2N5191
2N5192

MEDIUM POWER NPN SILICON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR

APPLICATIONS

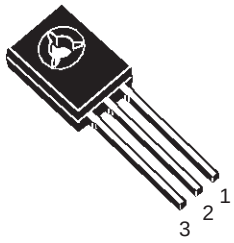
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

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

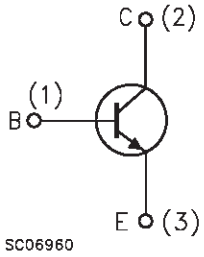
They are inteded for use in medium power linear and switching applications.

The complementary PNP type of 2N5192 is 2N5195.



SOT-32

INTERNAL SCHEMATIC DIAGRAM



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 $T_c \leq 25\ ^oC$	40		W
T_{stg}	Storage Temperature	-65 to 150		^oC
T_j	Max. Operating Junction Temperature	150		^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	3.12	$^oC/W$
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	100	$^oC/W$

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC 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 ^oC			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