



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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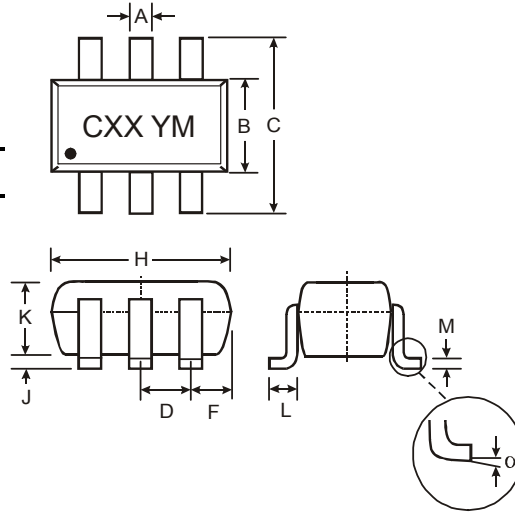


Features

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

Mechanical Data

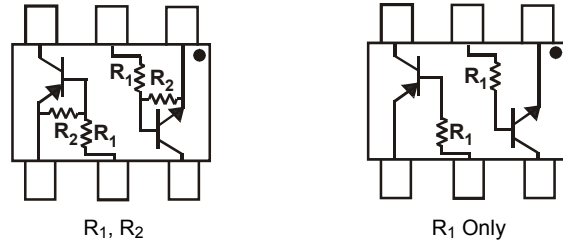
- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Matte Tin Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Marking Information: See Page 4
- Type Code: See Table Below
- Ordering Information: See Page 4
- Weight: 0.006 grams (approximate)



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
α	0°	8°

All Dimensions in mm

P/N	R1 (NOM)	R2 (NOM)	Type Code
DCX122LU	0.22K	10K	C81
DCX142JU	0.47K	10K	C82
DCX122TU	0.22K	OPEN	C83
DCX142TU	0.47K	OPEN	C84



SCHEMATIC DIAGRAM

Maximum Ratings NPN Section

@T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	50	V
Input Voltage	DCX122LU DCX142JU V _{IN}	-5 to +6	V
Input Voltage	DCX122TU DCX142TU V _{EBO (MAX)}	5	V
Output Current	All I _C	100	mA
Power Dissipation	(Note 1, 2) P _d	200	mW
Thermal Resistance, Junction to Ambient Air	(Note 2) R _{θJA}	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. 150mW per element must not be exceeded.
 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.

Maximum Ratings PNP Section @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	-50	V
Input Voltage	DCX122LU DCX142JU V _{IN}	+5 to -6 +5 to -6	V
Input Voltage	DCX122TU DCX142TU V _{EBO (MAX)}	-5	V
Output Current	All I _C	-100	mA
Power Dissipation	(Note 1,2) P _d	200	mW
Thermal Resistance, Junction to Ambient Air	(Note 1,2) R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics NPN Section @T_A = 25°C unless otherwise specified **R1, R2 Types**

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DCX122LU DCX142JU V _{I(off)}	0.3 0.3	—	—	V	V _{CC} = 5V, I _O = 100μA
	DCX122LU DCX142JU 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	DCX122LU DCX142JU 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	DCX122LU DCX142JU 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 NPN Section @T_A = 25°C unless otherwise specified **R1 Only**

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CB0}	50	—	—	V	I _C = 50μA
Collector-Emitter Breakdown Voltage	BV _{CEO}	40	—	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	DCX122TU DCX142TU BV _{EBO}	5	—	—	V	I _E = 50μA I _E = 50μA
Collector Cutoff Current	I _{CBO}	—	—	0.5	μA	V _{CB} = 50V
Emitter Cutoff Current	DCX122TU DCX142TU 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	DCX122TU DCX142TU 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

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

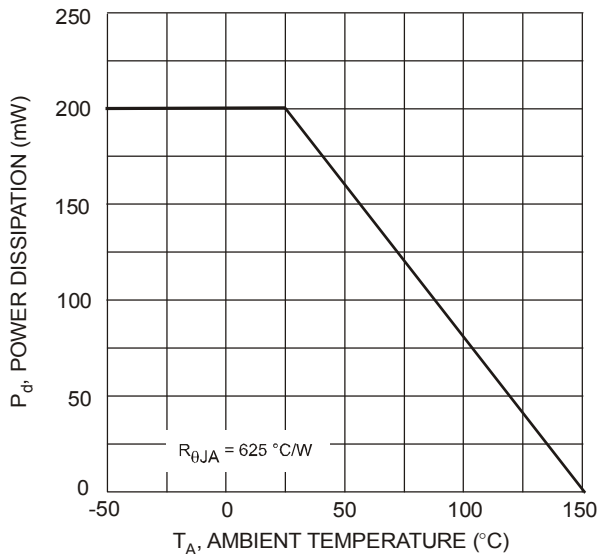
Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DCX122LU DCX142JU	V _{I(off)}	-0.3 -0.3	—	—	V	V _{CC} = -5V, I _O = -100μA
	DCX122LU DCX142JU	V _{I(on)}	—	—	-2.0 -2.0	V	V _O = -0.3V, I _O = -20mA V _O = -0.3V, I _O = -20mA
Output Voltage		V _{O(on)}	—	—	-0.3V	V	I _O /I _I = -5mA/-0.25mA
Input Current		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		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 PNP Section @T_A = 25°C unless otherwise specified R1 Only Types

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV _{CB0}	-50	—	—	V	I _C = -50μA
Collector-Emitter Breakdown Voltage		BV _{CEO}	-40	—	—	V	I _C = -1mA
Emitter-Base Breakdown Voltage		DCX122TU DCX142TU	BV _{EBO}	-5	—	V	I _E = -50μA I _E = -50μA
Collector Cutoff Current		I _{CB0}	—	—	-0.5	μA	V _{CB} = -50V
Emitter Cutoff Current		DCX122TU DCX142TU	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		DCX122TU DCX142TU	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



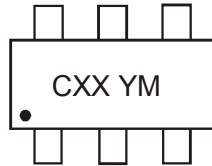
(150mW per element must not be exceeded).

Ordering Information (Note 6)

Device	Packaging	Shipping
DCX122LU-7-F	SOT-363	3000/Tape & Reel
DCX142JU-7-F	SOT-363	3000/Tape & Reel
DCX122TU-7-F	SOT-363	3000/Tape & Reel
DCX142TU-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



CXX = Product Type Marking Code, See Table on Page 1
 YM = Date Code Marking
 Y = Year ex: N = 2002
 M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	N	P	R	S	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

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