

#### Continental Device India Limited

An ISO/TS16949 and ISO 9001 Certified Company



# PNP SILICON PLANAR EPITAXIAL HIGH VOLTAGE VIDEO TRANSISTORS

BF421 BF423



TO-92 Plastic Package

### **High Voltage Video Amplifier**

ABSOLUTE MAXIMUM RATINGS(Ta=25°C unless specified otherwise)

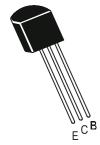
DESCRIPTION	SYMBOL	423	421	UNITS
Collector Emitter Voltage	$V_{CEO}$	250	300	V
Collector Base Voltage	V <sub>CBO</sub>	250	300	V
Emitter Base Voltage	$V_{EBO}$	Ę	5	V
Collector Current Continuous	I <sub>C</sub>	50	00	mA
Power Dissipation@ Ta=25°C	$P_D$	80	00	mW
Derate Above 25°C		6.	4	mW/ºC
Power Dissipation@ Tc=25°C	$P_{D}$	2.7	75	W
Derate Above 25°C		2	2	mW/ºC
Operating And Storage Junction	$T_{j},T_{stg}$	-55 to	+150	٥C
Temperature Range				
THERMAL RESISTANCE				
Junction to ambient	$R_{th(j-a)}$	15	56	°C/W
Junction to case	$R_{th(j-c)}$	4	5	°C/W

ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	423	421	UNITS
Collector Emitter Voltage*	$V_{CEO}$	$I_C=1.0$ mA, $I_B=0$	>250	>300	V
Collector Base Voltage	$V_{CBO}$	$I_{C}=100\mu A.I_{E}=0$	>250	>300	V
EmitterBase Voltage	$V_{EBO}$	$I_E = 100 \mu A, I_C = 0$	>5	>5	V
Collector-Cut off Current	$I_{CBO}$	$V_{CB} = 200V, I_{E} = 0$	<10	<10	nA
Emitter-Cut off Current	$I_{EBO}$	$V_{EB}$ =5.0V, $I_{C}$ =0	<100	<100	nA
DC Current Gain	$h_{FE}$	$I_C=25mA, V_{CE}=20V$	>50	>50	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20mA,I_B=2mA$	<0.5	<0.5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=20mA,I_B=2mA$	<2	<2	V

# PNP SILICON PLANAR EPITAXIAL HIGH VOLTAGE VIDEO TRANSISTORS

BF421 BF423



TO-92 Plastic Package

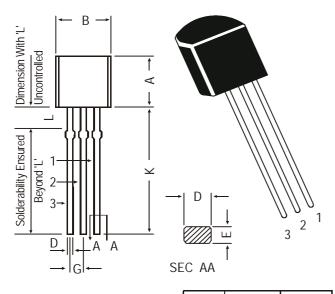
**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)** 

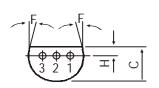
DESCRIPTION	SYMBOL	TEST CONDITION	423	421	UNITS
DYNAMIC CHARACTERISTICS					
Current Gain-Bandwidth Product	f <sub>T</sub>	$I_C$ =10mA, $V_{CE}$ =10V f=50MHz	>60	>60	MHz
Feedback Capacitance	$C_{re}$	$V_{CB}$ =30V, $I_{E}$ =0 f=1MHz	<2.8	<2.8	pF

### **TO-92 Plastic Package**

# **TO-92 Plastic Package**

#### **TO-92 Transistors on Tape and Ammo Pack**



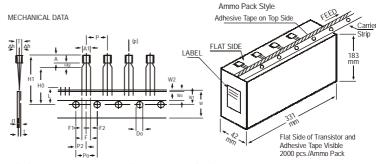


#### PIN CONFIGURATION

- 1. BASE
- 2. COLLECTOR
- 3. EMITTER

DIM	MIN.	MAX.				
Α	4.32	5.33				
В	4.45	5.20				
С	3.18	4.19				
D	0.41	0.55				
Е	0.35	0.50				
F	5 DEG					
G	1.14	1.40				
Н	1.14	1.53				
K	12.70	_				
L	1.982	2.082				

All diminsions in mm.



#### All dimensions in mm unless specified otherwise

ITEM		SPECIFICATION		N		
ITEM	SYMBOL	MIN.	NOM.	MAX.	TOL.	REMARKS
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A T	4.8 3.9		5.2 4.2		
BODY THICKNESS PITCH OF COMPONENT	I P	3.9	12.7	4.2	+1	
FEED HOLE PITCH	Po		12.7		±0.3	CUMULATIVE PITCH
						ERROR 1.0 mm/20
FEED HOLE CENTRE TO						PITCH
COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT
DISTANCE BETWEEN OUTER					+0.6	BOTTOM OF CLINCH
LEADS	F		5.08		-0.2	
COMPONENT ALIGNMENT	∆h		0	1		AT TOP OF BODY
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH HOLF POSITION	Wo W1		6 9		±0.2 +0.7	
HOLE I OSITION	VVI		,		-0.5	
HOLD-DOWN TAPE POSITION	W2		0.5		±0.2	
LEAD WIRE CLINCH HEIGHT	Ho		16		±0.5	
COMPONENT HEIGHT	H1			23.25 11.0		
LENGTH OF SNIPPED LEADS FEED HOLE DIAMETER	L Do		4	11.0	+0.2	
TOTAL TAPE THICKNESS	t		'	1.2	±0.2	t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCEF1,	F2		2.54		+0.4	
CLINCH HEIGHT	H2			3	-0.1	
PULL - OUT FORCE	(P)	6N		3		

- NOTES

  1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.

  2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20
- 3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.

  NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.

  A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.

## **Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

Notes BF421 BF423

> TO-92 Plastic Package

#### **Disclaimer**

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of
Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com