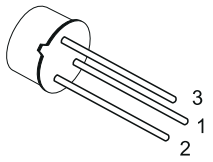
2N5320

SMALL SIGNAL NPN TRANSISTOR

DESCRIPTION

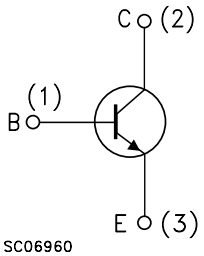
The 2N5320 is a silicon Epitaxial Planar NPN transistor in Jedec TO-39 metal case. It is especially intended for high-voltage medium power application in industrial and commercial equipments.

The complementary PNP type is the 2N5322



TO-39

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	100	V
V_{CEV}	Collector-Emitter Voltage (V_{BE} = 1.5V)	100	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	75	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	6	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 ^oC	1	W
P_{tot}	Total Dissipation at T_C = 25 ^oC	10	W
T_{stg}	Storage Temperature	-65 to 175	^oC
T_j	Max Operating Junction Temperature	175	^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-Case	15	°C/W
$R_{thj\text{-}amb}$	Max Thermal Resistance Junction-Ambient Max	150	°C/W

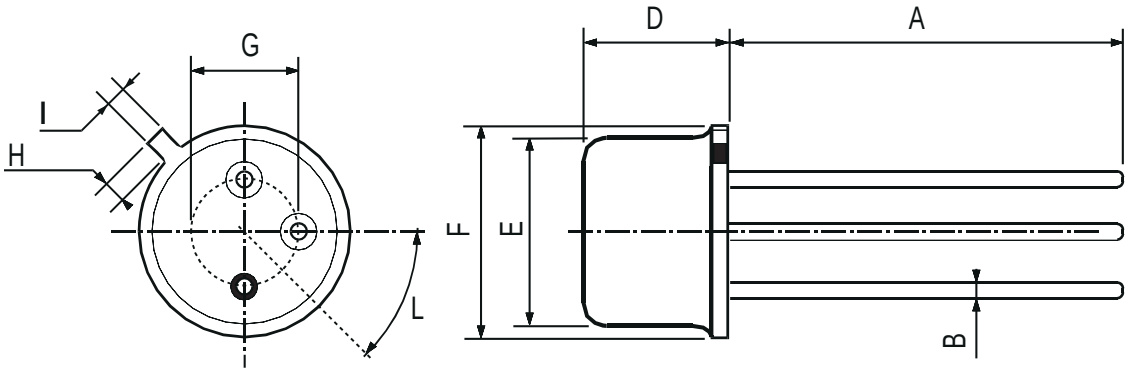
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 80 V			0.5	µA
I_{EBO}	Collector Cut-off Current (I_C = 0)	V_{EB} = 5 V		0.1		µA
$V_{(BR)CEV}$	Collector-Emitter Breakdown Voltage (V_{BE} = 1.5V)	I_C = 100 µA	100			V
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA	75			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_C = 0)	I_E = 100 µA	6			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 500 mA I_B = 50 mA			0.5	V
V_{BE}*	Base-Emitter Voltage	I_C = 500 mA V_{CE} = 4 V			1.1	V
h_{FE}*	DC Current Gain	I_C = 500 mA V_{CE} = 4 V I_C = 1 A V_{CE} = 2 V	30 10		130	
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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