



PNP PRE-BIASED SMALL SIGNAL SURFACE MOUNT TRANSISTOR

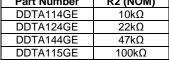
Features

- **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

Mechanical Data

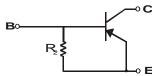
- Case: SOT523
- Case Material: Molded Plastic, "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish—Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 @3
- Weight: 0.002 grams (Approximate)







Top View



Device Schematic



Package Pin Out Configuration

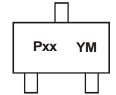
Ordering Information (Note 4)

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 \overline{Y} = Year (ex: F = $2\overline{0}18$) M = Month (ex: 9 = September)

Date Code Key

Year	2018	2019	2020	2021	202	2 20	023	2024	2025	2026	2027	2028
Code	F	G	Н	I	J		K	L	М	N	0	Р
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	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)	$R_{\Theta JA}$	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)

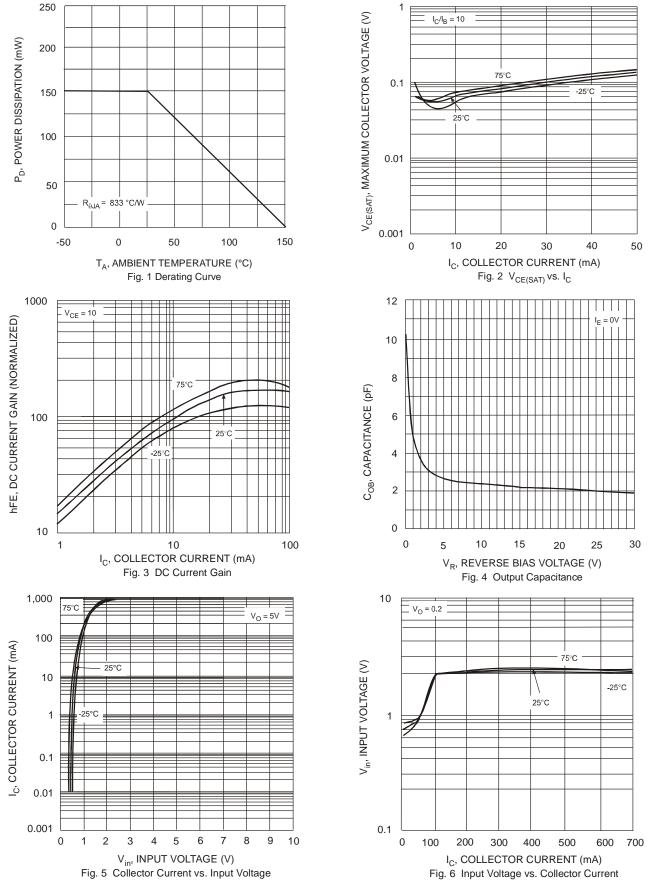
Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-50	_	_	V	I _C = -50μA	
Collector-Emitter Breakdown Voltage		BV _{CEO}	-50	_	_	V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	5			V	I _E = -720μA, DDTA114GE I _E = -330μA, DDTA124GE I _E = -160μA, DDTA144GE I _E = -72μA, DDTA115GE	
Collector Cutoff Current		I _{CBO}	_	_	-0.5	μΑ	V _{CB} = -50V
Emitter Cutoff Current	DDTA114GE DDTA124GE DDTA144GE DDTA115GE	I _{EBO}	-300 -140 -65 -30	_	-580 -260 -130 -58	μΑ	V _{EB} = -4V
Collector-Emitter Saturation Voltage		V _{CE(sat)}	_	_	-0.3	V	$I_C = -10$ mA, $I_B = -0.5$ mA
DC Current Transfer Ratio	DDTA114GE DDTA124GE DDTA144GE DDTA115GE	h _{FE}	30 56 68 82			_	I _C = -5mA, V _{CE} = -5V
Shunt Resistor (R ₂) Tolerance		ΔR_2	-30	_	+30	%	_
Gain-Bandwidth Product (Note 6)		f⊤	_	250	_	MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

Note:

6. Transistor—for reference only.



Typical Curves—DDT114GE

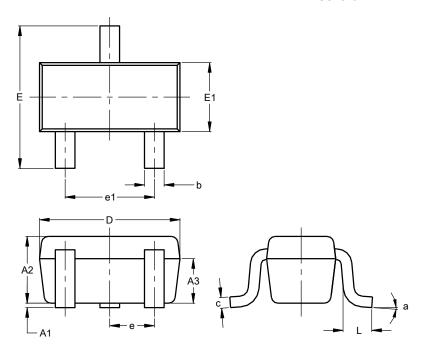




Package Outline Dimensions

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

SOT523

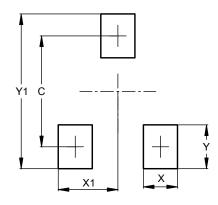


	SOT523						
Dim	Min	Max	Тур				
A1	0.00	0.10	0.05				
A2	0.60	0.80	0.75				
А3	0.45	0.65	0.50				
b	0.15	0.30	0.22				
С	0.10	0.20	0.12				
D	1.50	1.70	1.60				
Е	1.45	1.75	1.60				
E1	0.75	0.85	0.80				
е		0.50 BS	С				
e1	0.90	1.10	1.00				
L	0.20	0.40	0.33				
а	0°		8°				
Al	All Dimensions in mm						

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)			
С	1.29			
Х	0.40			
X1	0.70			
Y	0.51			
Y1	1.80			



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