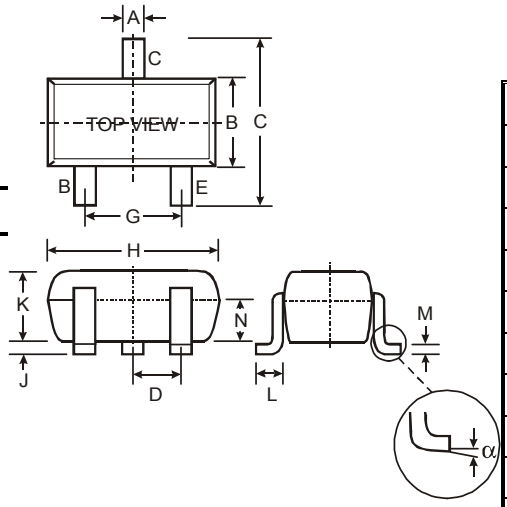
NEW PRODUCT

DDTA (R1-ONLY SERIES) E

PNP PRE-BIASED SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

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

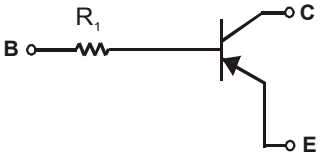


SOT-523			
Dim	**Min**	**Max**	**Typ**
A	0.15	0.30	0.22
B	0.75	0.85	0.80
C	1.45	1.75	1.60
D	—	—	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
J	0.00	0.10	0.05
K	0.60	0.80	0.75
L	0.10	0.30	0.22
M	0.10	0.20	0.12
N	0.45	0.65	0.50
α	0°	8°	—
All Dimensions in mm			

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Marking & Date Code Information: See Diagrams & Page 4
- Ordering Information: See Page 4
- Weight: 0.002 grams (approximate)

P/N	R1 (NOM)	MARKING
DDTA113TE	1KΩ	P01
DDTA123TE	2.2KΩ	P03
DDTA143TE	4.7KΩ	P07
DDTA114TE	10KΩ	P12
DDTA124TE	22KΩ	P16
DDTA144TE	47KΩ	P19
DDTA115TE	100KΩ	P23
DDTA125TE	200KΩ	P25



SCHEMATIC DIAGRAM

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C (Max)	-100	mA
Power Dissipation	P_d	150	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	833	°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 as shown on Diodes Inc., suggested pad layout document AP02001, which can be found on our website 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 UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

© Diodes Incorporated

NEW PRODUCT

Electrical Characteristics @T_A = 25°C unless otherwise specified

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}	-50	—	—	V	I_C = -1mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	I_E = -50μA
Collector Cutoff Current	I_{CBO}	—	—	-0.5	μA	V_{CB} = -50V
Emitter Cutoff Current	I_{EBO}	—	—	-0.5	μA	V_{EB} = -4V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	—	-0.3	V	I_C/I_B = -10mA/-1mA DDTA113TE I_C/I_B = -5mA/-0.5mA DDTA123TE I_C/I_B = -2.5mA/-.25mA DDTA143TE I_C/I_B = -1mA/-.1mA DDTA114TE I_C/I_B = -5mA/-0.5mA DDTA124TE I_C/I_B = -2.5mA/-.25mA DDTA144TE I_C/I_B = -1mA/-0.1mA DDTA115TE I_C/I_B = -.5mA/-.05mA DDTA125TE
DC Current Transfer Ratio	h_{FE}	100	250	600	—	I_C = -1mA, V_{CE} = -5V
Gain-Bandwidth Product*	f_T	—	250	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

* Transistor - For Reference Only

© Diodes Incorporated

Typical Curves – DDTA114TE

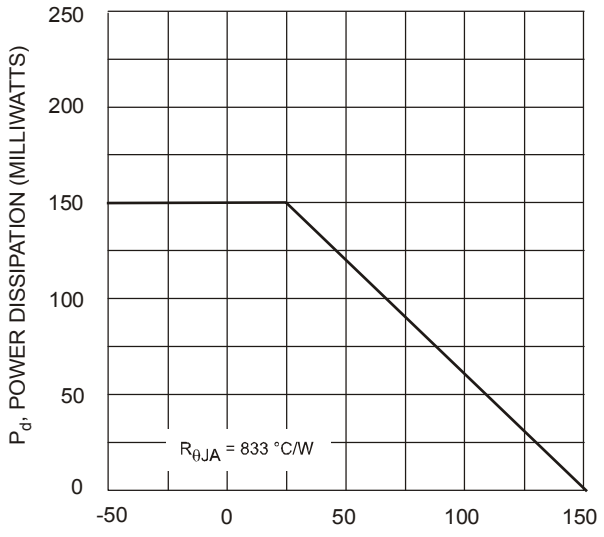


Fig. 1 Derating Curve

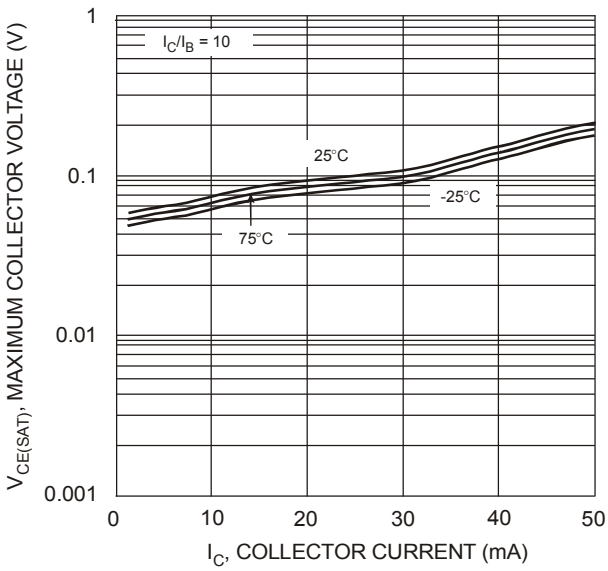


Fig. 2 $V_{CE(SAT)}$ vs. I_C

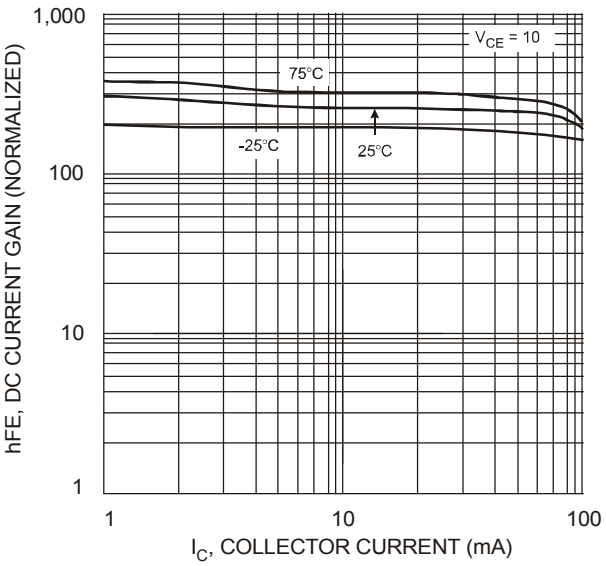


Fig. 3 DC Current Gain

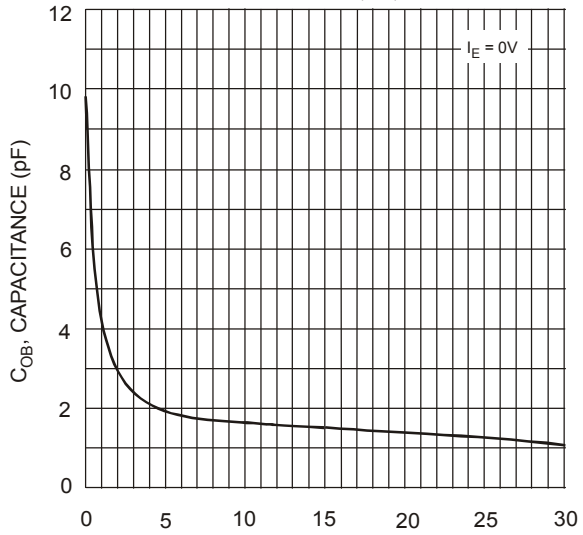


Fig. 4 Output Capacitance

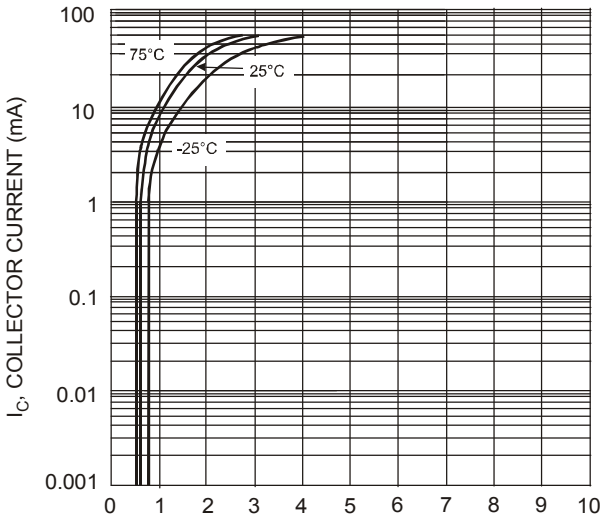


Fig. 5 Collector Current vs. Input Voltage

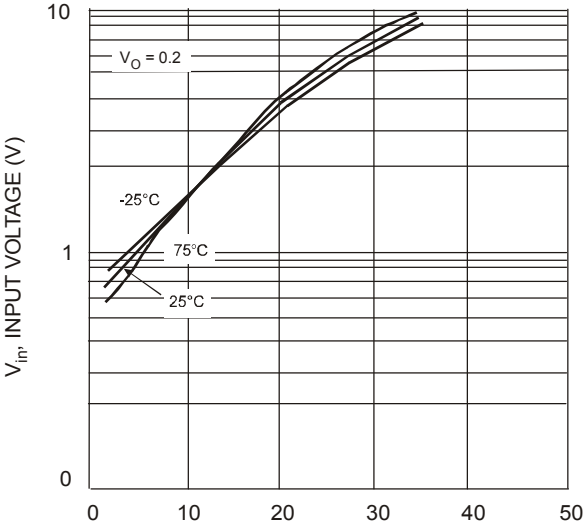


Fig. 6 Input Voltage vs. Collector Current

© Diodes Incorporated

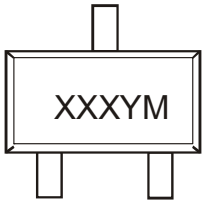
NEW PRODUCT

Ordering Information (Note 5)

Device	Packaging	Shipping
DDTA113TE-7-F	SOT-523	3000/Tape & Reel
DDTA123TE-7-F	SOT-523	3000/Tape & Reel
DDTA143TE-7-F	SOT-523	3000/Tape & Reel
DDTA114TE-7-F	SOT-523	3000/Tape & Reel
DDTA124TE-7-F	SOT-523	3000/Tape & Reel
DDTA144TE-7-F	SOT-523	3000/Tape & Reel
DDTA115TE-7-F	SOT-523	3000/Tape & Reel
DDTA125TE-7-F	SOT-523	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 Page 1, e.g. P01 = DDTA113TE)
YM = Date Code Marking
Y = Year ex: T = 2006
M = Month ex: 9 = September

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	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

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

© Diodes Incorporated

LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru