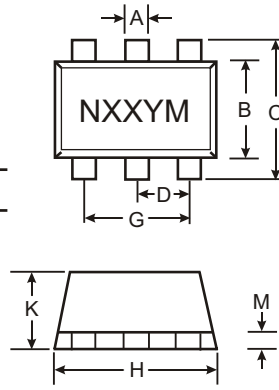


Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDA)
- Built-In Biasing Resistors
- Lead-Free Device

Mechanical Data

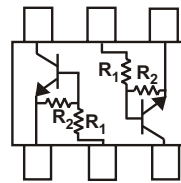
- Case: SOT-563, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Finish - Matte Tin Solderable per MIL-STD-202, Method 208 (Note 2)
- Terminal Connections: See Diagram
- Weight: 0.005 grams (approx.)



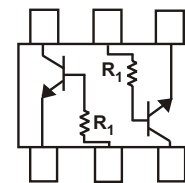
SOT-563			
Dim	Min	Max	Typ
A	0.15	0.30	0.25
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	0.50		
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.56	0.60	0.60
L	0.15	0.25	0.20
M	0.10	0.18	0.11
All Dimensions in mm			

SEE NOTE 1

P/N	R1 (NOM)	R2 (NOM)	MARKING
DDC122LH	0.22K Ω	10K Ω	N81
DDC142JH	0.47K Ω	10K Ω	N82
DDC122TH	0.22K Ω	OPEN	N83
DDC142TH	0.47K Ω	OPEN	N84



R₁, R₂



R₁ Only

SCHEMATIC DIAGRAM, TOP VIEW

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-5 to +6	V
Input Voltage	V _{EBO (MAX)}	-5 to +6	V
Output Current	I _C	5	V
Power Dissipation (Note 2)	P _d	100	mA
Thermal Resistance, Junction to Ambient Air (Note 3)	R _{θJA}	150	mW
Operating and Storage and Temperature Range	T _J , T _{STG}	833	°C/W
		-55 to +150	°C

- Note:
1. Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).
 2. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
 3. Mounted on FR4 Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.

Electrical Characteristics @ T_A = 25°C unless otherwise specified

R1, R2 Types

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDC122LH DDC142JH	V _{I(off)}	0.3 0.3	—	—	V	V _{CC} = 5V, I _O = 100μA
	DDC122LH DDC142JH	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	DDC122LH DDC142JH	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	DDC122LH DDC142JH	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

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	DDC122TH DDC142TH	BV _{EBO}	5	—	—	V	I _E = 50μA I _E = 50μA
Collector Cutoff Current		I _{CBO}	—	—	0.5	μA	V _{CB} = 50V
Emitter Cutoff Current	DDC122TH DDC142TH	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	DDC122TH DDC142TH	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

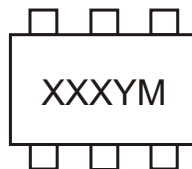
* Transistor - For Reference Only

Ordering Information (Note 4)

Device	Packaging	Shipping
DDC122LH-7	SOT-563	3000/Tape & Reel
DDC142JH-7	SOT-563	3000/Tape & Reel
DDC122TH-7	SOT-563	3000/Tape & Reel
DDC142TH-7	SOT-563	3000/Tape & Reel

Notes: 1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.

4. 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: P = 2003

M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009
Code	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

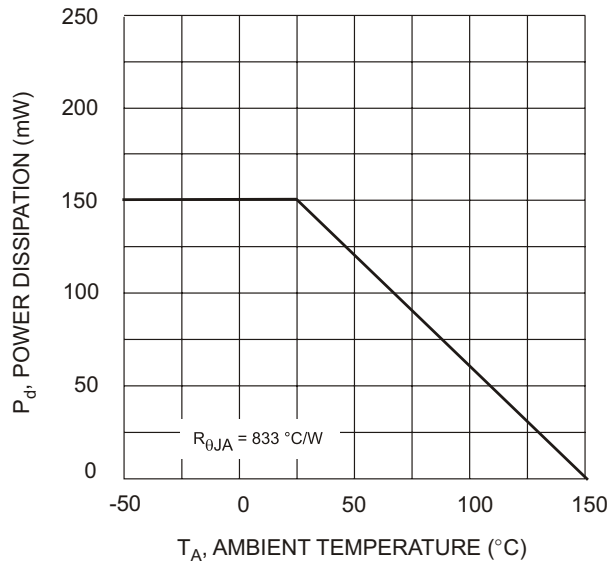


Fig. 1 Derating Curve



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.