



BF420

SMALL SIGNAL NPN TRANSISTOR

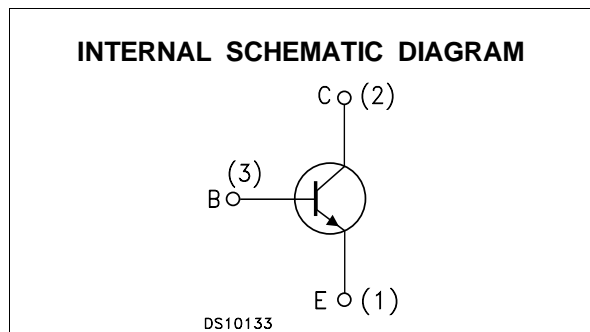
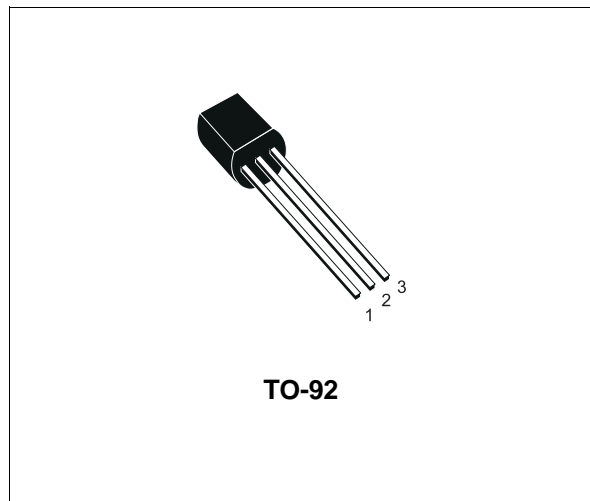
PRELIMINARY DATA

Type	Marking
BF420	BF420

- SILICON EPITAXIAL PLANAR NPN HIGH VOLTAGE TRANSISTOR
- TO-92 PACKAGE SUITABLE FOR THROUGH-HOLE PCB ASSEMBLY
- THE PNP COMPLEMENTARY TYPE IS BF421

APPLICATIONS

- VIDEO AMPLIFIER CIRCUITS (RGB CATHODE CURRENT CONTROL)
- TELEPHONE WIRELINE INTERFACE (HOOK SWITCHES, DIALER CIRCUITS)



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	300	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	300	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	300	mA
I_{CM}	Collector Peak Current	500	mA
P_{tot}	Total Dissipation at $T_C = 25^\circ C$	830	mW
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max. Operating Junction Temperature	150	$^\circ C$

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THERMAL DATA

$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	150	$^{\circ}\text{C}/\text{W}$
$R_{thj-Case}$	Thermal Resistance Junction-Case	Max	50	$^{\circ}\text{C}/\text{W}$

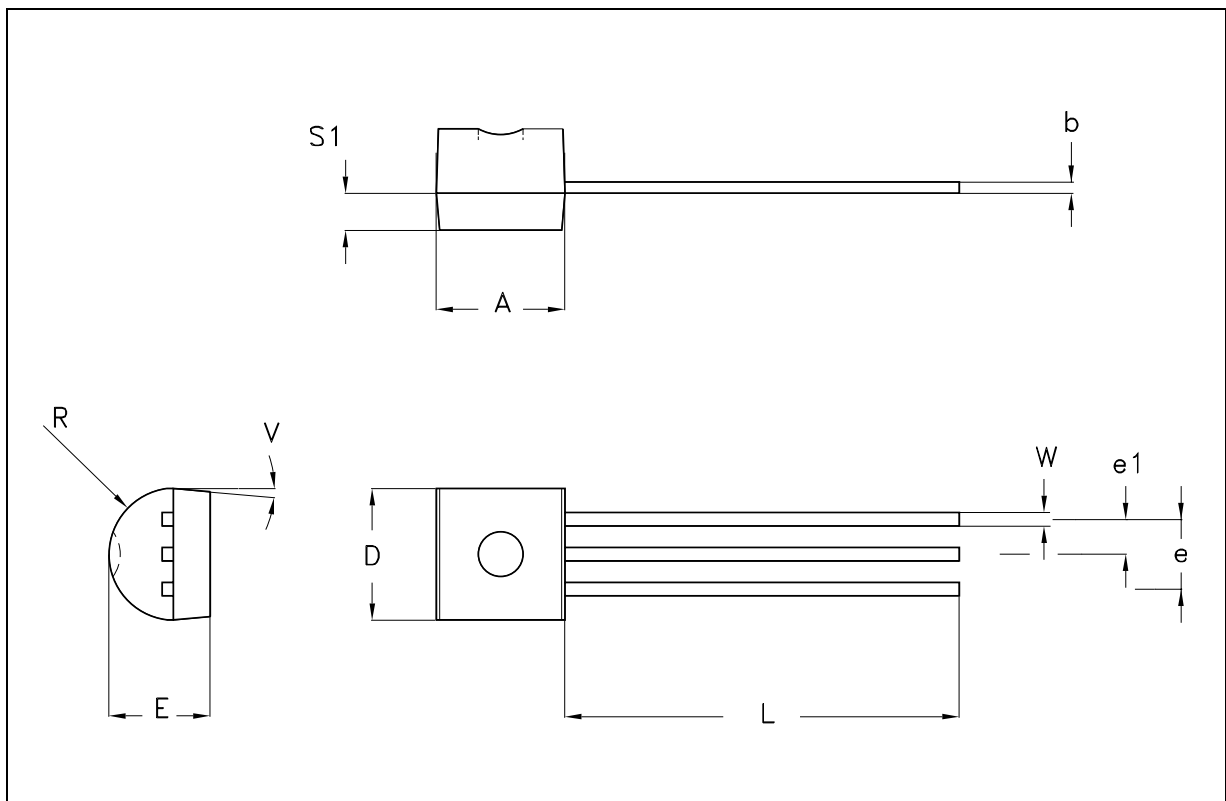
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 200\text{ V}$ $V_{CB} = 200\text{ V}$ $T_C = 150^{\circ}\text{C}$ $V_{CB} = 300\text{ V}$			10 10 100	nA μA μA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			50	nA
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$	300			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 100\text{ }\mu\text{A}$	300			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = 100\text{ }\mu\text{A}$	5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 30\text{ mA}$ $I_B = 5\text{ mA}$			0.6	V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 30\text{ mA}$ $I_B = 5\text{ mA}$			1.2	V
h_{FE}^*	DC Current Gain	$I_C = 25\text{ mA}$ $V_{CE} = 20\text{ V}$	50			
f_T	Transition Frequency	$I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 20\text{ MHz}$	60			MHz
C_{CBO}	Collector-Base Capacitance	$I_E = 0$ $V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$		6		pF
C_{EBO}	Emitter-Base Capacitance	$I_C = 0$ $V_{EB} = 2\text{ V}$ $f = 1\text{ MHz}$		22		pF

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

TO-92 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.32		4.95	0.170		0.195
b	0.36		0.51	0.014		0.020
D	4.45		4.95	0.175		0.194
E	3.30		3.94	0.130		0.155
e	2.41		2.67	0.095		0.105
e1	1.14		1.40	0.045		0.055
L	12.70		15.49	0.500		0.609
R	2.16		2.41	0.085		0.094
S1	1.14		1.52	0.045		0.059
W	0.41		0.56	0.016		0.022
V	4 degree		6 degree	4 degree		6 degree



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