NEW PRODUCT

DDTB (xxxx) U

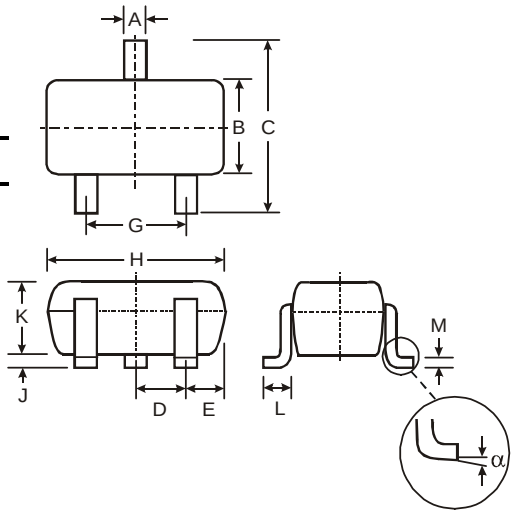
PNP PRE-BIASED 500 mA SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTD)
- Built-In Biasing Resistors, R1, R2
- **Lead Free/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3 and 4)**

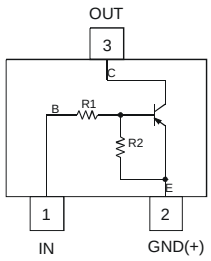
Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Code & Date Code Information: See Table Below & Page 3
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)



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)	Type Code
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



Schematic and Pin Configuration

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)	DDTB113EU	V_{IN}	+10 to -10	V
	DDTB123EU		+10 to -12	
	DDTB143EU		+10 to -30	
	DDTB114EU		+10 to -40	
	DDTB122JU		+5 to -5	
	DDTB113ZU		+5 to -10	
	DDTB123YU		+5 to -12	
	DDTB133HU		+6 to -20	
Input Voltage, (2) to (1)	DDTB123TU	$V_{EBO\ (MAX)}$	-5	V
	DDTB143TU			
	DDTB114TU			
	DDTB114GU			
Output Current	All	I_C	-500	mA
Power Dissipation		P_d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)		$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range		T_j, T_{STG}	-55 to +150	°C

Notes:
1. Mounted on FR4 PC Board with recommended pad layout at http://www.diodes.com/datasheets/ap02001.pdf.
2. No purposefully added lead.
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
4. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

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NEW PRODUCT

Electrical Characteristics @T_A = 25°C unless otherwise specified — R1, R2 Types

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTB113EU	$V_{I(off)}$	-0.5	—	—	V	V_{CC} = -5V, I_O = -100μA
	DDTB123EU		-0.5				
	DDTB143EU		-0.5				
	DDTB114EU		-0.5				
	DDTB122JU		-0.5				
	DDTB113ZU		-0.3				
	DDTB123YU		-0.3				
	DDTB133HU		-0.3				
	DDTB113EU	$V_{I(on)}$	—	—	-3.0	V	V_O = -0.3V, I_O = -20mA
	DDTB123EU				-3.0		V_O = -0.3V, I_O = -20mA
	DDTB143EU				-3.0		V_O = -0.3V, I_O = -20mA
	DDTB114EU				-3.0		V_O = -0.3V, I_O = -10mA
	DDTB122JU				-3.0		V_O = -0.3V, I_O = -30mA
	DDTB113ZU				-2.0		V_O = -0.3V, I_O = -20mA
	DDTB123YU				-2.0		V_O = -0.3V, I_O = -20mA
	DDTB133HU				-2.0		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	I_I	—	—	-7.2	mA	V_I = -5V
	DDTB123EU				-3.8		
	DDTB143EU				-1.8		
	DDTB114EU				-0.88		
	DDTB122JU				-28		
	DDTB113ZU				-7.2		
	DDTB123YU				-3.6		
	DDTB133HU				-2.4		
Output Current		$I_{O(off)}$	—	—	-0.5	μA	V_{CC} = -50V, V_I = 0V
DC Current Gain	DDTB113EU	G_I	33	—	—	—	V_O = -5V, I_O = -50mA
	DDTB123EU		39				
	DDTB143EU		47				
	DDTB114EU		56				
	DDTB122JU		47				
	DDTB113ZU		56				
	DDTB123YU		56				
	DDTB133HU		56				
Gain-Bandwidth Product*		f_T	—	200	—	MHz	V_{CE} = -10V, I_E = -5mA, f = 100MHz

* 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	BV_{EBO}	-5	—	—	V	I_E = -50μA
	DDTB143TU						I_E = -50μA
	DDTB114TU						I_E = -50μA
	DDTB114GU						I_E = -720μA
Collector Cutoff Current		I_{CBO}	—	—	-0.5	μA	V_{CB} = -50V
Emitter Cutoff Current	DDTB123TU	I_{EBO}	—	—	-0.5	μA	V_{EB} = -4V
	DDTB143TU		—		-0.5		
	DDTB114TU		—		-0.5		
	DDTB114GU		-300		-580		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	—	—	-0.3	V	I_C = -50mA, I_B = -2.5mA
DC Current Transfer Ratio	DDTB123TU	h_{FE}	100	250	600	—	I_C = -5mA, V_{CE} = -5V
	DDTB143TU		100	250	600		
	DDTB114TU		100	250	600		
	DDTB114GU		56	—	—		
Gain-Bandwidth Product*		f_T	—	200	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

* Transistor - For Reference Only

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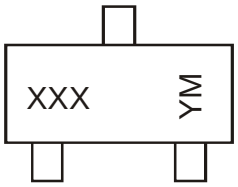
NEW PRODUCT

Ordering Information (Note 4 & 5)

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

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



XXX = Product Type Marking Code, See Table on Page 1
YM = Date Code Marking
Y = Year ex: T = 2006
M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	N	P	R	S	T	U	V	W	X	Y	Z

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

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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
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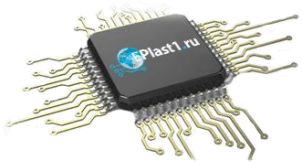
- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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