

## COMPLEMENTARY SILICON POWER TRANSISTORS

- STM PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES
- SURFACE-MOUNTING TO-252 (DPAK)  
POWER PACKAGE IN TAPE & REEL  
(SUFFIX T4)

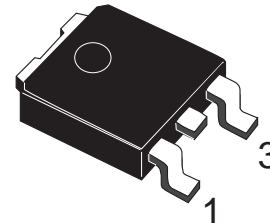
### APPLICATIONS

- AUDIO AMPLIFIERS

### DESCRIPTION

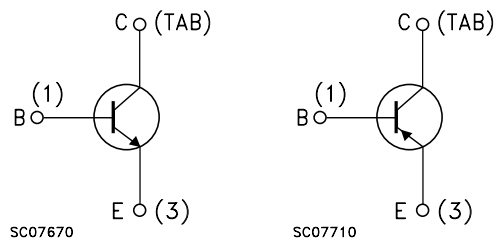
The MJD200 is an Epitaxial-Base NPN transistor designed for low voltage, low power, high gain, audio amplifier applications.

The complementary PNP type is MJD210.



**DPAK  
TO-252**  
(Suffix "T4")

### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	NPN	Value	Unit
		PNP	MJD210	
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )		40	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )		25	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )		8	V
$I_C$	Collector Current		5	A
$I_{CM}$	Collector Peak Current		10	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^\circ C$		12.5	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.

## MJD200 / MJD210

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	10	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	89.3	°C/W

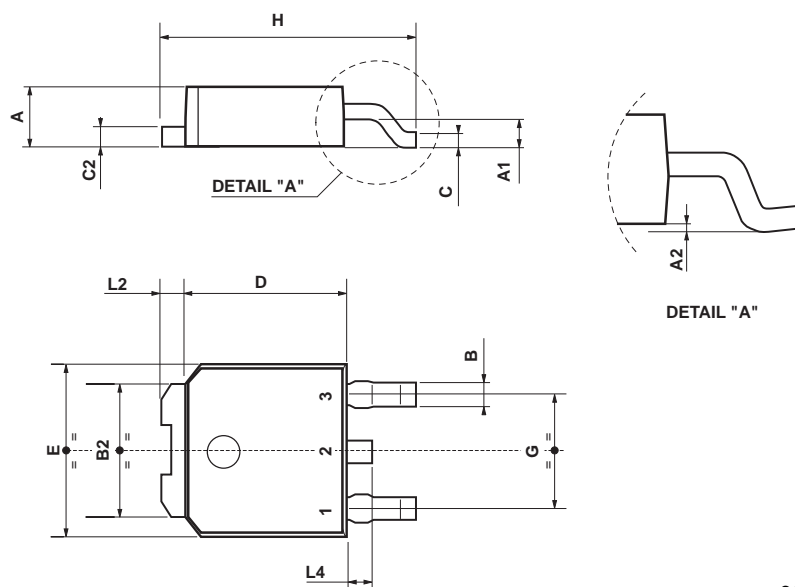
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>CEO(sus)</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 10 mA	25			V
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 40 V V <sub>CB</sub> = 40 V T <sub>J</sub> = 125 °C			0.1 0.1	μA μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>BE</sub> = 8 V			0.1	μA
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 500 mA I <sub>B</sub> = 50 mA I <sub>C</sub> = 2 A I <sub>B</sub> = 200 mA I <sub>C</sub> = 5 A I <sub>B</sub> = 1 A			0.3 0.75 1.8	V V V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5 A I <sub>B</sub> = 1 A			2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 2 A V <sub>CE</sub> = 1 V			1.6	V
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 100 mA V <sub>CE</sub> = 10 V f = 10 MHz	65			MHz
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 500 mA V <sub>CE</sub> = 1 V I <sub>C</sub> = 2 A V <sub>CE</sub> = 1 V I <sub>C</sub> = 5 A V <sub>CE</sub> = 2 V	70 45 10		180	

\* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %  
For PNP type voltage and current values are negative.

TO-252 (DPAK) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.64		0.9	0.025		0.035
B2	5.2		5.4	0.204		0.212
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
E	6.4		6.6	0.252		0.260
G	4.4		4.6	0.173		0.181
H	9.35		10.1	0.368		0.397
L2		0.8			0.031	
L4	0.6		1	0.023		0.039



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