

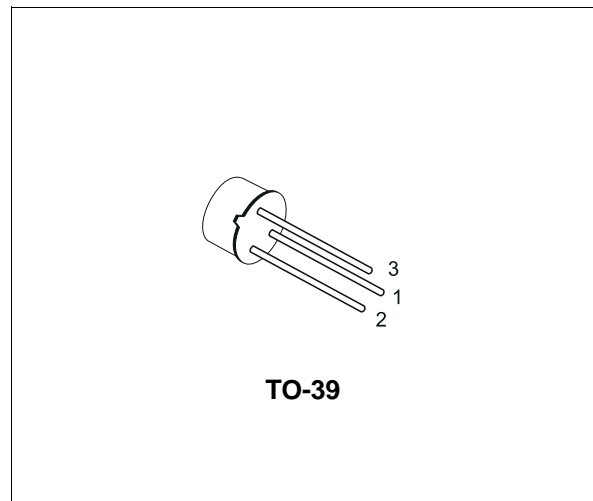
SMALL SIGNAL NPN TRANSISTORS

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

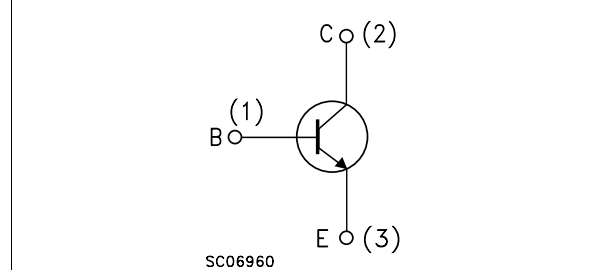
DESCRIPTION

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



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

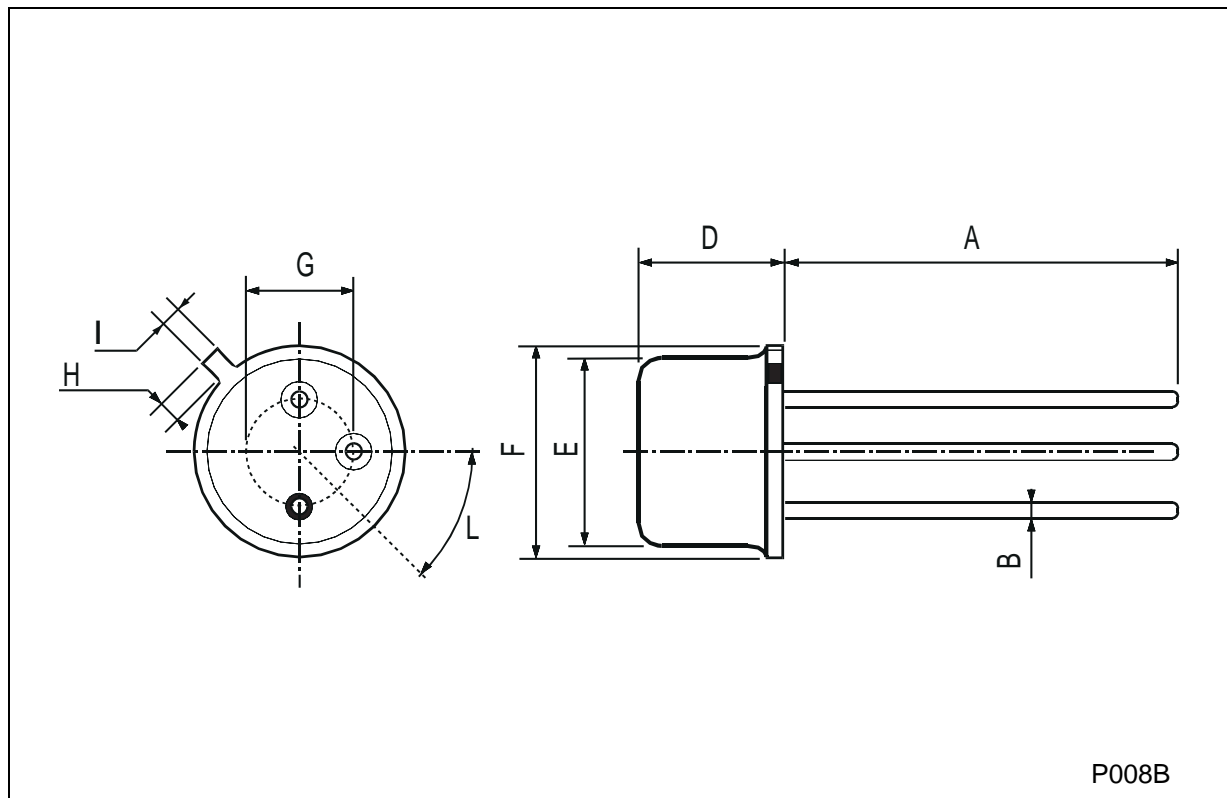
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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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