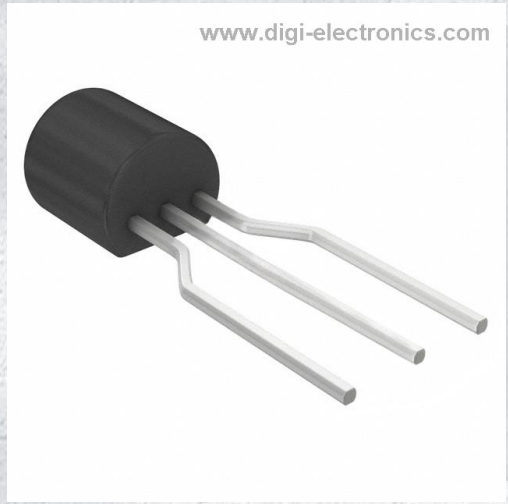
BF421ZL1 Datasheet



DiGi Electronics Part Number	BF421ZL1-DG
Manufacturer	onsemi
Manufacturer Product Number	BF421ZL1
Description	TRANS PNP 300V 0.05A TO92
Detailed Description	Bipolar (BJT) Transistor PNP 300 V 50 mA 60MHz 830 mW Through Hole TO-92 (TO-226)

https://www.DiGi-Electronics.com

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
BF421ZL1	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
PNP	50 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
300 V	500mV @ 2mA, 20mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
10nA (ICBO)	50 @ 25mA, 20V
Power - Max:	Frequency - Transition:
830 mW	60MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Through Hole
Package / Case:	Supplier Device Package:
TO-226-3, TO-92-3 Long Body (Formed Leads)	TO-92 (TO-226)
Base Product Number:	
BF421	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0095	

ON Semiconductor

Is Now

To learn more about onsemi™, please visit our website at
www.onsemi.com

BF421, BF423

High Voltage Transistors

PNP Silicon

ON Semiconductor®

http://onsemi.com

Features

- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Rating	Symbol	BF421	BF423	Unit
Collector − Emitter Voltage	V_{CEO}	−300	−250	Vdc
Collector − Base Voltage	V_{CBO}	−300	−250	Vdc
Emitter − Base Voltage	V_{EBO}	−5.0		Vdc
Collector Current − Continuous	I_C	−500		mAdc
Collector Current − Peak	I_{CM}	100		mA
Total Device Dissipation (Note 1) @ T_A = 25°C Derate above 25°C	P_D	830 6.6		mW mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150		°C

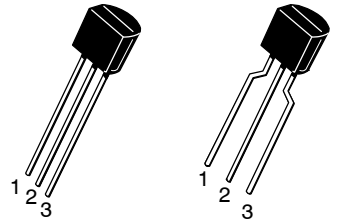
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	150	°C/W
Thermal Resistance, Junction−to−Lead	$R_{\theta JL}$	68	°C/W

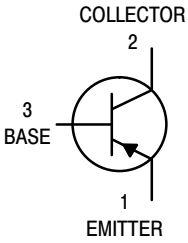
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Mounted on a FR4 board with 200 mm^2 of 1 oz copper and lead length of 5 mm.

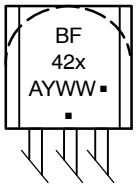
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



TO−92
CASE 29
STYLE 14



MARKING DIAGRAM



BF42x = Device Code
x = 1 or 3
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping
BF421ZL1G	TO−92 (Pb−Free)	2000/Ammo Pack
BF423G	TO−92 (Pb−Free)	5000 Units/Box
BF423ZL1G	TO−92 (Pb−Free)	2000/Ammo Pack

BF421, BF423

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector – Emitter Breakdown Voltage (Note 1) (I_C = −1.0 mAdc, I_B = 0)	BF421	$V_{(BR)CEO}$	−300	–	Vdc
	BF423		−250	–	
Collector – Base Breakdown Voltage (I_C = −100 μAdc, I_E = 0)	BF421	$V_{(BR)CBO}$	−300	–	Vdc
	BF423		−250	–	
Emitter – Base Breakdown Voltage (I_E = −100 μAdc, I_C = 0)	BF421	$V_{(BR)EBO}$	−5.0	–	Vdc
	BF423		−5.0	–	
Collector Cutoff Current (V_{CB} = −200 Vdc, I_E = 0)	BF421	I_{CBO}	–	−0.01	μAdc
	BF423		–	–	
Emitter Cutoff Current (V_{EB} = −5.0 Vdc, I_C = 0)	BF421	I_{EBO}	–	−100	nAdc
	BF423		–	–	
ON CHARACTERISTICS					
DC Current Gain (I_C = −25 mA, V_{CE} = −20 Vdc)	BF421	h_{FE}	50	–	–
	BF423		50	–	
Collector – Emitter Saturation Voltage (I_C = −20 mAdc, I_B = −2.0 mAdc)		$V_{CE(sat)}$	–	−0.5	Vdc
Base – Emitter Saturation Voltage (I_C = −20 mA, I_B = −2.0 mA)		$V_{BE(sat)}$	–	−2.0	Vdc
SMALL−SIGNAL CHARACTERISTICS					
Current – Gain – Bandwidth Product (I_C = −10 mAdc, V_{CE} = −10 Vdc, f = 20 MHz)		f_T	60	–	MHz
Common Emitter Feedback Capacitance (V_{CB} = −30 Vdc, I_E = 0, f = 1.0 MHz)		C_{re}	–	2.8	pF

1. Pulse Test: Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%.

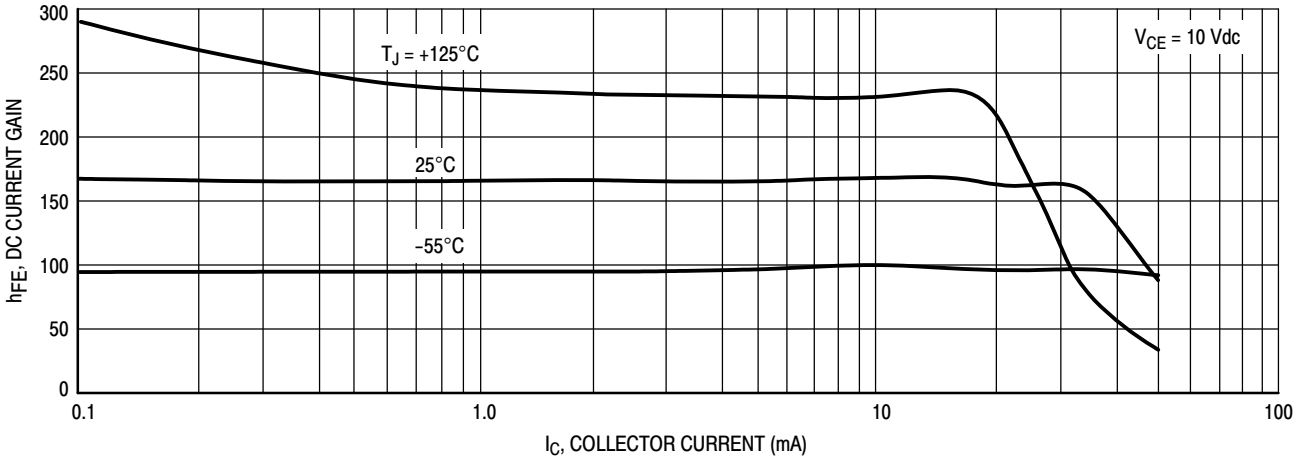


Figure 1. DC Current Gain

BF421, BF423

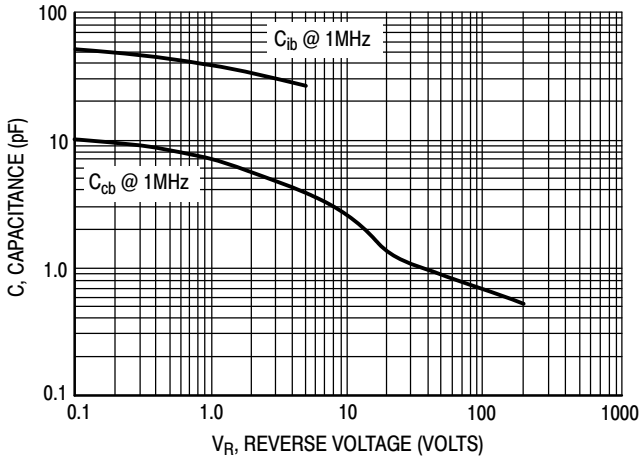


Figure 2. Capacitance

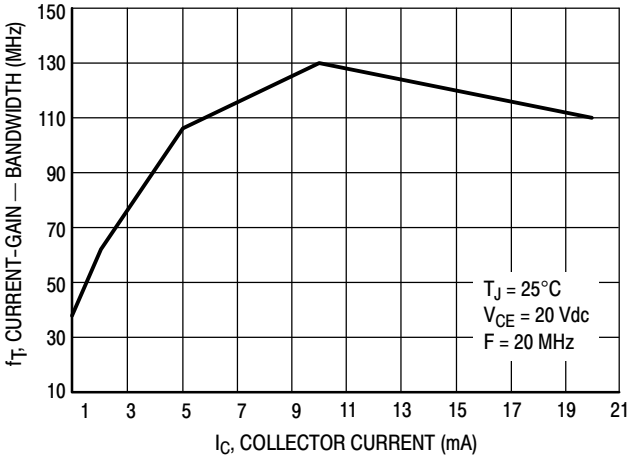
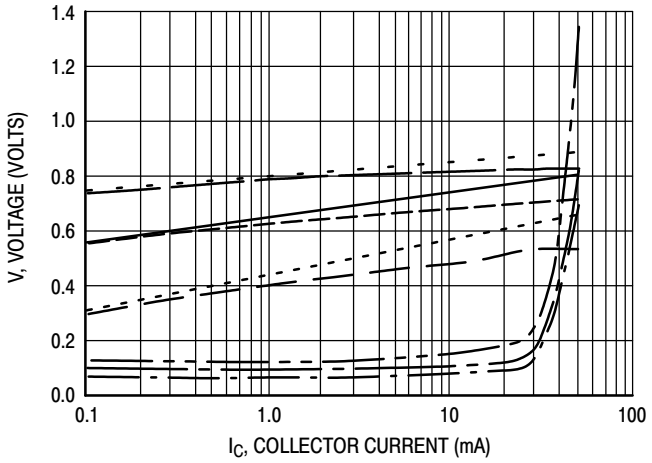


Figure 3. Current−Gain − Bandwidth



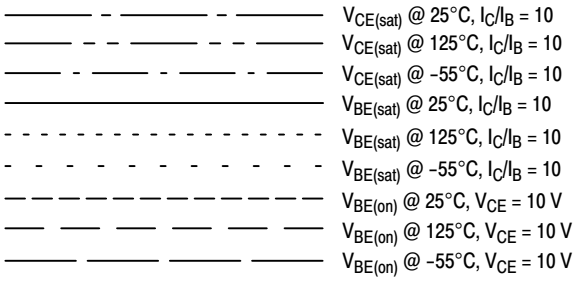


Figure 4. "ON" Voltages

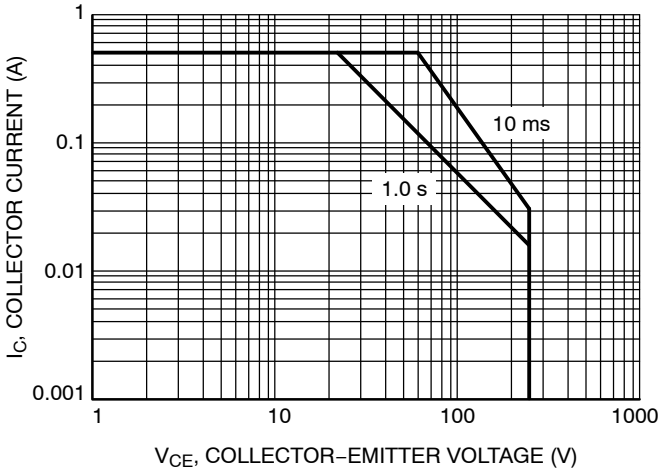
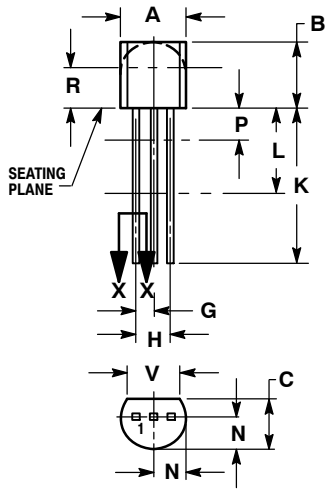


Figure 5. Safe Operating Area

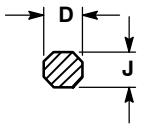
BF421, BF423

PACKAGE DIMENSIONS

TO−92 (TO−226)
CASE 029−11
ISSUE AM



STRAIGHT LEAD
BULK PACK

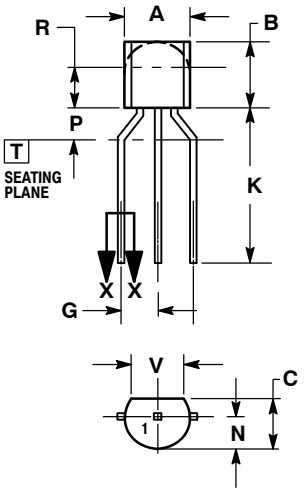


SECTION X−X

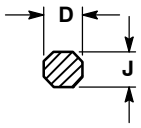
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

STYLE 14:
PIN 1. EMITTER
2. COLLECTOR
3. BASE



BENT LEAD
TAPE & REEL
AMMO PACK



SECTION X−X

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	MILLIMETERS	
DIM	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81−3−5773−3850

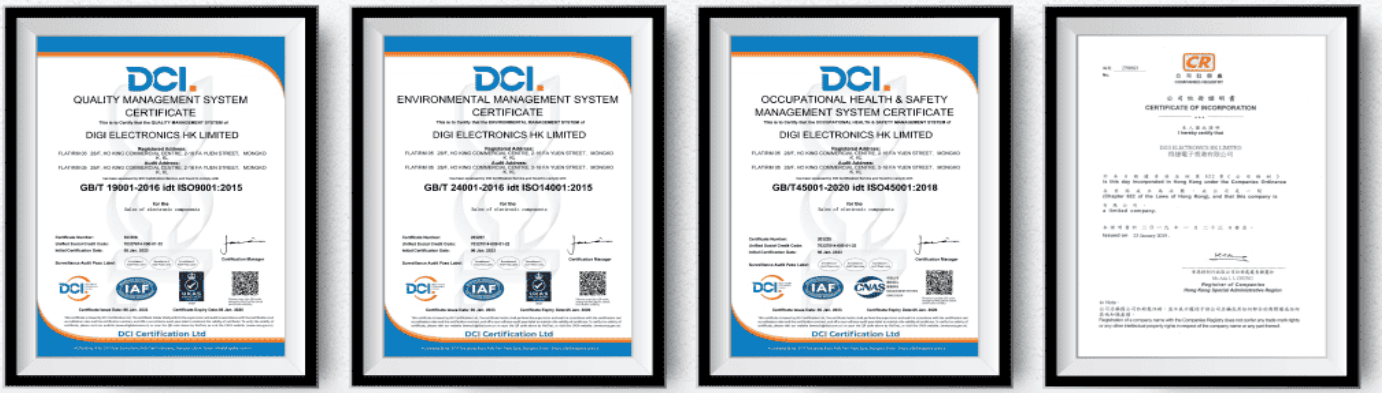
ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we striciy control the quality of products and services. Welcome your RFQ to Email: Info@DiGi-Electronics.com



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.