

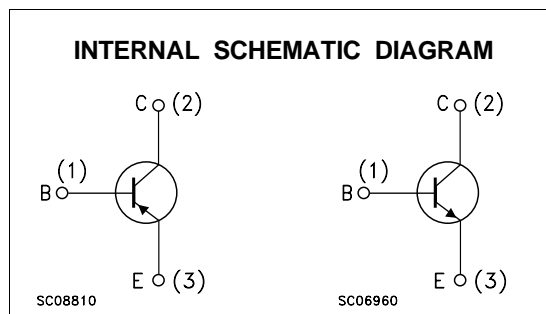
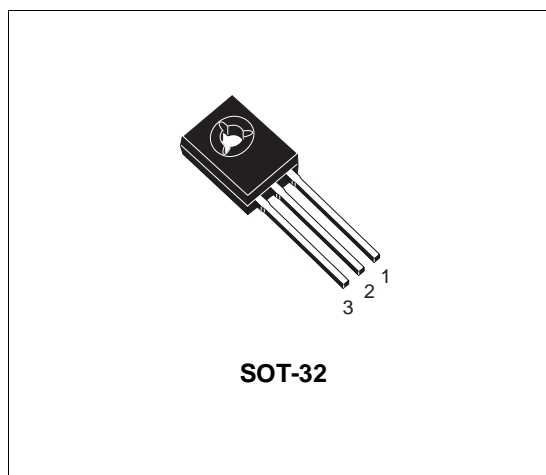
COMPLEMENTARY SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

DESCRIPTION

The MJE172 (PNP type) and MJE182 (NPN type) are silicon Epitaxial Planar, complementary transistors in Jedec SOT-32 plastic package.

They are designed for low power audio amplifier and low current, high speed switching applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	MJE182	
		PNP	MJE172	
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		80	V
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		100	V
V_{EBO}	Base-Emitter Voltage ($I_C = 0$)		7	V
I_C	Collector Current		3	A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)		6	A
I_B	Base Current		1	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C		12.5	W
T_{stg}	Storage Temperature		-65 to 150	°C
T_j	Total Power Dissipation at $T_{case} \leq 25$ °C		150	°C

For PNP type voltage and current values are negative.

MJE172 - MJE182

THERMAL DATA

R _{thj-amb}	Thermal Resistance Junction-ambient	Max	83.4	°C/W
R _{thj-case}	Thermal Resistance Junction-case	Max	10	°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} T _{case} = 150°C				0.1 0.1	μA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 7 V				0.1	μA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 10 mA		80			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 0.5 A I _C = 1.5 A I _C = 3 A	I _B = 50 mA I _B = 0.15 A I _B = 0.6 A			0.3 0.9 1.7	V V V
V _{BE(sat)*}	Base-Emitter on Voltage	I _C = 1.5 A I _C = 3 A	I _B = 0.15 A I _B = 0.6 A			1.5 2	V V
V _{BE*}	Base-Emitter on Voltage	I _C = 0.5 A	V _{CE} = 1 V			1.2	V
h _{FE}	DC Current Gain	I _C = 0.1 A I _C = 0.5 A I _C = 1.5 A	V _{CE} = 1 V V _{CE} = 1 V V _{CE} = 1 V	50 30 12		250	
f _T	Transistor Frequency	I _C = 0.1 A f = 10 MHz	V _{CE} = 10 V	50			MHz
C _{CBO}	Collector-base Capacitance	V _{CB} = 10 V for MJE172 for MJE182	I _E = 0 f = 0.1MHz			60 40	pF pF

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

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		0.425
b	0.7		0.9	0.028		0.035
b1	0.40		0.65	0.015		0.025
C	2.4		2.7	0.094		0.106
c1	1.0		1.3	0.039		0.051
D	15.4		16.0	0.606		0.630
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
H2		2.15			0.084	
I		1.27			0.05	
O		0.3			0.011	
V		10°			10°	

