



DDTB (LO-R1) C

PNP PRE-BIASED 500 mA SURFACE MOUNT TRANSISTOR

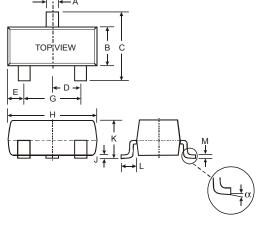
Features

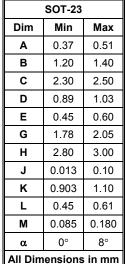
- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTD)
- · Built-In Biasing Resistors
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 1 and 3)

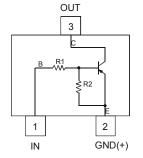
Mechanical Data

- 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
DDTB122LC	0.22KΩ	10KΩ	P75
DDTB142JC	0.47 K Ω	10KΩ	P76
DDTB122TC	0.22 K Ω	OPEN	P77
DDTB142TC	0.47ΚΩ	OPEN	P78







Schematic and Pin Diagram

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit	
Supply Voltage, (3) to (2)		Vcc	-50	V	
Input Voltage, (1) to (2)	DDTB122LC DDTB142JC	V _{IN}	+5 to -6 +5 to -6	V	
Input Voltage, (2) to (1)	DDTB122TC DDTB142TC	V _{EBO (MAX)}	-5	V	
Output Current	All	I _C	-500	mA	
Power Dissipation	(Note 2)	P _D	200	mW	
Thermal Resistance, Junction to Ambient Air	(Note 2)	$R_{ hetaJA}$	625	°C/W	
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C	

Notes:

- 1. No purposefully added lead. Halogen and Antimony Free.
- No purpose taily added lead. Hatelger and Atthinory Free.
 Mounted on FR4 PC Board with recommended pad layout at http://www.diodes.com/datasheets/ap02001.pdf.
- 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 Sb₂O₃ Fire Retardants.



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

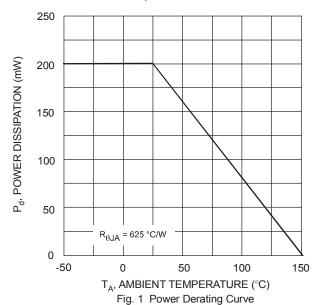
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
Input Voltage	DDTB122LC DDTB142JC	V _{I(off)}	-0.3 -0.3	_	_	V	V _{CC} = -5V, I _O = -100μA
	DDTB122LC DDTB142JC			$V_O = -0.3V$, $I_O = -20mA$ $V_O = -0.3V$, $I_O = -20mA$			
Output Voltage		$V_{O(on)}$	_	_	-0.3V	V	$I_{O}/I_{I} = -50$ mA/-2.5mA
Input Current DDTB122LC DDTB142JC		l _l		_	-28 -13	mA	V _I = -5V
Output Current		I _{O(off)}	_	_	-0.5	μА	$V_{CC} = -50V, V_I = 0V$
DC Current Gain DDTB122LC DDTB142JC		G _l	56 56	_		_	V _O = -5V, I _O = -50mA
Gain-Bandwidth Product*		f⊤		200		MHz	V _{CE} = -10V, I _E = -5mA, f = 100MHz

^{*} Transistor - For Reference Only

Electrical Characteristics @TA = 25°C unless otherwise specified R1- Only Types

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
Collector-Base Breakdown Voltage	BV _{CBO}	-50	_	_	V	$I_{C} = -50 \mu A$	
Collector-Emitter Breakdown Voltage		BV _{CEO}	-40	_	_	V	I _C = -1mA
Emitter-Base Breakdown Voltage DDTB122TC DDTB142TC		BV _{EBO}	-5	_		٧	$I_E = -50\mu A$ $I_E = -50\mu A$
Collector Cutoff Current		I _{CBO}	_	_	-0.5	μА	V _{CB} = -50V
Emitter Cutoff Current DDTB122TC DDTB142TC		I _{EBO}	_	_	-0.5 -0.5	μА	V _{EB} = -4V
Collector-Emitter Saturation Voltage		V _{CE(sat)}	_	_	-0.3	V	$I_C = -50$ mA, $I_B = -2.5$ mA
DC Current Transfer Ratio DDTB122TC DDTB142TC		h _{FE}	100 100	250 250	600 600		I _C = -5mA, V _{CE} = -5V
Gain-Bandwidth Product*		f⊤	_	200		MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

^{*} Transistor - For Reference Only



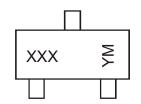


Ordering Information (Note 4)

Device	Packaging	Shipping
DDTB122LC-7-F	SOT-23	3000/Tape & Reel
DDTB142JC-7-F	SOT-23	3000/Tape & Reel
DDTB122TC-7-F	SOT-23	3000/Tape & Reel
DDTB142TC-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



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	200	6 2007			2008		2009			2011	2012	
Code	Т		U		V W		Х		Υ	Z		
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code		^	^		-	^	_	0	^	^	N.I.	_

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