



<u>DDC (LO-R1) H</u>

NPN PRE-BIASED SMALL SIGNAL DUAL SURFACE MOUNT TRANSISTOR

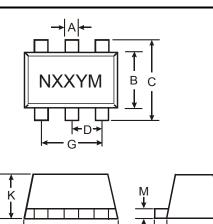
Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDA)
- Built-In Biasing Resistors
- Lead Free By Design/RoHS Compliant (Note 3)
- "Green" Device (Note 4 and 5)

Mechanical Data

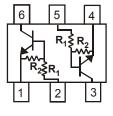
- Case: SOT-563, Molded Plastic
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.005 grams (approximate)

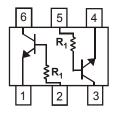
P/N	R1 (NOM)	R2 (NOM)	MARKING
DDC122LH	0.22KΩ	10KΩ	N81
DDC142JH	0.47KΩ	10KΩ	N82
DDC122TH	0.22KΩ	OPEN	N83
DDC142TH	0.47KΩ	OPEN	N84



	SOT	-563	
Dim	Min	Мах	Тур
Α	0.15	0.30	0.25
в	1.10	1.25	1.20
С	1.55	1.70	1.60
D		0.50	
G	0.90	1.10	1.00
Н	1.50	1.70	1.60
к	0.56	0.60	0.60
L	0.15	0.25	0.20
М	0.10	0.18	0.11
All D	imens	ions in	mm

SEE NOTE 1





R1 Only

R1, R2

SCHEMATIC DIAGRAM, TOP VIEW

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Supply Voltage (6) to (1) and (3) to (4)		V _{CC}	50	V
Input Voltage (2) to (1) and (5) to (4)	DDC122LH DDC142JH	V _{IN}	-5 to +6 -5 to +6	V
Input Voltage (1) to (2) and (4) to (5)	DDC122TH DDC142TH	V _{EBO (MAX)}	5	V
Output Current	All	lc	100	mA
Power Dissipation		Pd	150	mW
Thermal Resistance, Junction to Ambient Air	(Note 2)	$R_{ ext{ heta}JA}$	833	°C/W

Notes: 1. Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).

2. Mounted on FR4 Board with recommended pad layout at http://www.diodes.com/datasheets/ap02001.pdf.

3. No purposefully added lead.

4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

5. 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

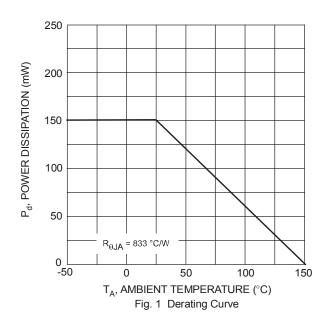


Electrical Characteristics	S @T _A = 25°C ι	unless otherwis	e specified	ł	R1, F	/pes	
Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition
put Voltage DDC122LH		V _{I(off)}	0.3 0.3		_	V	V _{CC} = 5V, I _O = 100μA
	DDC122LH DDC142JH	V _{l(on)}	_	_	2.0 2.0	V	$V_{O} = 0.3V$, $I_{O} = 20mA$ $V_{O} = 0.3V$, $I_{O} = 20mA$
Output Voltage		V _{O(on)}	_	_	0.3V	V	I _O /I _I = 5mA/0.25mA
Input Current	DDC122LH DDC142JH	lı	_		28 13	mA	V ₁ = 5V
Output Current		I _{O(off)}	_	_	0.5	μA	V _{CC} = 50V, V _I = 0V
DC Current Gain	DDC122LH DDC142JH	GI	56 56	_	_	_	V _O = 5V, I _O = 10mA
Gain-Bandwidth Product*		f⊤		200	_	MHz	V _{CE} = 10V, I _E = 5mA, f = 100MHz

* Transistor - For Reference Only

Electrical Characteristic	CS @T _A = 2	5°C unless othe	erwise spe	cified	R1-0	Only	
Characteristic		Symbol	Min	Тур	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



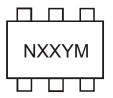


Ordering Information (Note 6)

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

Marking Information



NXX = 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	2002	2003	2004	200	5 200	06 20	07 2	800	2009	2010	2011	2012
Code	Ν	Р	R	S	Т	. L	J	V	W	Х	Y	Z
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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