

SMALL SIGNAL NPN TRANSISTOR

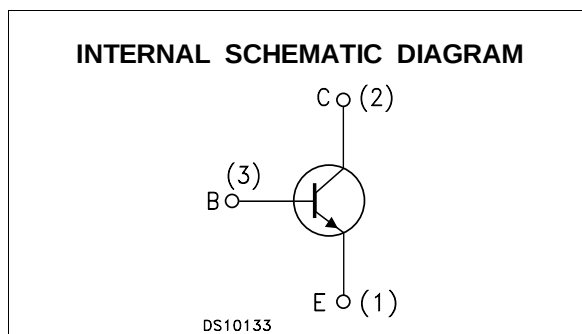
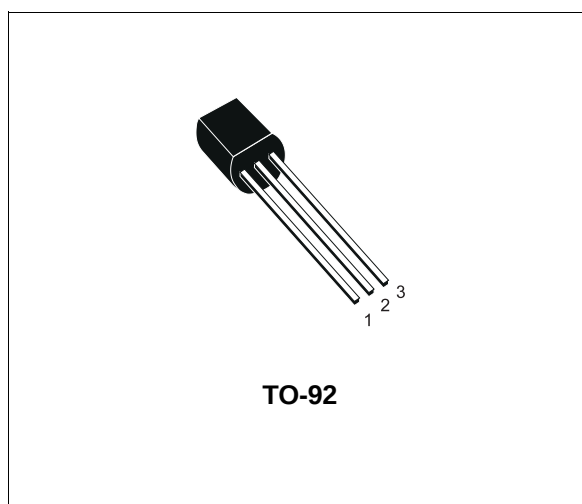
PRELIMINARY DATA

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 $T_C = 25^\circ\text{C}$	830	mW
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

THERMAL DATA

R _{thj-amb} •	Thermal Resistance Junction-Ambient	Max	150	°C/W
R _{thj-Case} •	Thermal Resistance Junction-Case	Max	50	°C/W

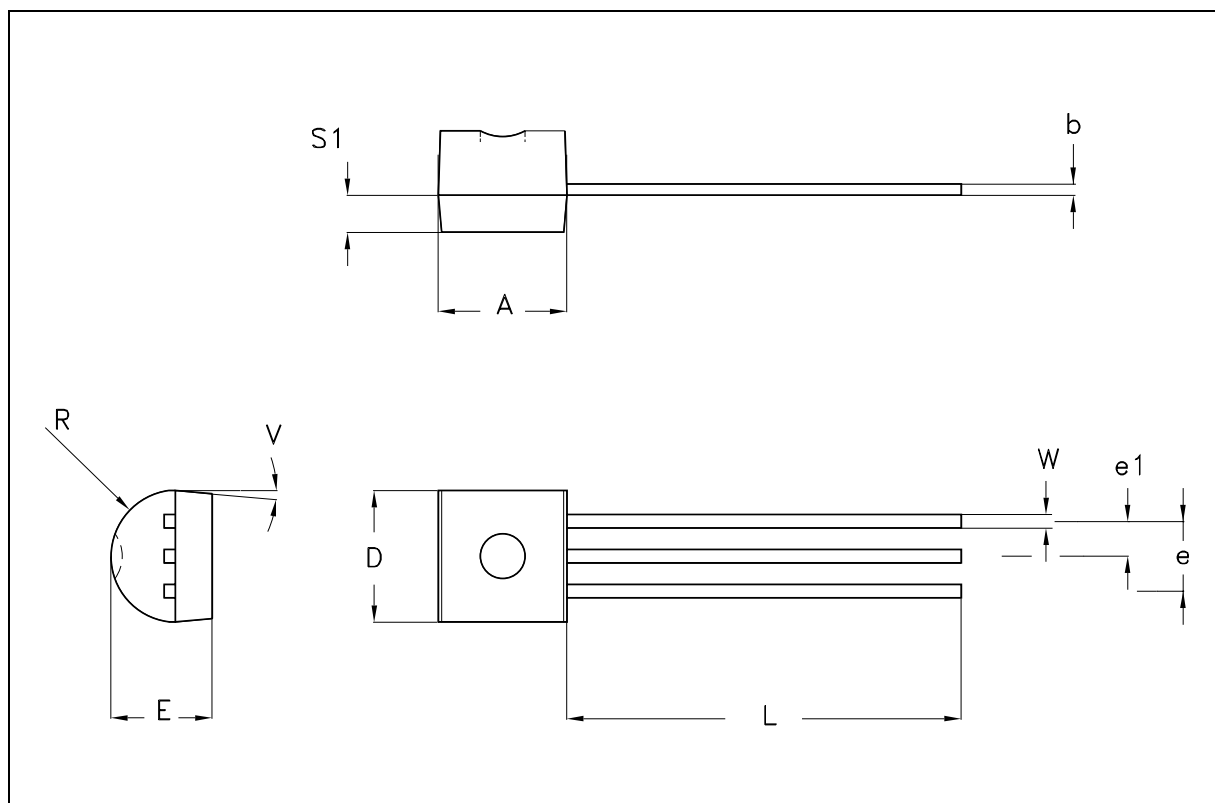
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 200 V V _{CB} = 200 V V _{CB} = 300 V T _C = 150 °C			10 10 100	nA μA μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			50	nA
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = 10 mA	300			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 100 μA	300			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = 100 μA	5			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 30 mA I _B = 5 mA			0.6	V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 30 mA I _B = 5 mA			1.2	V
h _{FE} *	DC Current Gain	I _C = 25 mA V _{CE} = 20 V	50			
f _T	Transition Frequency	I _C = 10 mA V _{CE} = 10 V f = 20 MHz	60			MHz
C _{CBO}	Collector-Base Capacitance	I _E = 0 V _{CB} = 10 V f = 1MHz		6		pF
C _{EBO}	Emitter-Base Capacitance	I _C = 0 V _{EB} = 2 V f = 1MHz		22		pF

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 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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