



DDTA (R1-ONLY SERIES) CA

PNP PRE-BIASED TRANSISTOR IN SOT23

Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistors, R1 only
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please <u>contact us</u> or your local Diodes representative. <u>https://www.diodes.com/quality/product-definitions/</u>

Mechanical Data

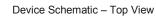
- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.008 grams (approximate)

Part Number	R1 (NOM)
DDTA113TCA	1kΩ
DDTA123TCA	2.2kΩ
DDTA143TCA	4.7kΩ
DDTA114TCA	10kΩ
DDTA124TCA	22kΩ
DDTA144TCA	47kΩ
DDTA115TCA	100kΩ
DDTA125TCA	200kΩ





Top View



С

R1

в

Ordering Information (Note 4)

Product	Status	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DDTA113TCA-7-F	Active	Standard	P01	7	8	3,000
DDTA123TCA-7-F	Active	Standard	P03	7	8	3,000
DDTA143TCA-7-F	Active	Standard	P07	7	8	3,000
DDTA114TCA-7-F	Active	Standard	P12	7	8	3,000
DDTA124TCA-7-F	Active	Standard	P16	7	8	3,000
DDTA144TCA-7-F	Active	Standard	P19	7	8	3,000
DDTA115TCA-7-F	Active	Standard	P23	7	8	3,000
DDTA125TCA-7-F	Obsolete	Standard	P25	7	8	3,000

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. 2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and

Lead-free. 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and

<1000ppm antimony compounds.

4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/

Marking Information

PXX	ΜY	

PXX = Product Type Marking Code (See Table above)

YM = Date Code Marking

Y = Year (ex: I = 2021)

M = Month (ex: 9 = September)

Date Code Key												
Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Code	I	J	K	L	М	Ν	0	Р	R	S	Т	U
	_			_		-			•	• •		-
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Absolute 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

Thermal Characteristics (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	PD	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

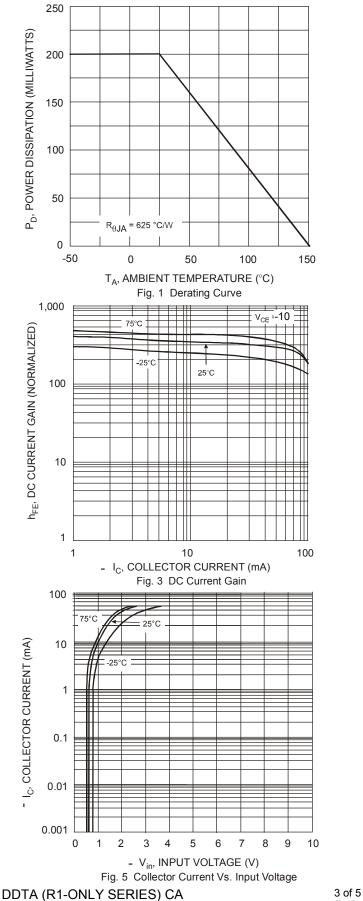
Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.)

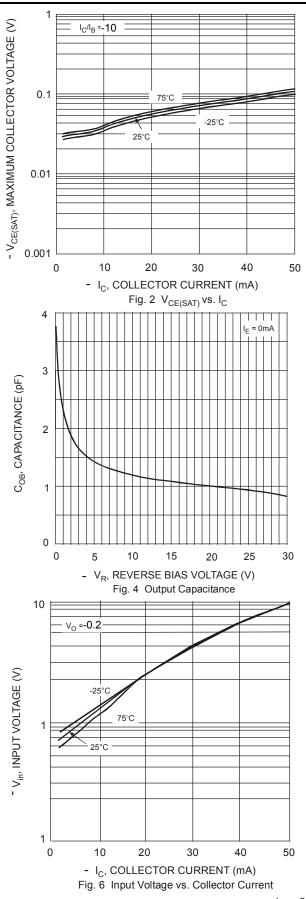
Characteristic	Symbol	Min	Тур	Мах	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-50	_		V	I _C = -50μΑ
Collector-Emitter Breakdown Voltage	BV _{CEO}	-50	—		V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	_	_	V	I _E = -50μA
Collector Cutoff Current	I _{CBO}	_	_	-0.5	μA	V _{CB} = -50V
Emitter Cutoff Current	I _{EBO}		_	-0.5	μA	$V_{EB} = -4V$
Collector-Emitter Saturation Voltage	V _{CE(sat)}	_		-0.3	v	$\begin{split} & I_{C/IB} = -10 \text{mA}/-1\text{mA} & \text{DDTA113TCA} \\ & I_{C/IB} = -5\text{mA}/-0.5\text{mA} & \text{DDTA123TCA} \\ & I_{C/IB} = -2.5\text{mA}/-0.25\text{mA} & \text{DDTA143TCA} \\ & I_{C/IB} = -1\text{mA}/-0.1\text{mA} & \text{DDTA114TCA} \\ & I_{C/IB} = -5\text{mA}/-0.5\text{mA} & \text{DDTA124TCA} \\ & I_{C/IB} = -2.5\text{mA}/-0.25\text{mA} & \text{DDTA144TCA} \\ & I_{C/IB} = -1\text{mA}/-0.1\text{mA} & \text{DDTA115TCA} \\ & I_{C/IB} = -0.5\text{mA}/-0.05\text{mA} & \text{DDTA125TCA} \\ \end{split}$
DC Current Transfer Ratio	h _{FE}	100	250	600		I _C = -1mA, V _{CE} = -5V
Input Resistor (R1) Tolerance	ΔR_1	-30	_	+30	%	_
Gain-Bandwidth Product (Note 6)	f⊤	_	250		MHz	V _{CE} = -10V, I _E = -5mA, f = 100MHz

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



Typical Characteristics – DDTA144TCA (@ T_A = +25°C, unless otherwise specified.)





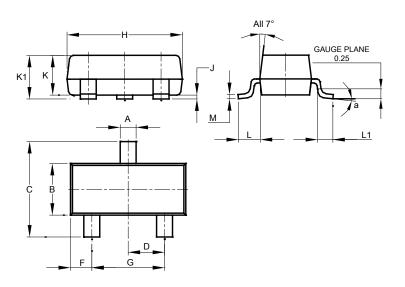
Document number: DS30335 Rev. 7 - 2

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Package Outline Dimensions

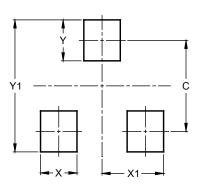
Please see http://www.diodes.com/package-outlines.html for the latest version.



	SOT23						
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
С	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				
н	2.80	3.00	2.90				
J	0.013	0.10	0.05				
ĸ	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				
М	0.085	0.150	0.110				
а	0°	8°					
All	Dimens	ions in	mm				

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.



SOT23

Dimensions	Value (in mm)
С	2.0
Х	0.8
X1	1.35
Y	0.9
Y1	2.9

SOT23



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