

COMPLEMENTARY SILICON POWER TRANSISTORS

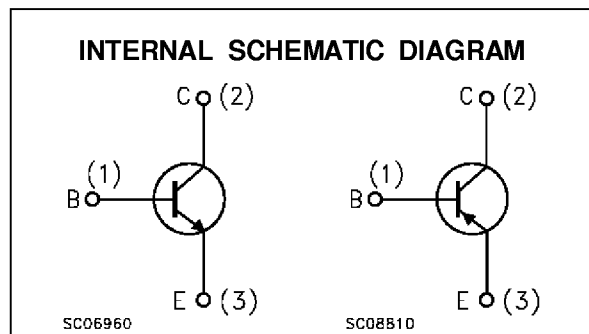
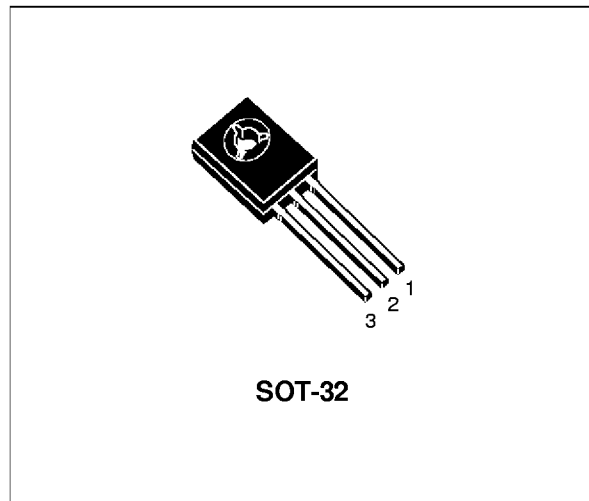
- 2N5191, 2N5192, 2N5193 AND 2N5195 ARE SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The 2N5190, 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 types are 2N5193, 2N5194 and 2N5195 respectively.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit	
		NPN	2N5190	2N5191		2N5192
		PNP	2N5193	2N5194		2N5195
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		40	60	80	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		40	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 $T_c \leq 25^\circ C$		40			W
T_{stg}	Storage Temperature		-65 to 150			$^\circ C$
T_j	Max. Operating Junction Temperature		150			$^\circ C$

For PNP types voltage and current values are negative.

2N5190/2N5191/2N5192/2N5193/2N5194/2N5195

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 2N5190/2N5193 for 2N5191/2N5194 for 2N5192/2N5195	40 60 80			V 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 for 2N5190/2N5191/2N5192 for 2N5193/2N5194/2N5195			0.6 1.4 1.2	V 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 2N5190/2N5193 for 2N5191/2N5194 for 2N5192/2N5195 I _C = 4 A V _{CE} = 2 V for 2N5190/2N5193 for 2N5191/2N5194 for 2N5192/2N5195	25 25 20 10 10 7		100 100 80	
f _T	Transition frequency	I _C = 1 A V _{CE} = 10 V	2			MHz

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5%
For PNP types voltage and current values are negative.

SOT-32 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	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100

