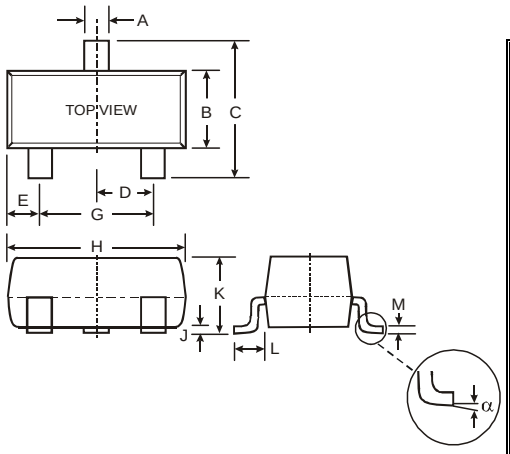
NEW PRODUCT

DDTB (xxxx) C

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, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2 and 3)**

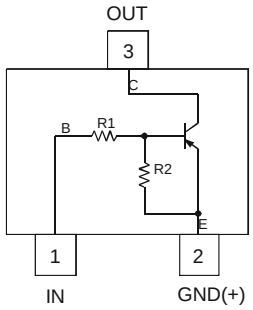


SOT-23		
Dim	**Min**	**Max**
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Marking Information: See Table Below & Page 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)

P/N	R1 (NOM)	R2 (NOM)	Type Code
DDTB113EC	1K	1K	P60
DDTB123EC	2.2K	2.2K	P61
DDTB143EC	4.7K	4.7K	P62
DDTB114EC	10K	10K	P63
DDTB122JC	0.22K	4.7K	P64
DDTB113ZC	1K	10K	P65
DDTB123YC	2.2K	10K	P66
DDTB133HC	3.3K	10K	P67
DDTB123TC	2.2K	OPEN	P69
DDTB143TC	4.7K	OPEN	P70
DDTB114TC	10K	OPEN	P71
DDTB114GC	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)	DDTB113EC DDTB123EC DDTB143EC DDTB114EC DDTB122JC DDTB113ZC DDTB123YC DDTB133HC	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)	DDTB123TC DDTB143TC DDTB114TC DDTB114GC	$V_{EBO\ (MAX)}$	-5	V
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. Halogen and Antimony Free.
3. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 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	DDTB113EC	$V_{I(off)}$	-0.5	—	—	V	V_{CC} = -5V, I_O = -100µA
	DDTB123EC		-0.5				
	DDTB143EC		-0.5				
	DDTB114EC		-0.5				
	DDTB122JC		-0.5				
	DDTB113ZC		-0.3				
	DDTB123YC		-0.3				
	DDTB133HC		-0.3				
	DDTB113EC	$V_{I(on)}$	—	—	-3.0	V	V_O = -0.3V, I_O = -20mA
	DDTB123EC				-3.0		V_O = -0.3V, I_O = -20mA
	DDTB143EC				-3.0		V_O = -0.3V, I_O = -20mA
	DDTB114EC				-3.0		V_O = -0.3V, I_O = -10mA
	DDTB122JC				-3.0		V_O = -0.3V, I_O = -30mA
	DDTB113ZC				-2.0		V_O = -0.3V, I_O = -20mA
	DDTB123YC				-2.0		V_O = -0.3V, I_O = -20mA
	DDTB133HC				-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	DDTB113EC	I_I	—	—	-7.2	mA	V_I = -5V
	DDTB123EC				-3.8		
	DDTB143EC				-1.8		
	DDTB114EC				-0.88		
	DDTB122JC				-28		
	DDTB113ZC				-7.2		
	DDTB123YC				-3.6		
	DDTB133HC				-2.4		
Output Current		$I_{O(off)}$	—	—	-0.5	µA	V_{CC} = -50V, V_I = 0V
DC Current Gain	DDTB113EC	G_I	33	—	—	—	V_O = -5V, I_O = -50mA
	DDTB123EC		39				
	DDTB143EC		47				
	DDTB114EC		56				
	DDTB122JC		47				
	DDTB113ZC		56				
	DDTB123YC		56				
	DDTB133HC		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	DDTB123TC	BV_{EBO}	-5	—	—	V	I_E = -50µA
	DDTB143TC						I_E = -50µA
	DDTB114TC						I_E = -50µA
	DDTB114GC						I_E = -720µA
Collector Cutoff Current		I_{CBO}	—	—	-0.5	µA	V_{CB} = -50V
Emitter Cutoff Current	DDTB123TC	I_{EBO}	—	—	-0.5	µA	V_{EB} = -4V
	DDTB143TC		—		-0.5		
	DDTB114TC		—		-0.5		
	DDTB114GC		-300		-580		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	—	—	-0.3	V	I_C = -50mA, I_B = -2.5mA
DC Current Transfer Ratio	DDTB123TC	h_{FE}	100	250	600	—	I_C = -5mA, V_{CE} = -5V
	DDTB143TC		100	250	600		
	DDTB114TC		100	250	600		
	DDTB114GC		56	—	—		
Gain-Bandwidth Product*		f_T	—	200	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

* Transistor - For Reference Only

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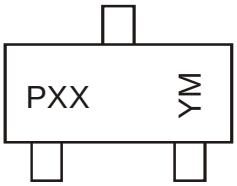
NEW PRODUCT

Ordering Information (Note 4)

Device	Packaging	Shipping
DDTB113EC-7-F	SOT-23	3000/Tape & Reel
DDTB123EC-7-F	SOT-23	3000/Tape & Reel
DDTB143EC-7-F	SOT-23	3000/Tape & Reel
DDTB114EC-7-F	SOT-23	3000/Tape & Reel
DDTB122JC-7-F	SOT-23	3000/Tape & Reel
DDTB113ZC-7-F	SOT-23	3000/Tape & Reel
DDTB123YC-7-F	SOT-23	3000/Tape & Reel
DDTB133HC-7-F	SOT-23	3000/Tape & Reel
DDTB123TC-7-F	SOT-23	3000/Tape & Reel
DDTB143TC-7-F	SOT-23	3000/Tape & Reel
DDTB114TC-7-F	SOT-23	3000/Tape & Reel
DDTB114GC-7-F	SOT-23	3000/Tape & Reel

Notes: 4. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



PXX = Product Type Marking Code, See Table on Page 1
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	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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