

## MEDIUM POWER NPN SILICON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR

### APPLICATIONS

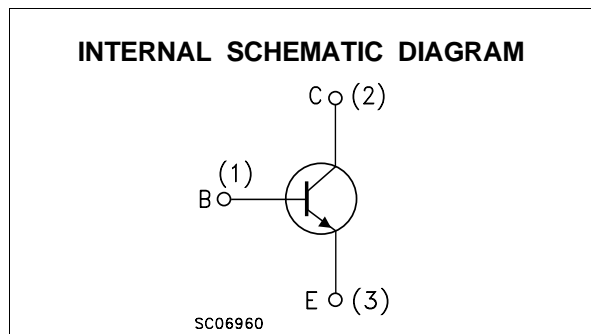
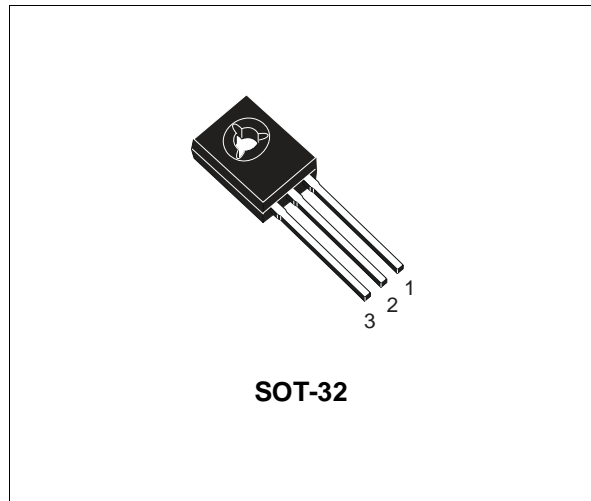
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

### 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 <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	3.12	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	100	°C/W

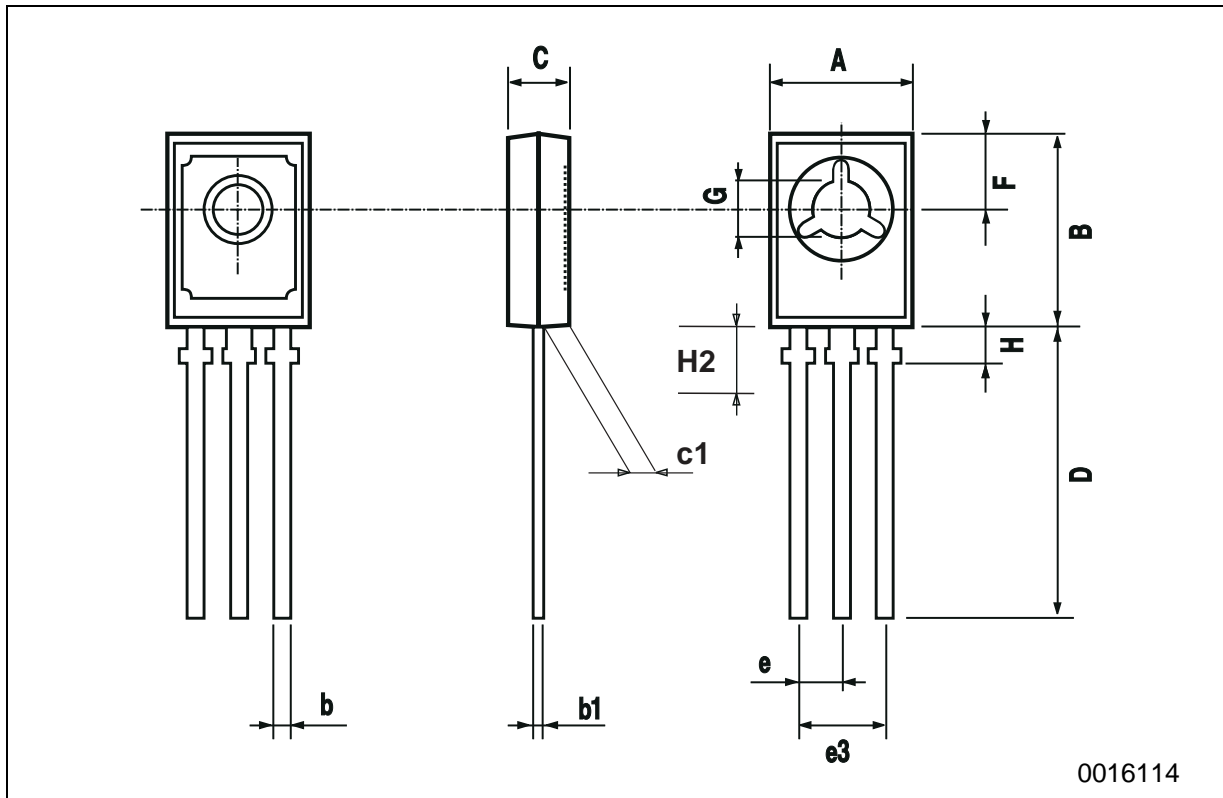
**ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = rated V <sub>CBO</sub>			0.1	mA
I <sub>CEx</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = rated V <sub>CEO</sub> V <sub>CE</sub> = rated V <sub>CEO</sub> T <sub>c</sub> = 125 °C			0.1 2	mA mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = rated V <sub>CEO</sub>			1	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			1	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 100 mA for <b>2N5191</b> for <b>2N5192</b>	60 80			V V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1.5 A    I <sub>B</sub> = 0.15 A I <sub>C</sub> = 4 A        I <sub>B</sub> = 1 A			0.6 1.4	V V
V <sub>BE*</sub>	Base-Emitter Voltage	I <sub>C</sub> = 1.5 A    V <sub>CE</sub> = 2 V			1.2	V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 1.5 A    V <sub>CE</sub> = 2 V for <b>2N5191</b> for <b>2N5192</b> I <sub>C</sub> = 4 A        V <sub>CE</sub> = 2 V for <b>2N5191</b> for <b>2N5192</b>	25 20 10 7		100 80	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 1 A        V <sub>CE</sub> = 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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