

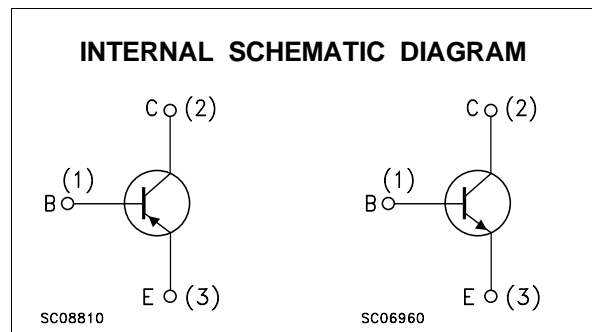
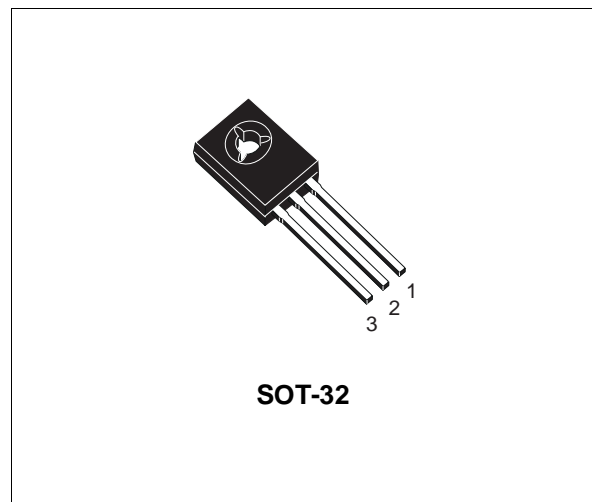
## COMPLEMENTARY SILICON POWER TRANSISTORS

- 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 <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

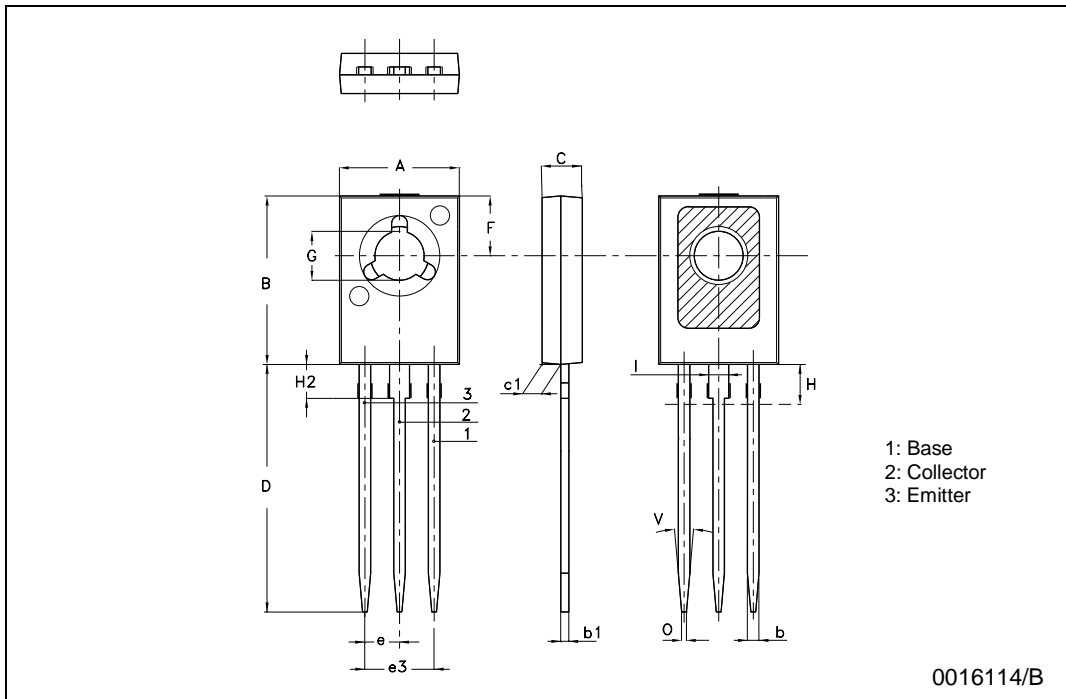
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

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>B</sub> = 0)	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	I <sub>B</sub> = 50 mA I <sub>B</sub> = 0.15 A I <sub>B</sub> = 0.6 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	I <sub>B</sub> = 0.15 A I <sub>B</sub> = 0.6 A			1.5 2	V V
V <sub>BE*</sub>	Base-Emitter on Voltage	I <sub>C</sub> = 0.5 A	V <sub>CE</sub> = 1 V			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	V <sub>CE</sub> = 1 V V <sub>CE</sub> = 1 V V <sub>CE</sub> = 1 V	50 30 12		250	
f <sub>T</sub>	Transistor Frequency	I <sub>C</sub> = 0.1 A f = 10 MHz	V <sub>CE</sub> = 10 V	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		0.425
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°	



Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics.

All other names are the property of their respective owners.

© 2003 STMicroelectronics – All Rights reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>