



**THE DATASHEET OF
DDTA144GE-7-F**



PNP PRE-BIASED SMALL SIGNAL SURFACE MOUNT TRANSISTOR
Features

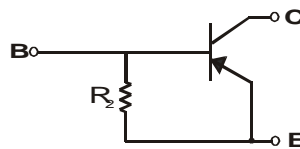
- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistor, R2 Only
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Part Number	R2 (NOM)
DDTA114GE	10kΩ
DDTA124GE	22kΩ
DDTA144GE	47kΩ
DDTA115GE	100kΩ

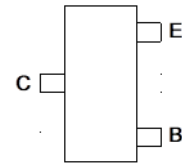
SOT523



Top View



Device Schematic



Package Pin Out Configuration

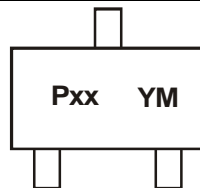
Mechanical Data

- Case: SOT523
- 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 (B3)
- Weight: 0.002 grams (Approximate)

Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
DDTA114GE-7-F	AEC-Q101	P26	7	8	3000
DDTA124GE-7-F	AEC-Q101	P27	7	8	3000
DDTA144GE-7-F	AEC-Q101	P28	7	8	3000
DDTA115GE-7-F	AEC-Q101	P29	7	8	3000

- 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, visit website at <http://www.diodes.com/products/packages.html>.

Marking Information


Pxx = Product Type Marking Code (See Ordering Information)
 YM = Date Code Marking
 Y or Y̅ = Year (ex: F = 2018)
 M = Month (ex: 9 = September)

Date Code Key

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Code	F	G	H	I	J	K	L	M	N	O	P

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°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

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	150	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	833	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Note: 5. Mounted on FR4 PC Board with minimum recommended pad layout.

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

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV _{CB0}	-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, DDTA114GE I _E = -330μA, DDTA124GE I _E = -160μA, DDTA144GE I _E = -72μA, DDTA115GE
Collector Cutoff Current		I _{CB0}	—	—	-0.5	μA	V _{CB} = -50V
Emitter Cutoff Current	DDTA114GE	I _{EBO}	-300	—	-580	μA	V _{EB} = -4V
	DDTA124GE		-140		-260		
	DDTA144GE		-65		-130		
	DDTA115GE		-30		-58		
Collector-Emitter Saturation Voltage		V _{CE(sat)}	—	—	-0.3	V	I _C = -10mA, I _B = -0.5mA
DC Current Transfer Ratio	DDTA114GE	h _{FE}	30	—	—	—	I _C = -5mA, V _{CE} = -5V
	DDTA124GE		56				
	DDTA144GE		68				
	DDTA115GE		82				
Shunt Resistor (R ₂) Tolerance		ΔR ₂	-30	—	+30	%	—
Gain-Bandwidth Product (Note 6)		f _T	—	250	—	MHZ	V _{CE} = -10V, I _E = 5mA, f = 100MHZ

Note: 6. Transistor—for reference only.

Typical Curves—DDT114GE

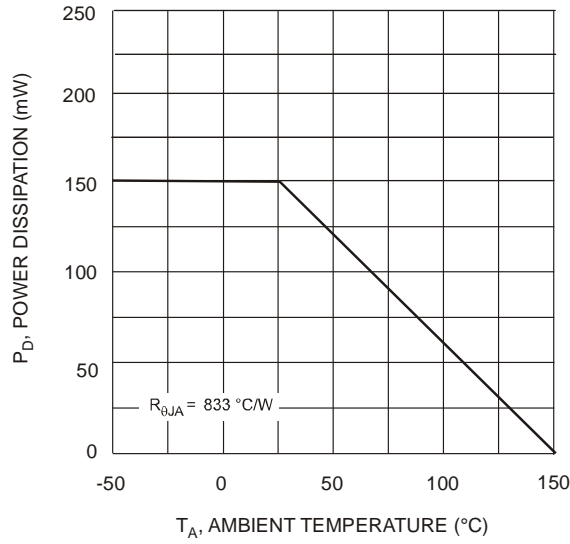


Fig. 1 Derating Curve

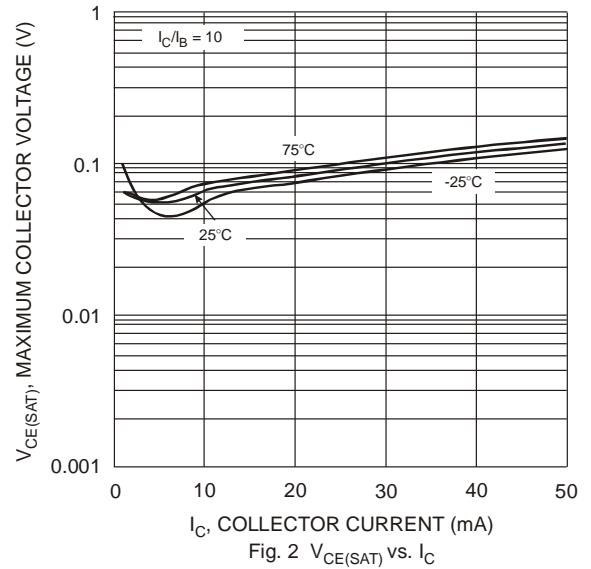


Fig. 2 $V_{CE(SAT)}$ vs. I_C

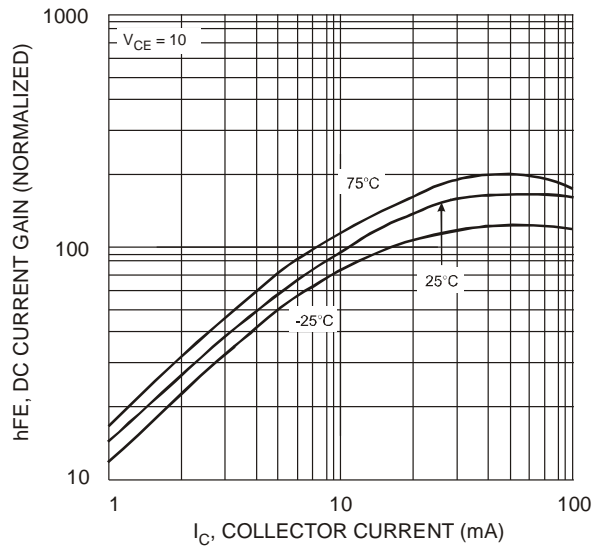


Fig. 3 DC Current Gain

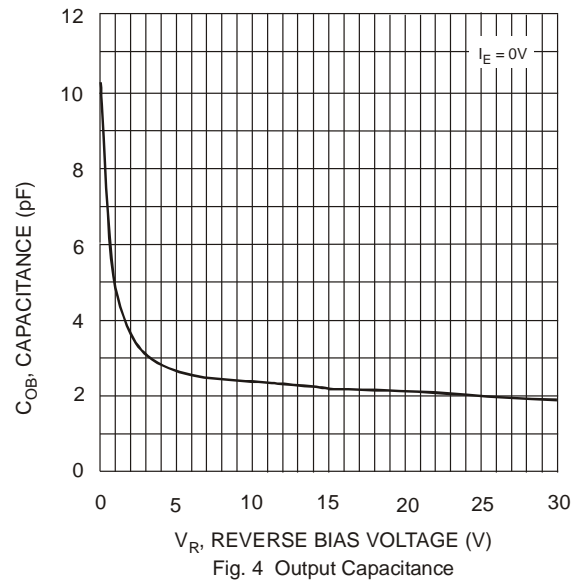


Fig. 4 Output Capacitance



Fig. 5 Collector Current vs. Input Voltage

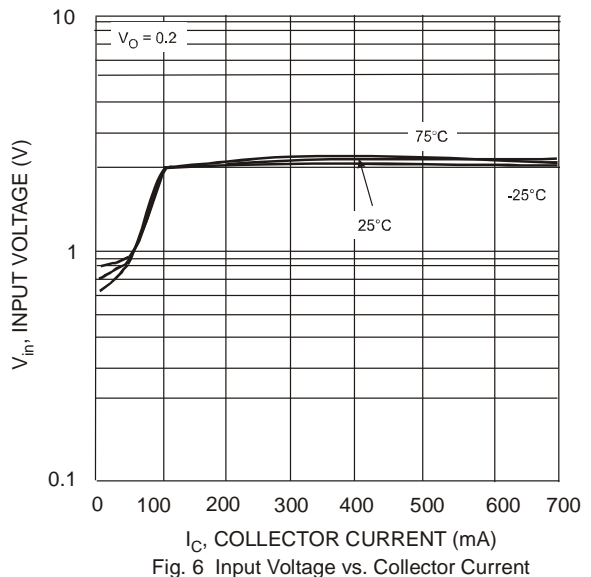
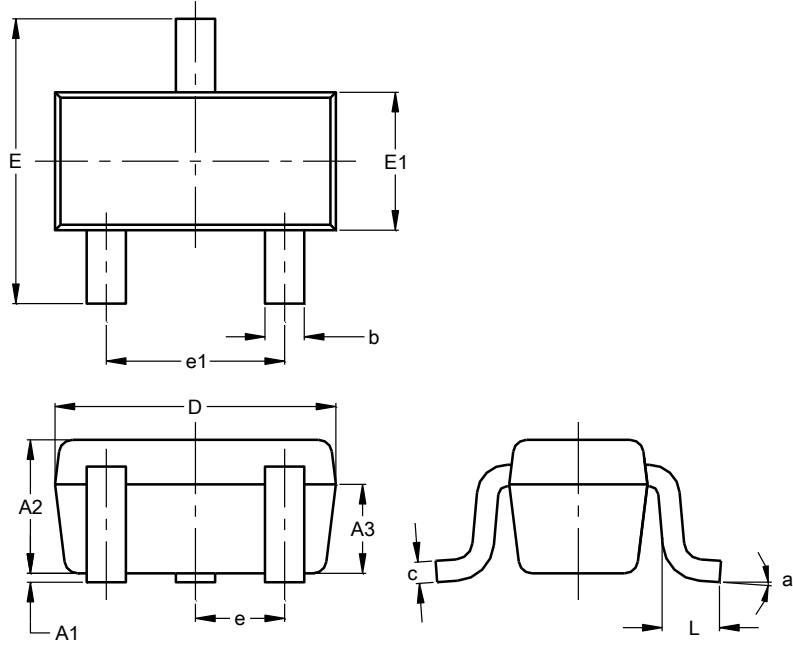


Fig. 6 Input Voltage vs. Collector Current

Package Outline Dimensions

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

SOT523

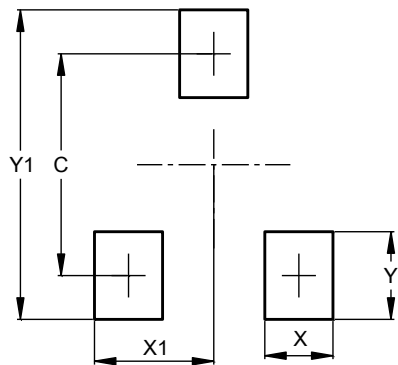


SOT523			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.



Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2018, Diodes Incorporated

www.diodes.com

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View DDTA144GE-7-F on WIN SOURCE](#)
-  [Diodes Incorporated Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management