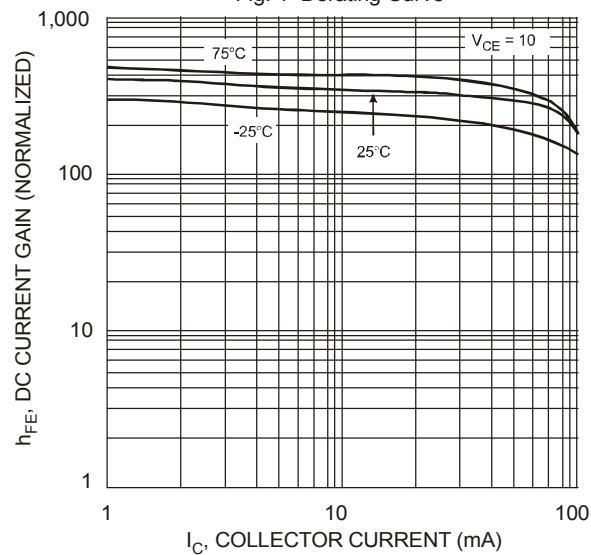
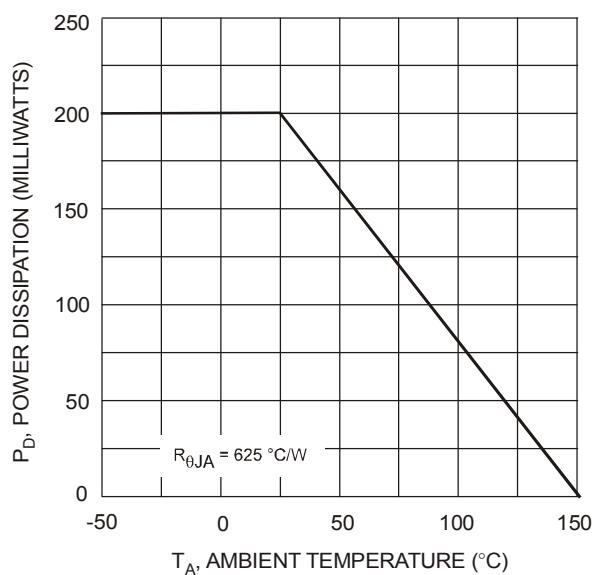
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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	$I_E = 50\mu\text{A}$
Collector Cutoff Current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 50\text{V}$
Emitter Cutoff Current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(\text{sat})}$	—	—	0.3	V	$I_C/I_B = 10\text{mA}/1\text{mA}$ DDTC113TCA $I_C/I_B = 5\text{mA}/0.5\text{mA}$ DDTC123TCA $I_C/I_B = 2.5\text{mA}/.25\text{mA}$ DDTC143TCA $I_C/I_B = 1\text{mA}/.1\text{mA}$ DDTC114TCA $I_C/I_B = 5\text{mA}/0.5\text{mA}$ DDTC124TCA $I_C/I_B = 2.5\text{mA}/.25\text{mA}$ DDTC144TCA $I_C/I_B = 1\text{mA}/0.1\text{mA}$ DDTC115TCA $I_C/I_B = .5\text{mA}/.05\text{mA}$ DDTC125TCA
DC Current Transfer Ratio	h_{FE}	100 120	250 —	600 630	—	$I_C = 1\text{mA}, V_{CE} = 5\text{V}$ $I_C = 5\text{mA}, V_{CE} = 5\text{V}$ DDTC143TCAQ
Input Resistor (R_1) Tolerance	ΔR_1	-30	—	+30	%	—
Gain-Bandwidth Product (Note 7)	f_T	—	250	—	MHz	$V_{CE} = 10\text{V}, I_E = -5\text{mA}$, $f = 100\text{MHz}$

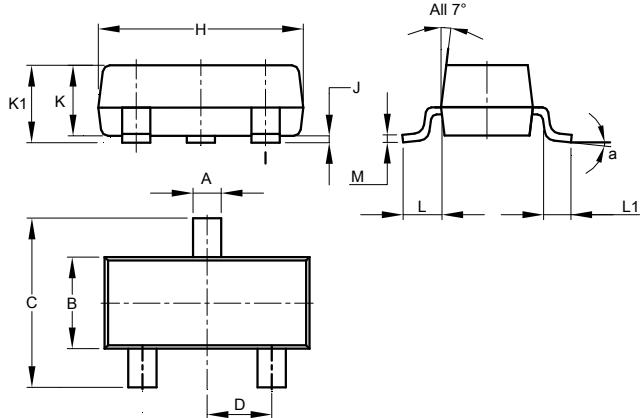
Notes: 6. Mounted on FR4 PC Board with minimum recommended pad layout
 7. Transistor - For Reference Only

Typical Characteristics – DDTC144TCA (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

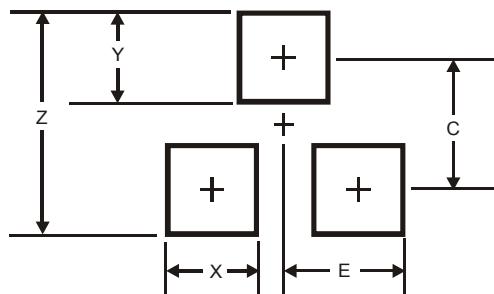
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	8°		
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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