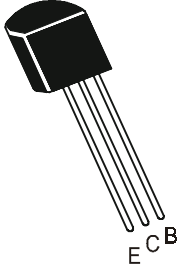


NPN SILICON PLANAR EPITAXIAL HIGH VOLTAGE VIDEO TRANSISTORS

**BF420
BF422**



**TO-92
Plastic Package**

Designed For High Voltage Video Amplifier In Television Receivers.

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

DESCRIPTION	SYMBOL	420	422	UNITS
Collector Emitter Voltage	V_{CEO}	300	250	V
Collector Base Voltage	V_{CBO}	300	250	V
Emitter Base Voltage	V_{EBO}		5	V
Collector Current Continuous	I_C		500	mA
Power Dissipation@ Ta=25°C	P_D		800	mW
Derate Above 25°C			6.4	mW/°C
Power Dissipation@ Tc=25°C	P_D		2.75	W
Derate Above 25°C			22	mW/°C
Operating And Storage Junction Temperature Range	T_j, T_{stg}		-55 to +150	°C
THERMAL RESISTANCE				
Junction to ambient	$R_{th(j-a)}$		156	°C/W
Junction to case	$R_{th(j-c)}$		45	°C/W

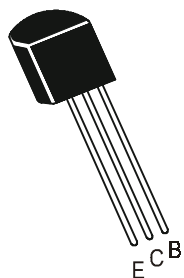
ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	422	420	UNITS
Collector Emitter Voltage*	V_{CEO}	$I_C=1.0mA, I_B=0$	>250	>300	V
Collector Base Voltage	V_{CBO}	$I_C=100\mu A, I_E=0$	>250	>300	V
Emitter Base 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

**NPN SILICON PLANAR EPITAXIAL HIGH VOLTAGE
VIDEO TRANSISTORS**

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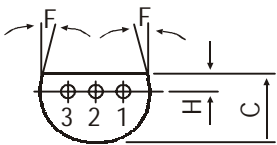
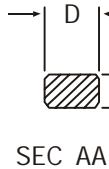
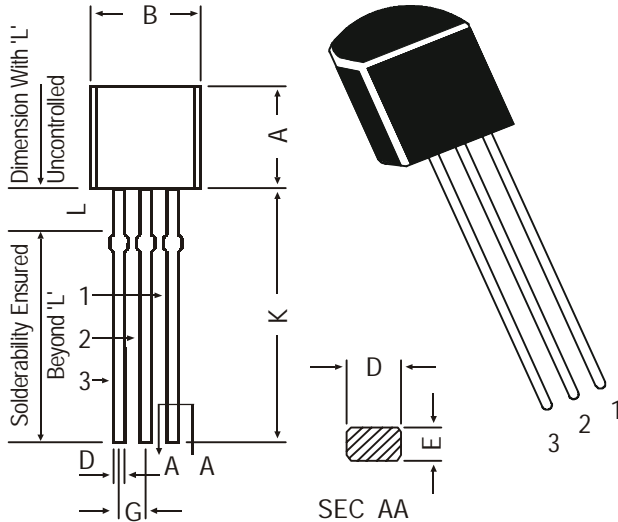
ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	422	420	UNITS
DYNAMIC CHARACTERISTICS					
Transition Frequency	f_T	$I_C=10\text{mA}$, $V_{CE}=10\text{V}$ $f=50\text{MHz}$	>60	>60	MHz
Feedback Capacitance	C_{re}	$V_{CB}=30\text{V}$, $I_E=0$ $f=1.0\text{MHz}$	<1.6	<1.6	pF

*Pulse Condition: = Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack

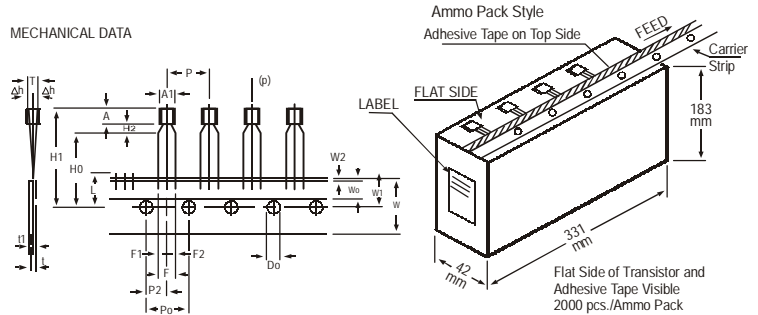


PIN CONFIGURATION

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

DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—
L	1.982	2.082

All dimensions in mm.



All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION			REMARKS
		MIN.	NOM.	MAX. TOL.	
BODY WIDTH	A1	4.0	4.8		
BODY HEIGHT	A	4.8	5.2		
BODY THICKNESS	T	3.9	4.2		
PITCH OF COMPONENT	P		12.7		±1
FEED HOLE PITCH	Po		12.7		±0.3
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4
DISTANCE BETWEEN OUTER LEADS	F	5.08			+0.6 -0.2
COMPONENT ALIGNMENT	Δh	0	1		AT TOP OF BODY
TAPE WIDTH	W	18			±0.5
HOLD-DOWN TAPE WIDTH	W0	6			±0.2
HOLE POSITION	W1	9			+0.7 -0.5
HOLD-DOWN TAPE POSITION	W2	0.5			±0.2
LEAD WIRE CLINCH HEIGHT	Ho	16			±0.5
COMPONENT HEIGHT	H1		23.25		
LENGTH OF SNIPPED LEADS	L		11.0		
FEED HOLE DIAMETER	Do	4			±0.2
TOTAL TAPE THICKNESS	t		1.2		11 0.3 - 0.6
LEAD - TO - LEAD DISTANCE F1,	F2	2.54			+0.4 -0.1
CLINCH HEIGHT	H2		3		
PULL - OUT FORCE	(P)	6N			

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 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. 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

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).

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Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail sales@cdil.com www.cdil.com