NEW PRODUCT

DDTA (LO-R1) E

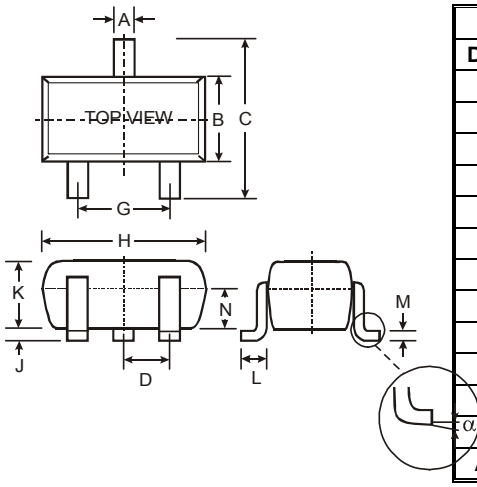
PNP PRE-BIASED 100 mA SURFACE MOUNT TRANSISTOR

Features

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

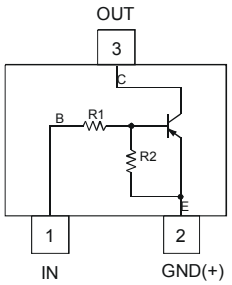
Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Matte Tin Solderable per MIL-STD 202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Terminal Connections: See Diagram
- Marking Information: See Table Below & Page 3
- Ordering Information: See Page 3
- Weight: 0.002 grams (approximate)



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			

P/N	R1 (NOM)	R2 (NOM)	Type Code
DDTA122LE	0.22KΩ	10KΩ	P81
DDTA142JE	0.47KΩ	10KΩ	P82
DDTA122TE	0.22KΩ	OPEN	P83
DDTA142TE	0.47KΩ	OPEN	P84



Schematic and Pin Diagram

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Supply Voltage, (2) to (3)		V_{CC}	-50	V
Input Voltage, (1) to (2)	DDTA122LE DDTA142JE	V_{IN}	+5 to -6 +5 to -6	V
Input Voltage, (2) to (1)	DDTA122TE DDTA142TE	$V_{EBO\ (MAX)}$	-5	V
Output Current	All	I_C	-100	mA
Power Dissipation	(Note 1)	P_d	150	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 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.

NEW PRODUCT

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

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTA122LE DDTA142JE	$V_{I(off)}$	-0.3 -0.3	—	—	V	V_{CC} = -5V, I_O = -100μA
	DDTA122LE DDTA142JE	$V_{I(on)}$	—	—	-2.0 -2.0	V	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 = -5mA/-0.25mA
Input Current	DDTA122LE DDTA142JE	I_I	—	—	-28 -13	mA	V_I = -5V
Output Current		$I_{O(off)}$	—	—	-0.5	μA	V_{CC} = -50V, V_I = 0V
DC Current Gain	DDTA122LE DDTA142JE	G_I	56 56	—	—	—	V_O = -5V, I_O = -10mA
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 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	DDTA122TE DDTA142TE	BV_{EBO}	-5	—	—	V	I_E = -50μA I_E = -50μA
Collector Cutoff Current		I_{CBO}	—	—	-0.5	μA	V_{CB} = -50V
Emitter Cutoff Current	DDTA122TE DDTA142TE	I_{EBO}	— —	—	-0.5 -0.5	μA	V_{EB} = -4V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	—	—	-0.3	V	I_C = -5mA, I_B = -0.25mA
DC Current Transfer Ratio	DDTA122TE DDTA142TE	h_{FE}	100 100	250 250	600 600	—	I_C = -1mA, V_{CE} = -5V
Gain-Bandwidth Product*		f_T	—	200	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

* Transistor - For Reference Only

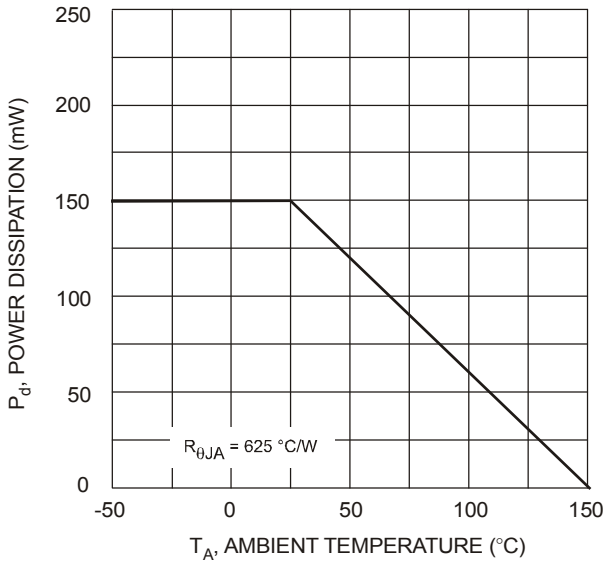


Fig. 1 Power Derating Curve

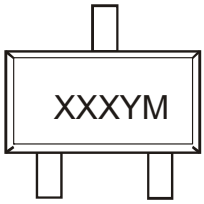
NEW PRODUCT

Ordering Information (Note 5)

Device	Packaging	Shipping
DDTA122LE-7-F	SOT-523	3000/Tape & Reel
DDTA142JE-7-F	SOT-523	3000/Tape & Reel
DDTA122TE-7-F	SOT-523	3000/Tape & Reel
DDTA142TE-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)
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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Bipolar Transistors - Pre-Biased ***category:***

Click to view products by Diodes Incorporated ***manufacturer:***

Other Similar products are found below :

MMUN2217LT1G FP101-TL-E RN1607(TE85L,F) DRC9A14E0L DTA124GKAT146 DTA144WETL DTA144WKAT146 DTC113EET1G DTC115TETL DTC115TKAT146 DTC124TETL DTC144ECA-TP DTC144VUAT106 MUN5241T1G BCR158WH6327XTSA1 NSBA114TDP6T5G NSBA143TF3T5G NSBA143ZF3T5G NSBC114EF3T5G NSBC114YF3T5G NSBC123TF3T5G NSBC143TF3T5G NSVMUN2212T1G NSVMUN5111DW1T3G NSVMUN5314DW1T3G NSVUMC2NT1G SMMUN2134LT1G SMUN2212T1G SMUN5235T1G SMUN5330DW1T1G SSVMUN5312DW1T2G 2SC3650-TD-E RN1303(TE85L,F) RN4605(TE85L,F) BCR135SH6327XT TTEPROTOTYPE79 UMC3NTR DTA113EET1G EMA2T2R EMH15T2R SDTA114YET1G SMMUN2111LT3G SMMUN2113LT1G SMMUN2114LT1G SMMUN2211LT3G SMUN2214T3G SMUN5113DW1T1G SMUN5335DW1T1G NSBA114YF3T5G NSBC114TF3T5G