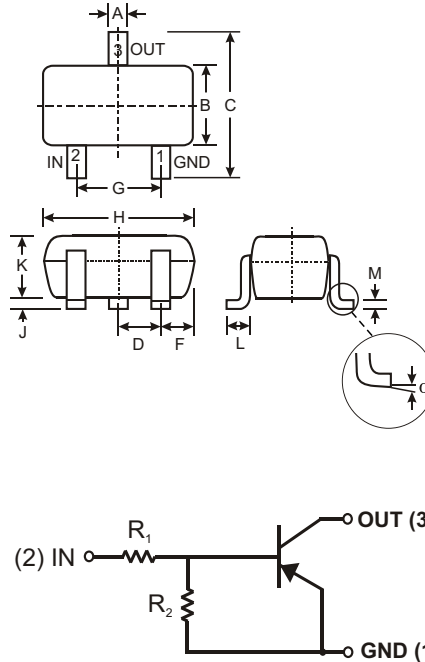


Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTD)
- Built-In Biasing Resistors, R1, R2
- Also Available in Lead Free Version

Mechanical Data

- Case: SOT-323, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 3, on Page 3
- Terminal Connections: See Diagram
- Marking: Date Code and Marking Code (See Diagrams & Page 3)
- Weight: 0.006 grams (approx.)
- Ordering Information (See Page 3)



SOT-323		
Dim	Min	Max
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
α	0°	8°
All Dimensions in mm		

P/N	R1 (NOM)	R2 (NOM)	MARKING
DDTB113EU	1K	1K	P60
DDTB123EU	2.2K	2.2K	P61
DDTB143EU	4.7K	4.7K	P62
DDTB114EU	10K	10K	P63
DDTB122JU	0.22K	4.7K	P64
DDTB113ZU	1K	10K	P65
DDTB123YU	2.2K	10K	P66
DDTB133HU	3.3K	10K	P67
DDTB123TU	2.2K	OPEN	P69
DDTB143TU	4.7K	OPEN	P70
DDTB114TU	10K	OPEN	P71
DDTB114GU	0	10K	P72

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage, (3) to (1)	V _{CC}	-50	V
Input Voltage, (2) to (1)	V _{IN}	+10 to -10 +10 to -12 +10 to -30 +10 to -40 +5 to -5 +5 to -10 +5 to -12 +6 to -20	V
Input Voltage, (1) to (2)	V _{EBO (MAX)}	-5	V
Output Current	I _C	-500	mA
Power Dissipation	P _d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R _{θJA}	625	°C/W
Operating and Storage and Temperature Range	T _j , T _{STG}	-55 to +150	°C

Note: 1. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.

Electrical Characteristics @ T_A = 25°C unless otherwise specified

R1, R2 Types

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTB113EU DDTB123EU DDTB143EU DDTB114EU DDTB122JU DDTB113ZU DDTB123YU DDTB133HU	V _{I(off)}	-0.5 -0.5 -0.5 -0.5 -0.5 -0.3 -0.3 -0.3	—	—	V	V _{CC} = -5V, I _O = -100μA
	DDTB113EU DDTB123EU DDTB143EU DDTB114EU DDTB122JU DDTB113ZU DDTB123YU DDTB133HU	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	DDTB113EU DDTB123EU DDTB143EU DDTB114EU DDTB122JU DDTB113ZU DDTB123YU DDTB133HU	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
DC Current Gain	DDTB113EU DDTB123EU DDTB143EU DDTB114EU DDTB122JU DDTB113ZU DDTB123YU DDTB133HU	G _I	33 39 47 56 47 56 56 56	—	—	—	V _O = -5V, I _O = -50mA
	Gain-Bandwidth Product*		f _T	—	200	—	MHz

* Transistor - For Reference Only

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 _{CBO}	-50	—	—	V	I _C = -50μA
Collector-Emitter Breakdown Voltage		BV _{CEO}	-40	—	—	V	I _C = -1mA
Emitter-Base Breakdown Voltage		DDTB123TU DDTB143TU DDTB114TU DDTB114GU	BV _{EBO}	-5	—	V	I _E = -50μA I _E = -50μA I _E = -50μA I _E = -720μA
Collector Cutoff Current		I _{CBO}	—	—	-0.5	μA	V _{CB} = -50V
Emitter Cutoff Current		DDTB123TU DDTB143TU DDTB114TU DDTB114GU	I _{EBO}	— — — -300	—	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		DDTB123TU DDTB143TU DDTB114TU DDTB114GU	h _{FE}	100 100 100 56	250 250 250 —	600 600 600 —	I _C = -5mA, V _{CE} = -5V
Gain-Bandwidth Product*		f _T	—	200	—	MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

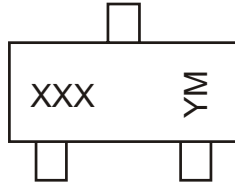
* Transistor - For Reference Only

Ordering Information (Note 2)

Device	Packaging	Shipping
DDTB113EU-7	SOT-323	3000/Tape & Reel
DDTB123EU-7	SOT-323	3000/Tape & Reel
DDTB143EU-7	SOT-323	3000/Tape & Reel
DDTB114EU-7	SOT-323	3000/Tape & Reel
DDTB122JU-7	SOT-323	3000/Tape & Reel
DDTB113ZU-7	SOT-323	3000/Tape & Reel
DDTB123YU-7	SOT-323	3000/Tape & Reel
DDTB133HU-7	SOT-323	3000/Tape & Reel
DDTB123TU-7	SOT-323	3000/Tape & Reel
DDTB143TU-7	SOT-323	3000/Tape & Reel
DDTB114TU-7	SOT-323	3000/Tape & Reel
DDTB114GU-7	SOT-323	3000/Tape & Reel

- Notes: 2. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 3. For Lead Free version (with Lead Free terminal finish) part number, please add "-F" suffix to part number above.
 Example: DDTB114GU-7-F.

Marking Information



XXX = Product Type Marking Code
 See Sheet 1 Diagrams
 YM = Date Code Marking
 Y = Year ex: N = 2002
 M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009
Code	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D