

MEDIUM POWER NPN SILICON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR

APPLICATIONS

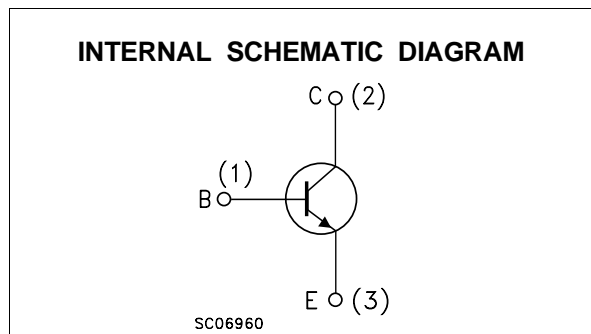
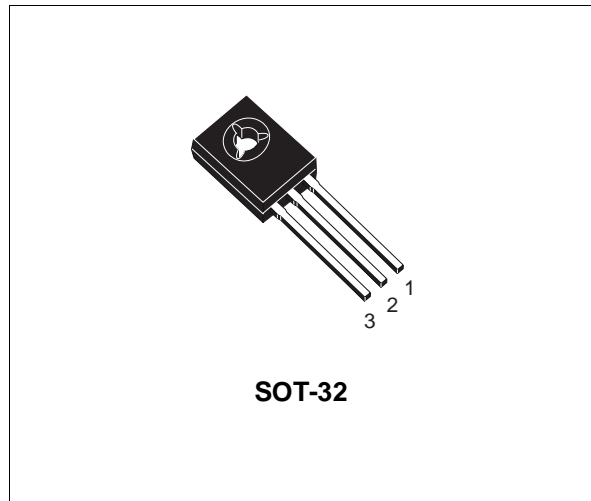
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The 2N5191 and 2N5192 are silicon epitaxial-base NPN transistors in Jedec SOT-32 plastic package.

They are intended for use in medium power linear and switching applications.

The complementary PNP type of 2N5192 is 2N5195.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		2N5191	2N5192	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	60	80	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	60	80	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5		V
I_C	Collector Current	4		A
I_{CM}	Collector Peak Current	7		A
I_B	Base Current	1		A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$	40		W
T_{stg}	Storage Temperature	-65 to 150		$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150		$^\circ\text{C}$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	3.12	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	100	°C/W

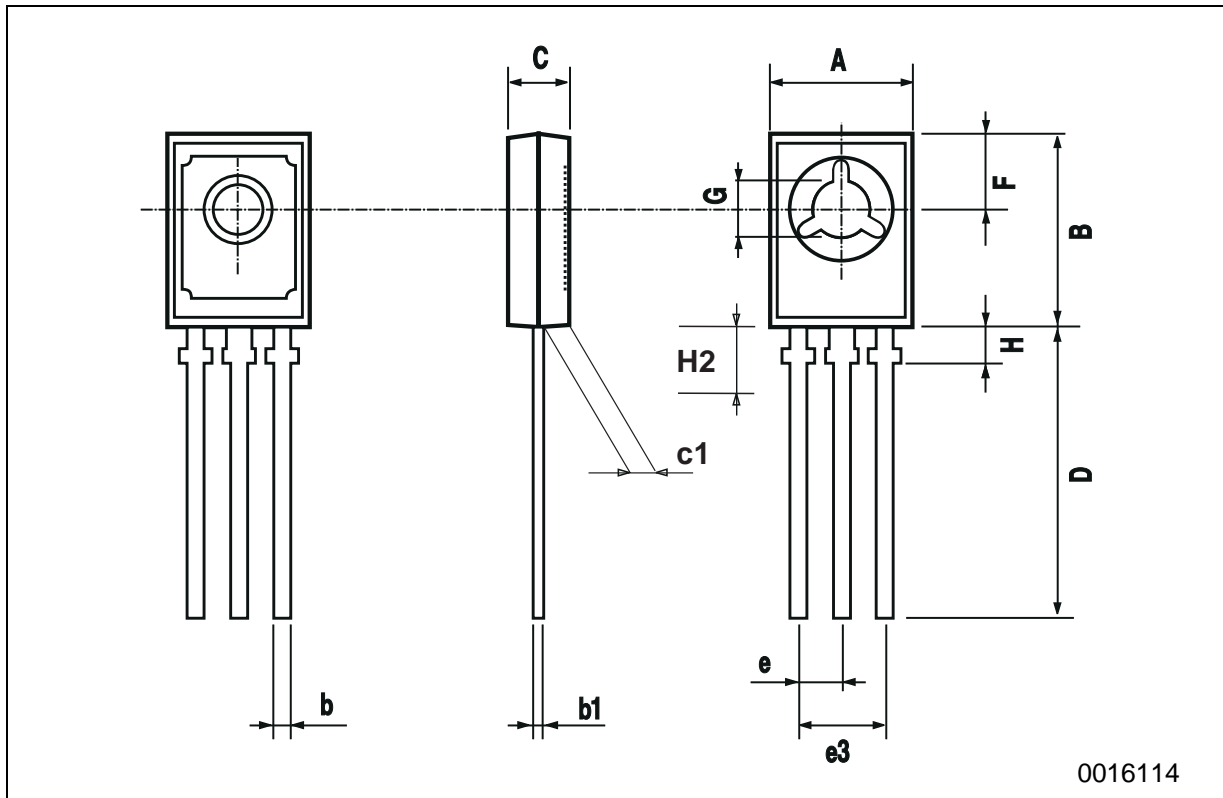
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = rated V _{CBO}			0.1	mA
I _{CEX}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = rated V _{CEO} V _{CE} = rated V _{CEO} T _C = 125 °C			0.1 2	mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = rated V _{CEO}			1	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage	I _C = 100 mA for 2N5191 for 2N5192	60 80			V V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 1.5 A I _B = 0.15 A I _C = 4 A I _B = 1 A			0.6 1.4	V V
V _{BE*}	Base-Emitter Voltage	I _C = 1.5 A V _{CE} = 2 V			1.2	V
h _{FE*}	DC Current Gain	I _C = 1.5 A V _{CE} = 2 V for 2N5191 for 2N5192 I _C = 4 A V _{CE} = 2 V for 2N5191 for 2N5192	25 20 10 7		100 80	
f _T	Transition frequency	I _C = 1 A V _{CE} = 10 V	2			MHz

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
e		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100



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