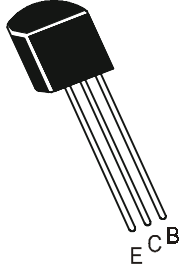


**NPN SILICON PLANAR EPITAXIAL HIGH VOLTAGE VIDEO TRANSISTORS**

**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
<b>THERMAL RESISTANCE</b>				
Junction to ambient	$R_{th(j-a)}$		156	°C/W
Junction to case	$R_{th(j-c)}$		45	°C/W

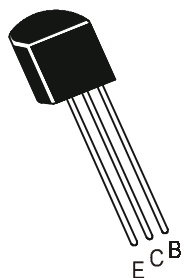
**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)**

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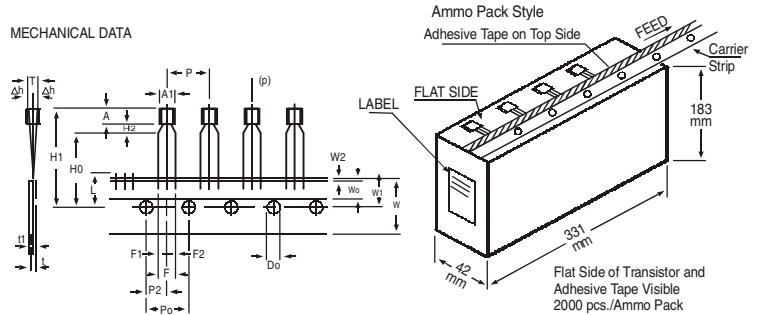
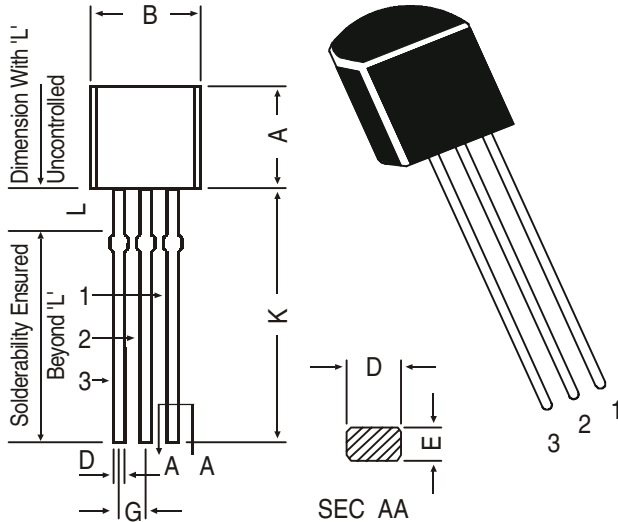
**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	422	420	UNITS
<b>DYNAMIC CHARACTERISTICS</b>					
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**



All dimensions in mm unless specified otherwise

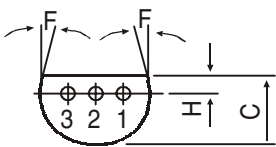
ITEM	SYMBOL	SPECIFICATION			REMARKS
		MIN.	NOM.	MAX. TOL.	
BODY WIDTH	A1	4.0		4.8	
BODY HEIGHT	A	4.8		5.2	
BODY THICKNESS	T	3.9		4.2	
PITCH OF COMPONENT	P		12.7		±1
FEED HOLE PITCH	Po		12.7		±0.3
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2
COMPONENT ALIGNMENT	Δh		0	1	AT TOP OF BODY
TAPE WIDTH	W		18		±0.5
HOLD-DOWN TAPE WIDTH	Wo		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	±1 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.

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.



**PIN CONFIGURATION**

1. BASE
2. COLLECTOR
3. EMITTER

**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**

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