

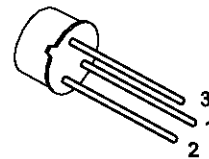
SMALL SIGNAL NPN TRANSISTORS

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MEDIUM POWER AMPLIFIER
- PNP COMPLEMENTS ARE 2N5322 AND 2N5323

DESCRIPTION

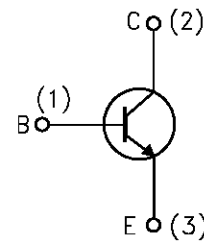
The 2N5320 and 2N5321 are silicon epitaxial planar NPN transistors in Jedec TO-39 metal case. They are especially intended for high-voltage medium power application in industrial and commercial equipments.

The complementary PNP types are respectively the 2N5322 and 2N5323



TO-39

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		2N5320	2N5321	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	100	75	V
V_{CEV}	Collector-Emitter Voltage ($V_{BE} = 1.5V$)	100	75	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	75	50	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	6	5	V
I_C	Collector Current	1.2		A
I_{CM}	Collector Peak Current	2		A
I_B	Base Current	1		A
P_{tot}	Total Dissipation at $T_{amb} = 25\text{ }^{\circ}\text{C}$	1		W
P_{tot}	Total Dissipation at $T_c = 25\text{ }^{\circ}\text{C}$	10		W
T_{stg}, T_j	Storage and Junction Temperature	-65 to 200		$^{\circ}\text{C}$

2N5320/2N5321

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-Case	Max	17.5	°C/W
R _{thj-amb}	Thermal Resistance Junction-Ambient	Max	175	°C/W

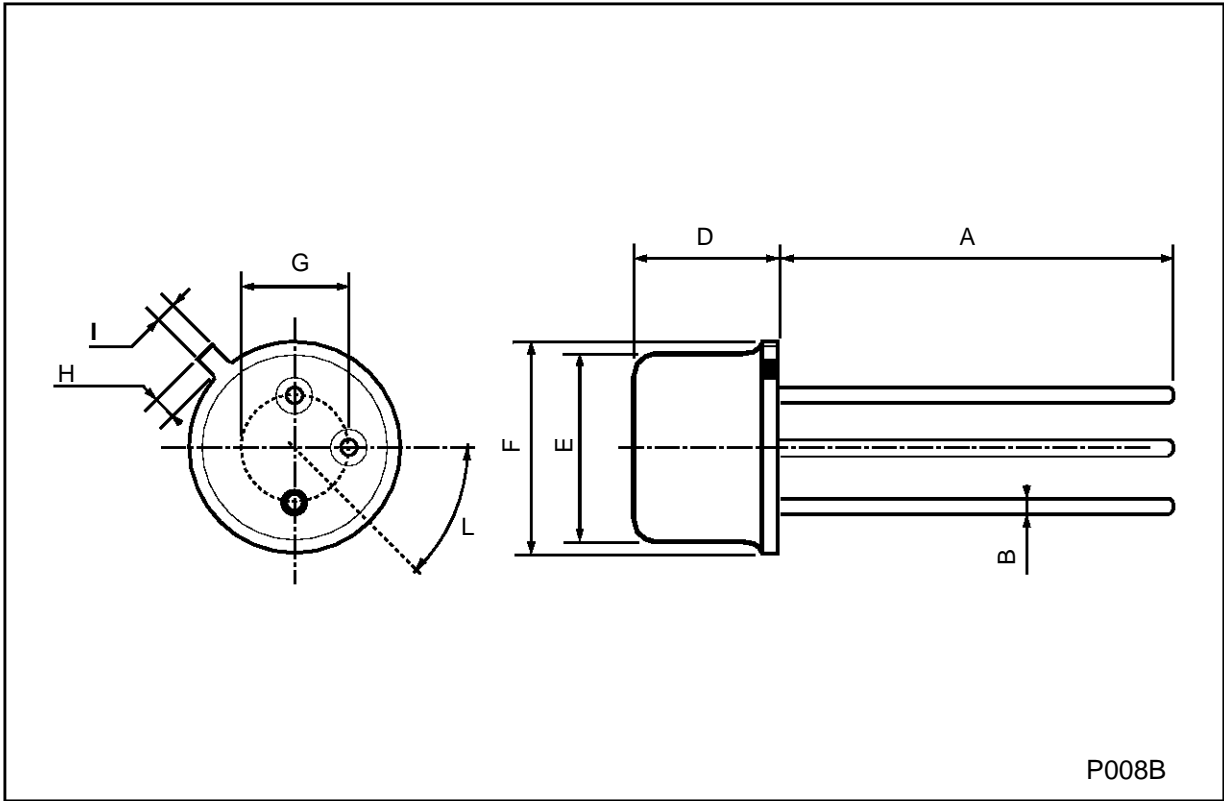
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 80 V for 2N5320 V _{CB} = 60 V for 2N5321			0.5 5	μA μA
I _{EBO}	Collector Cut-off Current (I _C = 0)	V _{EB} = 5 V for 2N5320 V _{EB} = 4 V for 2N5321		0.1 0.5		μA μA
V _{(BR)CEV}	Collector-Emitter Breakdown Voltage (V _{BE} = 1.5V)	I _C = 100 μA for 2N5320 for 2N5321	100 75			V V
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = 10 mA for 2N5320 for 2N5321	75 50			V V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = 100 μA for 2N5320 for 2N5321	6 5			V V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 500 mA I _B = 50 mA for 2N5320 for 2N5321			0.5 0.8	V V
V _{BE} *	Base-Emitter Voltage	I _C = 500 mA V _{CE} = 4 V for 2N5320 for 2N5321			1.1 1.4	V V
h _{FE} *	DC Current Gain	for 2N5320 I _C = 500 mA V _{CE} = 4 V I _C = 1 A V _{CE} = 2 V for 2N5321 I _C = 500 mA V _{CE} = 4 V	30 10 40		130 250	
f _T	Transition Frequency	I _C = 50 mA V _{CE} = 4 V f = 10 MHz	50			MHz
t _{on}	Turn-on Time	I _C = 500 mA V _{CC} = 30 V I _{B1} = 50 mA			80	ns
t _{off}	Turn-off Time	I _C = 500 mA V _{CC} = 30 V I _{B1} = -I _{B2} = 50 mA			800	ns

* Pulsed: Pulse duration = 300 μs, duty cycle = 1 %

TO-39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



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