



DDA (LO-R1) U

PNP PRE-BIASED SMALL SIGNAL DUAL SURFACE MOUNT TRANSISTOR

Features

- **Epitaxial Planar Die Construction**
- Complementary NPN Types Available (DDC)
- **Built-In Biasing Resistors**
- Lead-Free/RoHS Compliant (Note 3)
- "Green" Device (Note 4 and 5)

Mechanical Data

Case: SOT-363

P/N

DDA122LU

DDA142JU

DDA122TU

DDA142TU

- Case Material: Molded Plastic, "Green" Molding Compound. 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).

R1 (NOM)

0.22K

0.47K

0.22K

0.47K

R2 (NOM)

10K

10K

OPEN

OPEN

Type Code

P81 P82

P83

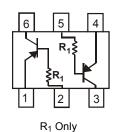
P84

- Terminal Connections: See Diagram
- Marking Information: See Page 3
- Type Code: See Table Below
- Ordering Information: See Page 3
- Weight: 0.0058 grams (approximate)

	→ A	- C 	
↑ K ↓ ↑ J	H H D F		M ↓ ↑ ↑

SOT-363							
Dim	Min	Max					
Α	0.10	0.30					
В	1.15	1.35					
С	2.00	2.20					
D	0.65 Nominal						
F	0.30	0.40					
Н	1.80	2.20					
J		0.10					
K	0.90	1.00					
L	0.25	0.40					
М	0.10	0.25					
α	0°	8°					
All Dim	ensions	in mm					

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SCHEMATIC DIAGRAM

Maximum Ratings NPN Section

$@T_A = 25^{\circ}C \text{ unl}$	ess otherwise	specified
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Characteristic	Symbol	Value	Unit	
Supply Voltage (1) to (6) and (4) to (3)		V _{CC}	-50	V
Input Voltage (1) to (2) and (4) to (5)	DDA122LU DDA142JU	VIN	+5 to -6 +5 to -6	V
Input Voltage (1) to (2) and (4) to (5)	DDA122TU DDA142TU	V _{EBO (MAX)}	-5	V
Output Current	All	Ic	-100	mA
Power Dissipation (Note 2)		P _d	200	mW
Thermal Resistance, Junction to Ambient Air (No	ote 2)	$R_{ heta JA}$	625	°C/W
Operating and Storage Temperature Range		T _j , T _{STG}	-55 to +150	°C

Notes:

- Mounted on FR4 PC Board with recommended pad layout at http://www.diodes.com/datasheets/ap02001.pdf.
- 150mW per element must not be exceeded. No purposefully added lead.
- Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- 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 @TA = 25°C unless otherwise specified R1, R2 Types

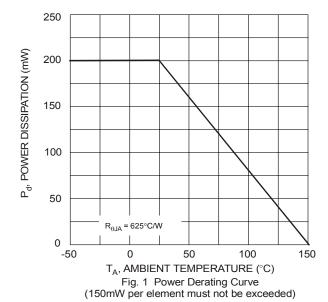
Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition
Input Voltage	DDA122LU DDA142JU	$V_{\text{I(off)}}$	-0.3 -0.3			٧	V_{CC} = -5V, I_{O} = -100 μ A
	DDA122LU DDA142JU	$V_{I(on)}$			-2.0 -2.0		$V_O = -0.3V$, $I_O = -20mA$ $V_O = -0.3V$, $I_O = -20mA$
Output Voltage		$V_{O(on)}$	_	_	-0.3V	V	$I_{O}/I_{I} = -5$ mA/-0.25mA
Input Current	DDA122LU DDA142JU	II.	_	_	-28 -13	mA	V _I = -5V
Output Current		I _{O(off)}	_	_	-0.5	μА	V _{CC} = -50V, V _I = 0V
DC Current Gain	DDA122LU DDA142JU	Gl	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 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	DDA122TU DDA142TU	BV _{EBO}	-5		_	V	$I_E = -50\mu A$ $I_E = -50\mu A$
Collector Cutoff Current		I _{CBO}	_	_	-0.5	μА	V _{CB} = -50V
Emitter Cutoff Current	DDA122TU DDA142TU	I _{EBO}			-0.5 -0.5	μА	V _{EB} = -4V
Collector-Emitter Saturation Voltage		V _{CE(sat)}			-0.3	V	$I_C = -5mA$, $I_B = -0.25mA$
DC Current Transfer Ratio DDA122TU DDA142TU		h _{FE}	100 100	250 250	600 600	_	I _C = -1mA, V _{CE} = -5V
Gain-Bandwidth Product*		f⊤		200	_	MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

^{*} Transistor - For Reference Only



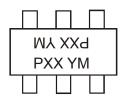


Ordering Information (Note 6)

Device	Packaging	Shipping		
DDA122LU-7-F	SOT-363	3000/Tape & Reel		
DDA142JU-7-F	SOT-363	3000/Tape & Reel		
DDA122TU-7-F	SOT-363	3000/Tape & Reel		
DDA142TU-7-F	SOT-363	3000/Tape & Reel		

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

Marking Information



Pxx = Product Type Marking Code See Page 1 Diagrams YM = Date Code Marking Y = Year ex: T = 2006 M = Month ex: 9 = September

Date Code Key

Year	2006		2007		2008	20	009	2010		2011	2	2012	
Code		Т	U		V	,	W	Х		Υ		Z	
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Month	Jan	1 65	IVIAI	- Abi	iviay	Juli	oui	Aug	Och	Oct	1101	500	

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