

COMPLEMENTARY SILICON POWER TRANSISTORS

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

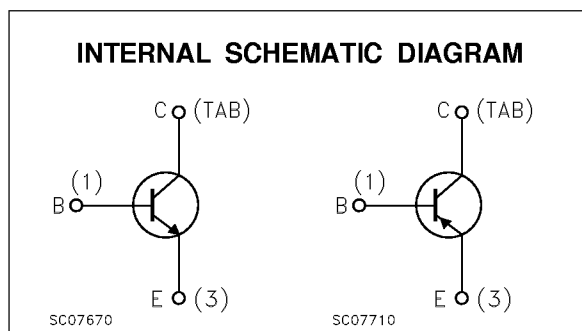
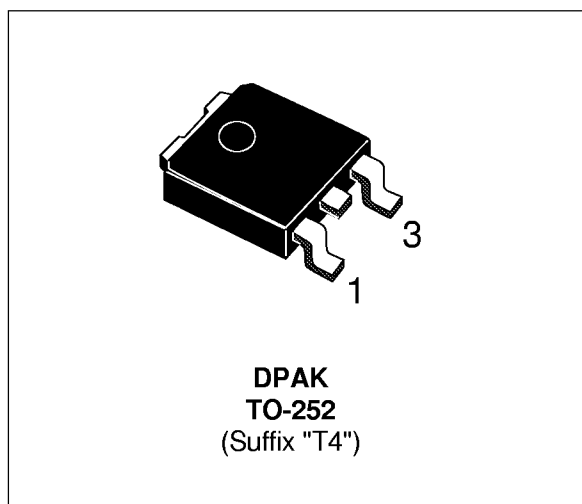
APPLICATIONS

- 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.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	MJD200	
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

$R_{thj-case}$	Thermal Resistance Junction-case	Max	10	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	89.3	$^{\circ}C/W$

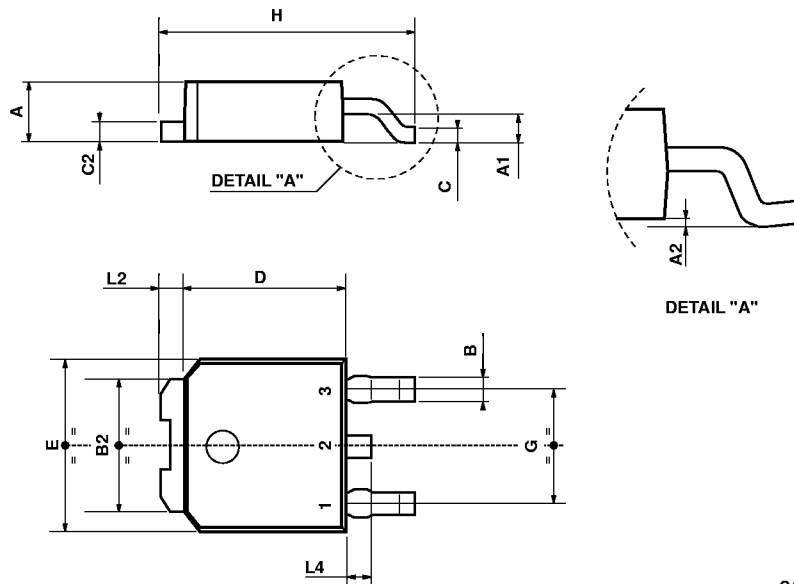
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$	25			V
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 40\text{ V}$ $V_{CB} = 40\text{ V}$ $T_J = 125^{\circ}C$			0.1 0.1	μA μA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{BE} = 8\text{ V}$			0.1	μA
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$ $I_C = 2\text{ A}$ $I_B = 200\text{ mA}$ $I_C = 5\text{ A}$ $I_B = 1\text{ A}$			0.3 0.75 1.8	V V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 5\text{ A}$ $I_B = 1\text{ A}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 2\text{ A}$ $V_{CE} = 1\text{ V}$			1.6	V
f_T	Transition Frequency	$I_C = 100\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 10\text{ MHz}$	65			MHz
h_{FE}^*	DC Current Gain	$I_C = 500\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 2\text{ A}$ $V_{CE} = 1\text{ V}$ $I_C = 5\text{ A}$ $V_{CE} = 2\text{ V}$	70 45 10		180	

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$
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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