

isc Silicon NPN Power Transistor

MJD148

DESCRIPTION

- DC Current Gain–
: $h_{FE} = 85(\text{Min}) @ I_C = 0.5A$
- Low Collector Saturation Voltage–
: $V_{CE(sat)} = 0.5V(\text{Max.}) @ I_C = 2A$
- DPAK for Surface Mount Applications
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

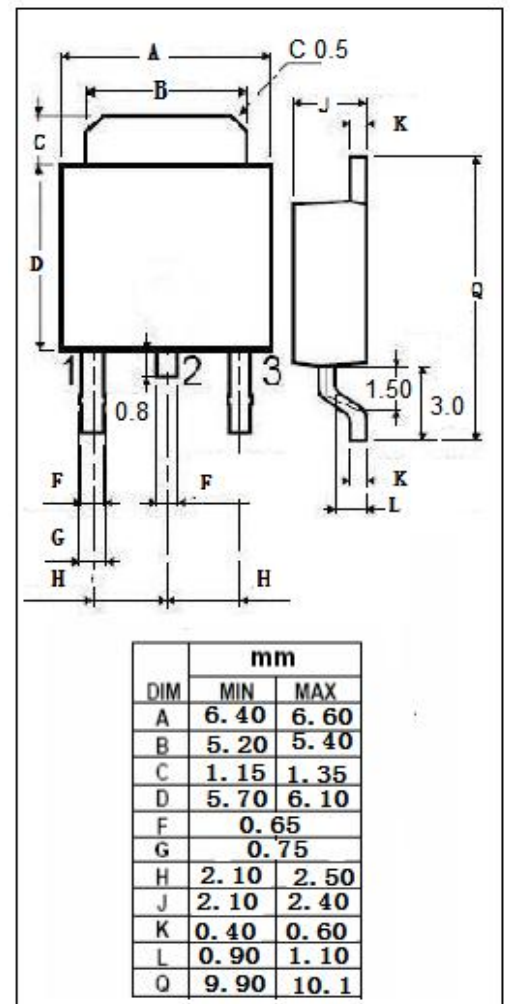
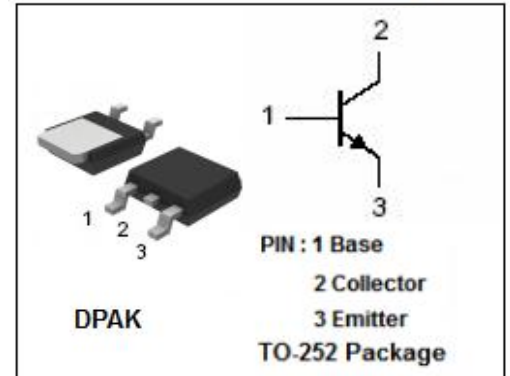
- Designed for use in general purpose amplifier and low speed switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Collector Current-Peak	7	A
I_B	Base Current	50	mA
P_C	Collector Power Dissipation $T_a = 25^\circ\text{C}$	1.75	W
	Collector Power Dissipation $T_c = 25^\circ\text{C}$	20	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	6.25	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	71.4	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**MJD148****ELECTRICAL CHARACTERISTICS** $T_C = 25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 30\text{mA}; I_B = 0$	45		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}; I_B = 0.2\text{A}$		0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 2\text{A}; V_{CE} = 1\text{V}$		1.1	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 45\text{V}; I_E = 0$		20	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}; I_C = 0$		1	mA
h_{FE-1}	DC Current Gain	$I_C = 10\text{mA}; V_{CE} = 5\text{V}$	40		
h_{FE-2}	DC Current Gain	$I_C = 0.5\text{A}; V_{CE} = 1\text{V}$	85	375	
h_{FE-3}	DC Current Gain	$I_C = 2\text{A}; V_{CE} = 1\text{V}$	50		
h_{FE-4}	DC Current Gain	$I_C = 3\text{A}; V_{CE} = 1\text{V}$	30		
f_T	Current-Gain—Bandwidth Product	$I_C = 0.25\text{A}; V_{CE} = 1\text{V}; f_{test} = 1\text{MHz}$	3		MHz

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