

isc Silicon NPN Power Transistor

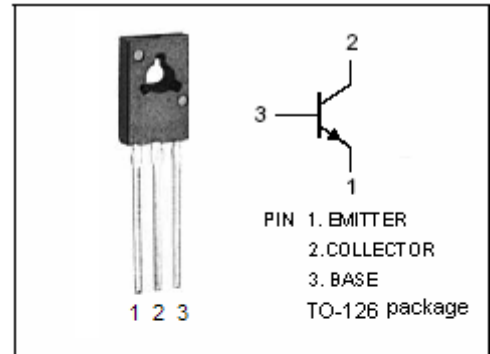
MJE200

DESCRIPTION

- Low Collector–Emitter Saturation Voltage–
- DC Current Gain-Bandwidth Product
- High DC Current Gain
- Complement to MJE210

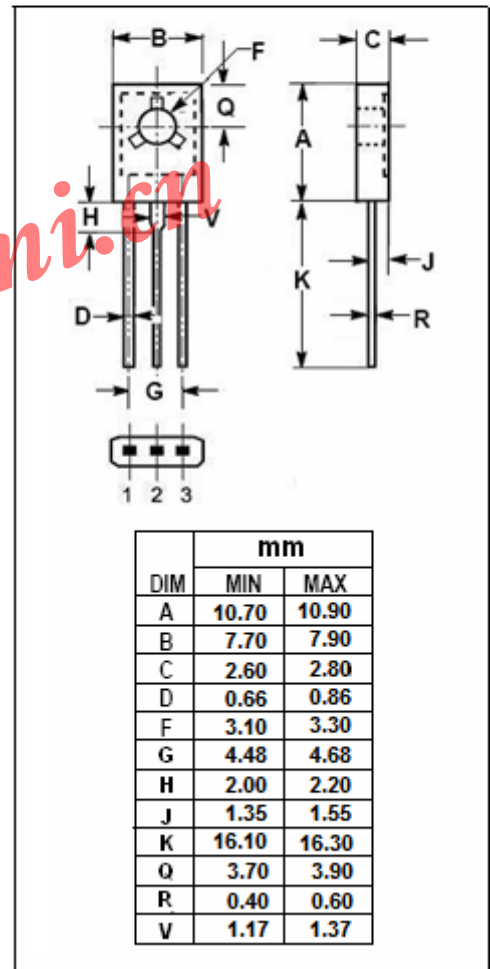
APPLICATIONS

- Designed for low voltage, low-power, high-gain audio amplifier applications.



ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	25	V
V <sub>EBO</sub>	Emitter-Base Voltage	8	V
I <sub>C</sub>	Collector Current-Continuous	5	A
I <sub>B</sub>	Base Current	1	A
P <sub>C</sub>	Collector Power Dissipation T <sub>C</sub> =25°C	15	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-65~150	°C



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	8.34	°C/W
R <sub>th j-a</sub>	Thermal Resistance, Junction to Ambient	83.4	°C/W

## isc Silicon NPN Power Transistor

## MJE200

## ELECTRICAL CHARACTERISTICS

 $T_C = 25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 10\text{mA}; I_B = 0$	25		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 0.5\text{A}; I_B = 50\text{mA}$		0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}; I_B = 0.2\text{A}$		0.75	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}; I_B = 1\text{A}$		1.8	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
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 40\text{V}; I_E = 0$ $V_{CB} = 40\text{V}; I_E = 0; T_C = 125^\circ\text{C}$		0.1 0.1	$\mu\text{A}$ mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 8\text{V}; I_C = 0$		0.1	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C = 0.5\text{A}; V_{CE} = 1\text{V}$	70		
$h_{FE-2}$	DC Current Gain	$I_C = 2\text{A}; V_{CE} = 1\text{V}$	45	180	
$h_{FE-3}$	DC Current Gain	$I_C = 5\text{A}; V_{CE} = 2\text{V}$	10		
$f_T$	Current-Gain—Bandwidth Product	$I_C = 0.1\text{A}; V_{CE} = 10\text{V}; f_{test} = 10\text{MHz}$	65		MHz
$C_{OB}$	Collector Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f_{test} = 0.1\text{MHz}$		80	pF