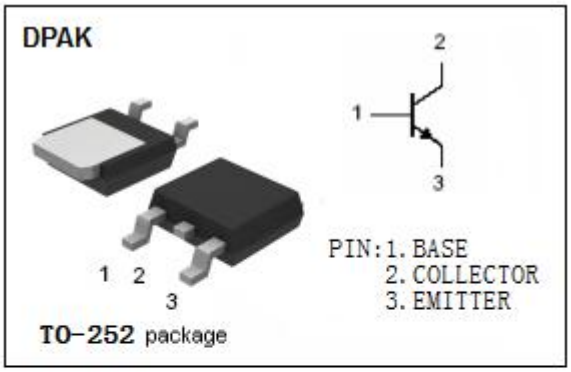
isc Silicon NPN Power Transistor — MJD200

DESCRIPTION

- DC Current Gain–
  : h_{FE} = 70(Min) @ I_C= 0.5A
- Low Collector Saturation Voltage–
  : $V_{CE(sat)}$ = 0.3V(Max.)@ I_C= 0.5 A
- Complement to the PNP MJD210
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

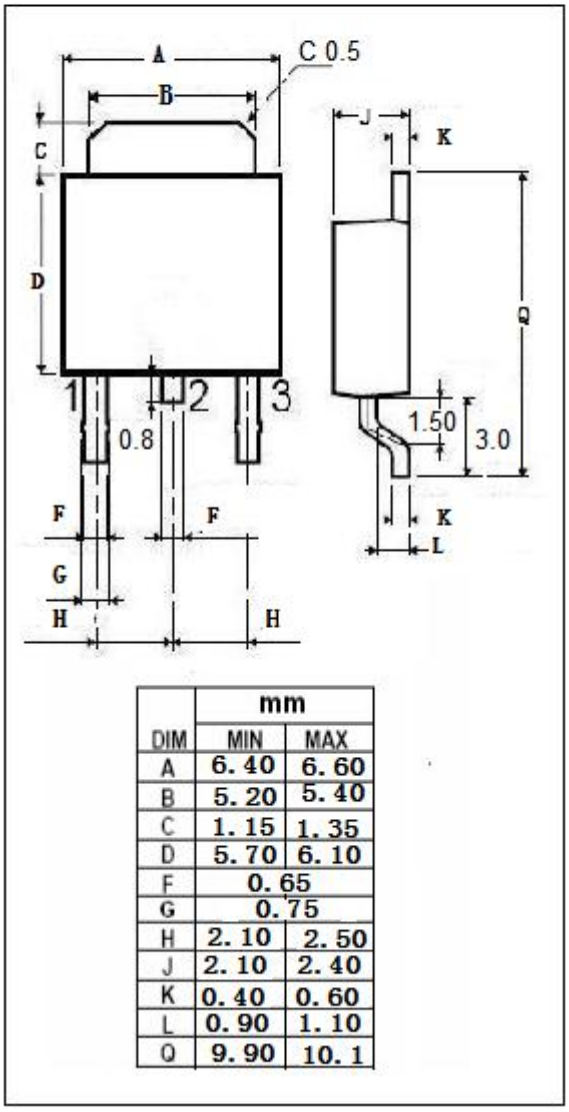


APPLICATIONS

- Designed for low power audio amplifier and low-current, high-speed switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation T_a=25℃	1.4	W
	Collector Power Dissipation T_C=25℃	12.5	
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃



DIM	mm MIN	MAX
A	6.40	6.60
B	5.20	5.40
C	1.15	1.35
D	5.70	6.10
F	0.65	
G	0.75	
H	2.10	2.50
J	2.10	2.40
K	0.40	0.60
L	0.90	1.10
Q	9.90	10.1

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	10	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	89.3	℃/W

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ELECTRICAL CHARACTERISTICS

T_C =25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 10mA; I_B= 0	25		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 0.5 A ;I_B= 50mA		0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 2A ;I_B= 0.2A		0.75	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	I_C= 5A ;I_B= 1A		1.8	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 5A ;I_B= 1A		2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 2A; V_{CE}= 1V		1.6	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 40V; I_E= 0 V_{CB}= 40V; I_E= 0;T_C= 125℃		0.1 0.1	μA mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 8V; I_C= 0		0.1	μA
h_{FE-1}	DC Current Gain	I_C= 0.5 A ; V_{CE}= 1V	70		
h_{FE-2}	DC Current Gain	I_C= 2A ; V_{CE}= 1V	45	180	
h_{FE-3}	DC Current Gain	I_C= 5A ; V_{CE}= 2V	10		
f_T	Current-Gain—Bandwidth Product	I_C= 0.1 A; V_{CE}= 10V; f_{test} = 10MHz	65		MHz
C_{OB}	Collector Capacitance	I_E= 0; V_{CB}= 10V; f_{test} = 0.1MHz	60		pF