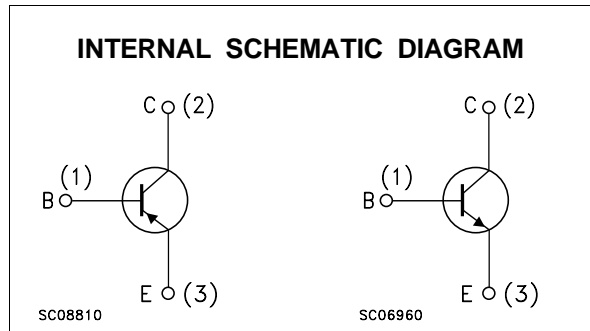
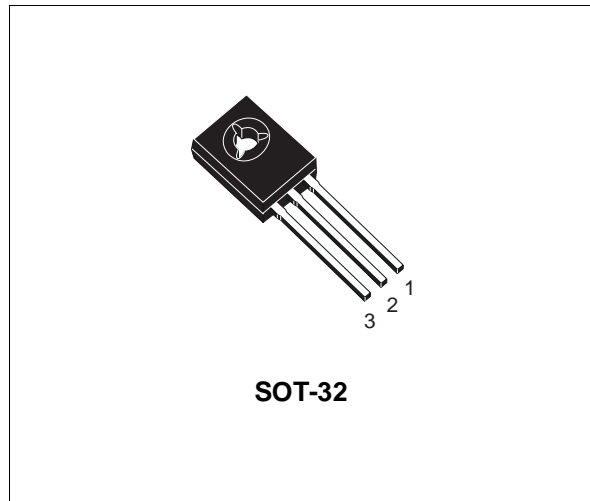


## COMPLEMENTARY SILICON POWER TRANSISTORS

- SGS-THOMSON 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	80	V
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	100	100	V
$V_{EBO}$	Base-Emitter Voltage ( $I_C = 0$ )	7	7	V
$I_C$	Collector Current	3	3	A
$I_{CM}$	Collector Peak Current	6	6	A
$I_B$	Base Current	1	1	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	12.5	12.5	W

## MJE172 - MJE182

### THERMAL DATA

R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	83.4	°C/W
R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	10	°C/W

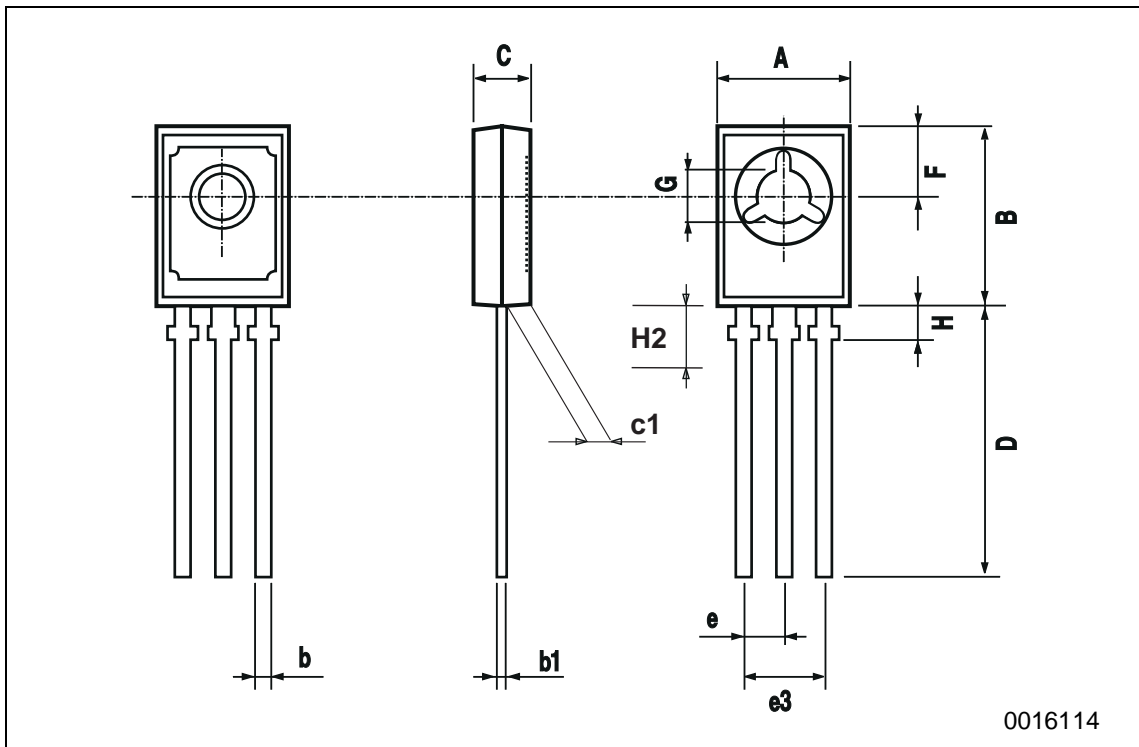
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

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> T <sub>CASE</sub> = 150°C			0.1 0.1	μA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 7 V			0.1	μA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 10 mA	80			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 0.5 A I <sub>C</sub> = 1.5 A I <sub>C</sub> = 3 A			0.3 0.9 1.7	V V V
V <sub>BE(sat)*</sub>	Base-Emitter on Voltage	I <sub>C</sub> = 1.5 A I <sub>C</sub> = 3 A			1.5 2	V V
V <sub>BE*</sub>	Base-Emitter on Voltage	I <sub>C</sub> = 0.5 A			1.2	V
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 0.1 A I <sub>C</sub> = 0.5 A I <sub>C</sub> = 1.5 A		50 30 12	250	
f <sub>T</sub>	Transistor Frequency	I <sub>C</sub> = 0.1 A f = 10 MHz		50		MHz
C <sub>CBO</sub>	Collector-base Capacitance	V <sub>CB</sub> = 10 V I <sub>E</sub> = 0 f = 0.1MHz for <b>MJE172</b> for <b>MJE182</b>			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		0.445
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
H2		2.15			0.084	



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