

isc Silicon PNP Power Transistors

MJE5170/5171/5172

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = -120V(\text{Min})$ - MJE5170
= $-140V(\text{Min})$ - MJE5171
= $-160V(\text{Min})$ - MJE5172
- Low Saturation Voltage
- Complement to Type MJE5180/5181/5182

APPLICATIONS

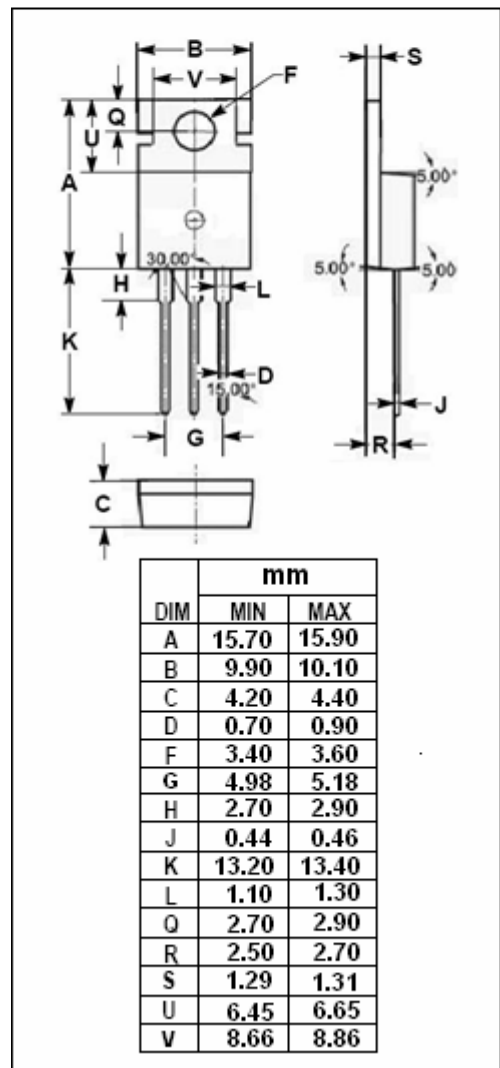
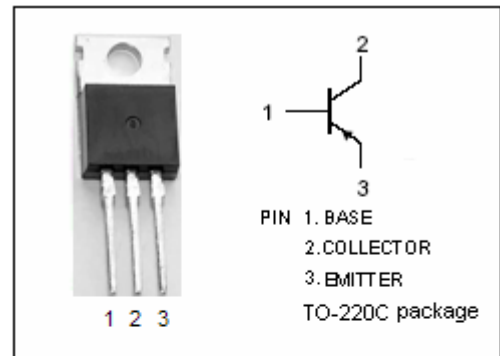
- Designed for use in general purpose amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	MJE5170	-120
		MJE5171	-140
		MJE5172	-160
V_{CEO}	Collector-Emitter Voltage	MJE5170	-120
		MJE5171	-140
		MJE5172	-160
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-6	A
I_{CM}	Collector Current-Peak	-10	A
I_B	Base Current-Continuous	-2	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	65	W
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	
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	1.92	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	MJE5170	$I_C = -30\text{mA}; I_B = 0$	-120		V
		MJE5171		-140		
		MJE5172		-160		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C = -6\text{A}; I_B = -0.6\text{A}$		-1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = -6\text{A}; V_{CE} = -4\text{V}$		-2.0	V
I_{CEO}	Collector Cutoff Current	MJE5170	$V_{CE} = -60\text{V}; I_B = 0$		-0.7	mA
		MJE5171	$V_{CE} = -70\text{V}; I_B = 0$		-0.7	
		MJE5172	$V_{CE} = -80\text{V}; I_B = 0$		-0.7	
I_{CES}	Collector Cutoff Current	MJE5170	$V_{CE} = -120\text{V}; V_{EB} = 0$		-0.4	mA
		MJE5171	$V_{CE} = -140\text{V}; V_{EB} = 0$		-0.4	
		MJE5172	$V_{CE} = -160\text{V}; V_{EB} = 0$		-0.4	
I_{EBO}	Emitter Cutoff Current		$V_{EB} = -5\text{V}; I_C = 0$		-1.0	mA
h_{FE-1}	DC Current Gain		$I_C = -0.3\text{A}; V_{CE} = -4\text{V}$	30		
h_{FE-2}	DC Current Gain		$I_C = -3\text{A}; V_{CE} = -4\text{V}$	15	100	
f_T	Current-Gain—Bandwidth Product		$I_C = -0.5\text{A}; V_{CE} = -10\text{V}; f_{test} = 1.0\text{MHz}$	1.0		MHz