

## isc Silicon NPN Power Transistor

## MJD200

## DESCRIPTION

- DC Current Gain–  
:  $h_{FE} = 70(\text{Min}) @ I_C = 0.5\text{A}$
- Low Collector Saturation Voltage–  
:  $V_{CE(\text{sat})} = 0.3\text{V}(\text{Max.}) @ I_C = 0.5\text{A}$
- 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.

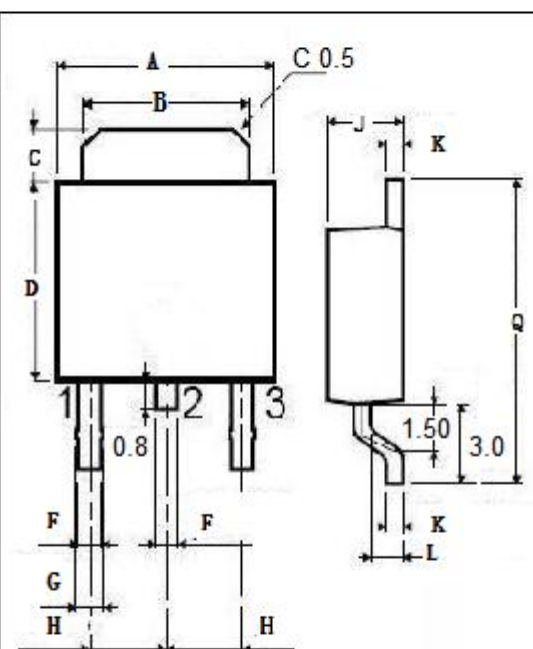
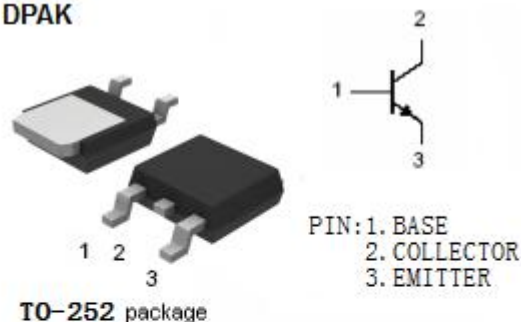
ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

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 $T_a=25^\circ\text{C}$	1.4	W
	Collector Power Dissipation $T_C=25^\circ\text{C}$	12.5	
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

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

## DPAK



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

## isc Silicon NPN Power Transistor

## MJD200

## 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	$I_E = 0; V_{CB} = 10\text{V}; f_{test} = 0.1\text{MHz}$	60		pF

## Notice:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment

which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.