

MEDIUM POWER NPN SILICON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR

APPLICATIONS

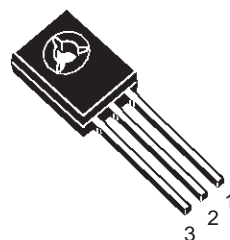
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

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

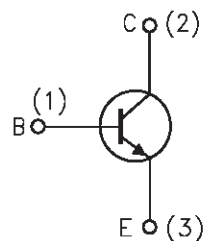
They are intended for use in medium power linear and switching applications.

The complementary PNP type of 2N5192 is 2N5195.



SOT-32

INTERNAL SCHEMATIC DIAGRAM



SC06960

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

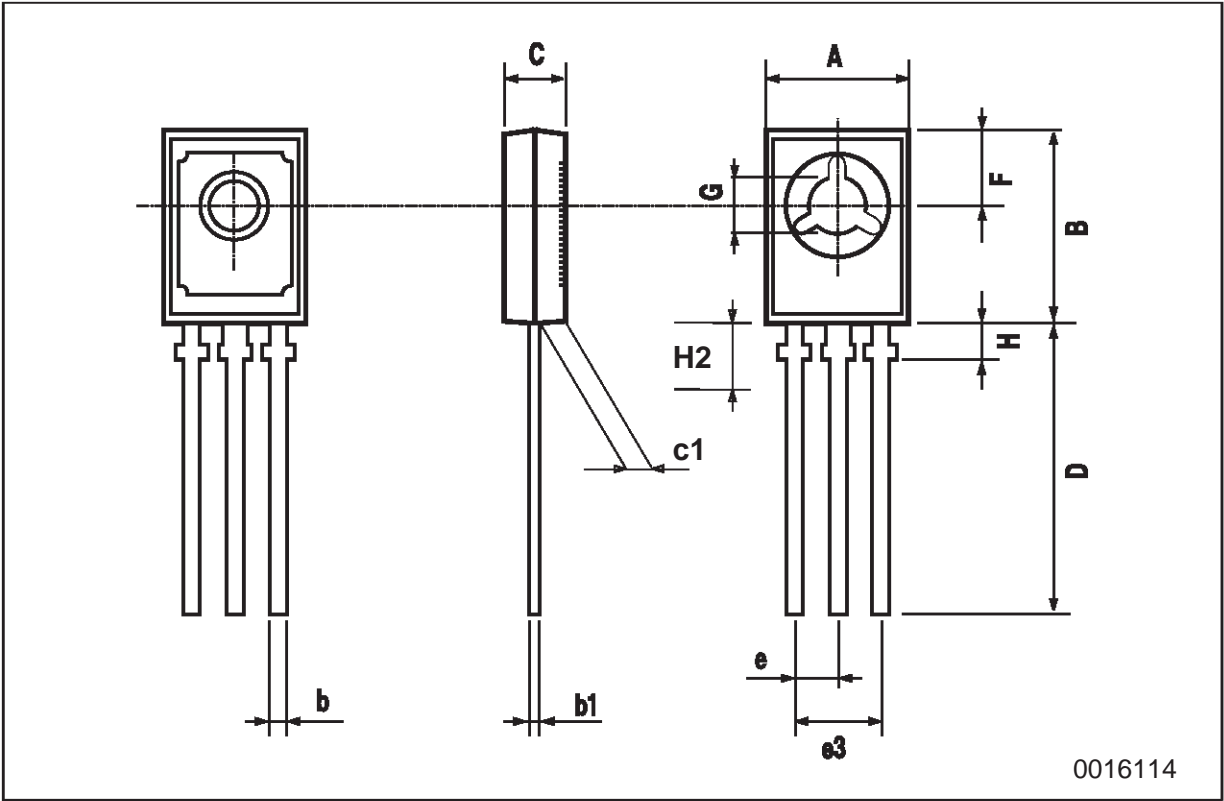
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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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