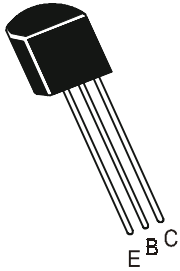




NPN SILICON HILGH VOLTAGE VIDEO TRANSISTORS

**BF391
BF392
BF393**

**TO-92
Plastic Package**



Designed For High Voltage Video Amplifier in Television Receivers.

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

DESCRIPTION	SYMBOL	391	392	393	UNITS
Collector Emitter Voltage	V_{CEO}	200	250	300	V
Collector Base Voltage	V_{CBO}	200	250	300	V
Emitter Base Voltage	V_{EBO}	6	6	6	V
Collector Current Continuous	I_C		500		mA
Power Dissipation@ Ta=25°C	P_D		625		mW
Power Dissipation@ Tc=25°C	P_D		1.5		W
Operating And Storage Junction Temperature Range	T_j, T_{stg}		-55 to +150		°C

THERMAL RESISTANCE

Junction to ambient	$R_{th(j-a)}$		200		°C/W
Junction to case	$R_{th(j-c)}$		83.3		°C/W

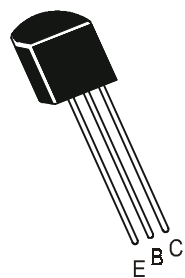
ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	391	392	393	UNITS
Collector Emitter Voltage	V_{CEO}^*	$I_C=1.0mA, I_B=0$	>200	>250	>300	V
Collector Base Voltage	V_{CBO}	$I_C=100\mu A, I_E=0$	>200	>250	>300	V
Emitter Base Voltage	V_{EBO}	$I_E=100\mu A, I_C=0$	>6	>6	>6	V
Collector Cut off Current	I_{CBO}	$V_{CB}=160V, I_E=0$	<0.1			μA
		$V_{CB}=200V, I_E=0$		<0.1	<0.1	μA
Emitter Cut off Current	I_{EBO}	$V_{EB}=4.0V, I_C = 0$	<0.1			μA
		$V_{EB}=6.0V, I_C = 0$		<0.1	<0.1	μA
DC Current Gain	h_{FE}	$I_C=1.0mA, V_{CE}=10V$	>25	>25	>25	
		$I_C=10mA, V_{CE}=10V$	>40	>40	>40	

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

DESCRIPTION	SYMBOL	TEST CONDITION	391	392	393	UNITS
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20mA, I_B=2mA$	<2	<2	<2	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=20mA, I_B=2mA$	<2	<2	<2	V
Feedback Capacitance	C_{re}	$I_E=0, V_{CB}=60V,$ $f=1.0MHz$	<2	<2	<2	pF
Current Gain - Bandwidth Product	f_T	$I_C=10mA, V_{CE}=20V,$ $f=20MHz$	>50	>50	>50	MHz

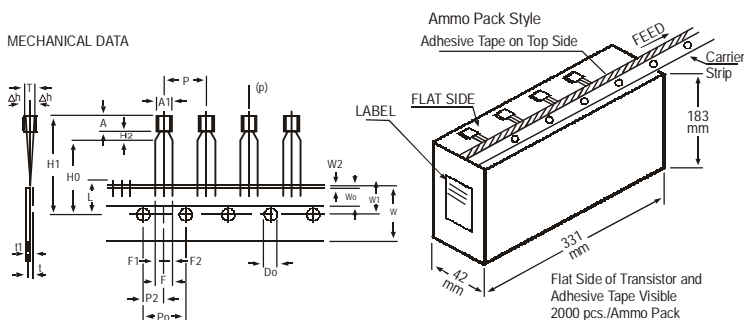
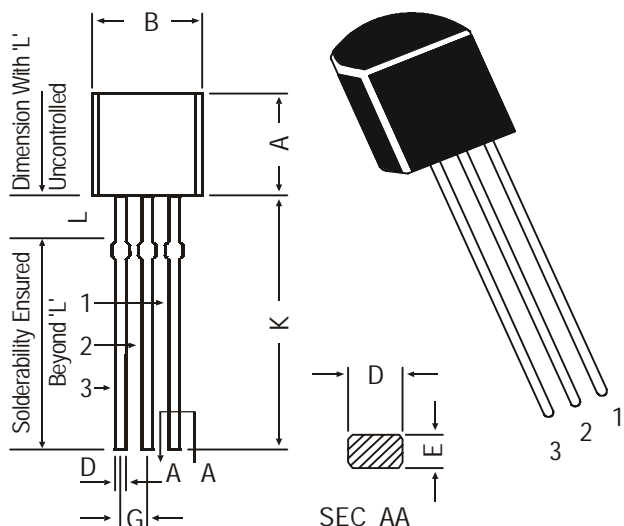
*Pulse Condition: = Pulse Width \leq 300us, Duty Cycle \leq 2%.

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TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

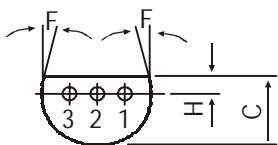
ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
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. COLLECTOR
2. BASE
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