

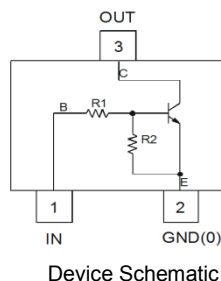
Features

- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- Surface Mount Package Suited for Automated Assembly
- **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 [contact us](https://www.diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Case: SOT323
- 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 **(E3)**
- Weight: 0.006 grams (Approximate)

Part Number	R1(NOM)	R2(NOM)
DDTD113EU	1k Ω	10k Ω
DDTD123EU	2.2k Ω	2.2k Ω
DDTD143EU	4.7k Ω	4.7k Ω
DDTD114EU	10k Ω	10k Ω
DDTD122JU	0.22k Ω	4.7k Ω
DDTD113ZU	1k Ω	10k Ω
DDTD123YU	2.2k Ω	10k Ω
DDTD133HU	3.3k Ω	10k Ω
DDTD123TU	2.2k Ω	Open
DDTD143TU	4.7k Ω	Open
DDTD114TU	10k Ω	Open
DDTD114GU	0	10k Ω

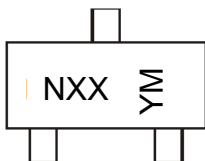


Ordering Information (Note 4)

Product	Status	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
DDTD113EU-7-F	Obsolete	Standard	N60	7	8	3,000
DDTD123EU-7-F	Obsolete	Standard	N61	7	8	3,000
DDTD143EU-7-F	Obsolete	Standard	N62	7	8	3,000
DDTD114EU-7-F	Obsolete	Standard	N63	7	8	3,000
DDTD122JU-7-F	Obsolete	Standard	N64	7	8	3,000
DDTD113ZU-7-F	Active	Standard	N65	7	8	3,000
DDTD123YU-7-F	Obsolete	Standard	N66	7	8	3,000
DDTD133HU-7-F	Obsolete	Standard	N67	7	8	3,000
DDTD123TU-7-F	Active	Standard	N69	7	8	3,000
DDTD143TU-7-F	Obsolete	Standard	N70	7	8	3,000
DDTD114TU-7-F	Obsolete	Standard	N71	7	8	3,000
DDTD114GU-7-F	Obsolete	Standard	N72	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



NXX = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: I = 2021)
 M = Month (ex: 9 = September)

Date Code Key

Year	2016	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	D	I	J	K	L	M	N	O	P	R	S
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
Supply Voltage, (3) to (2)	V _{CC}	50	V
Input Voltage, (1) to (2)	V _{IN}	DDTD113EU -10 to +10 DDTD123EU -10 to +12 DDTD143EU -10 to +30 DDTD114EU -10 to +40 DDTD122JU -5 to +5 DDTD113ZU -5 to +10 DDTD123YU -5 to +12 DDTD133HU -6 to +20	V
Input Voltage, (2) to (1)	V _{EBO (MAX)}	5	V
Output Current	I _C	500	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	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

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

Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.) **R1, R2 Types**

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	V _{I(off)}	0.5 0.5 0.5 0.5 0.3 0.3 0.3	—	—	V	V _{CC} = 5V, I _O = 100μA
	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	V _{I(on)}	—	—	3.0 3.0 3.0 3.0 3.0 2.0 2.0 2.0	V	V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 10mA V _O = 0.3V, I _O = 30mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA V _O = 0.3V, I _O = 20mA
Output Voltage		V _{O(on)}	—	—	0.3V	V	I _O /I _I = 50mA/2.5mA
Input Current	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	I _I	—	—	7.2 3.8 1.8 0.88 28 7.2 3.6 2.4	mA	V _I = 5V
Output Current		I _{O(off)}	—	—	0.5	μA	V _{CC} = 50V, V _I = 0V
DC Current Gain	DDTD113EU DDTD123EU DDTD143EU DDTD114EU DDTD122JU DDTD113ZU DDTD123YU DDTD133HU	G _I	33 39 47 56 47 56 56 56	—	—	—	V _O = 5V, I _O = 50mA
Gain-Bandwidth Product (Note 6)		f _T	—	200	—	MHz	V _{CE} = 10V, I _E = 5mA, f = 100MHz

Electrical Characteristics (@ T_A = 25°C unless otherwise specified) **R1-Only, R2-Only Types**

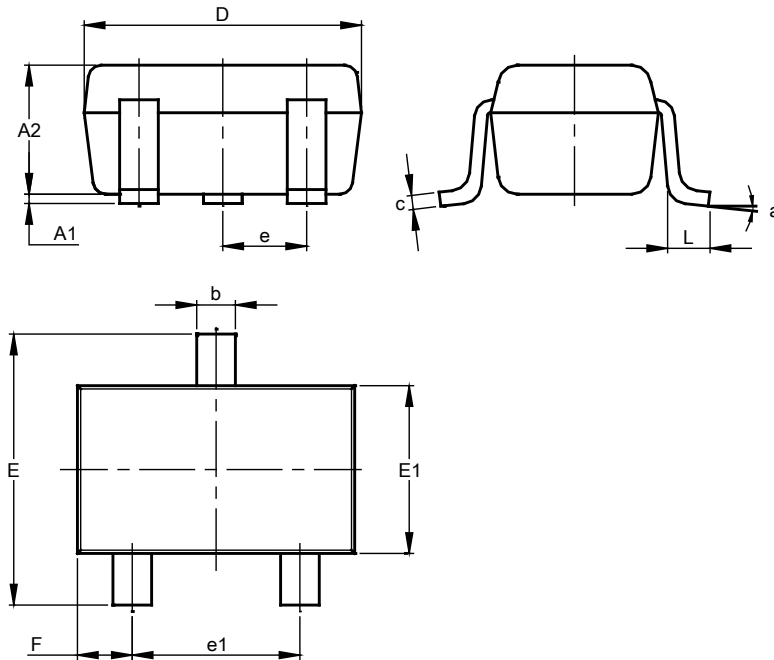
Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV _{CB0}	50	—	—	V	I _C = 50μA
Collector-Emitter Breakdown Voltage		BV _{CEO}	40	—	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	DDTD123TU DDTD143TU DDTD114TU DDTD114GU	BV _{EBO}	5	—	—	V	I _E = 50μA I _E = 50μA I _E = 50μA I _E = 720μA
Collector Cutoff Current		I _{CB0}	—	—	0.5	μA	V _{CB} = 50V
Emitter Cutoff Current	DDTD123TU DDTD143TU DDTD114TU DDTD114GU	I _{EBO}	— — — 300	—	0.5 0.5 0.5 580	μA	V _{EB} = 4V
Collector-Emitter Saturation Voltage		V _{CE(sat)}	—	—	0.3	V	I _C = 50mA, I _B = 2.5mA
DC Current Transfer Ratio	DDTD123TU DDTD143TU DDTD114TU DDTD114GU	h _{FE}	100 100 100 56	250 250 250 —	600 600 600 —	—	I _C = 5mA, V _{CE} = 5V
Gain-Bandwidth Product (Note 6)		f _T	—	200	—	MHz	V _{CE} = 10V, I _E = 5mA, f = 100MHz

Note: 6. Transistor - for reference only

Package Outline Dimensions

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

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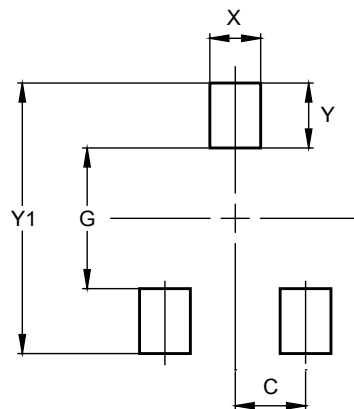


SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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