

isc Silicon NPN Power Transistors

MJE5180/5181/5182

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 120V(\text{Min})$ - MJE5180  
= 140V(Min)- MJE5181  
= 160V(Min)- MJE5182
- Low Saturation Voltage
- Complement to Type MJE5170/5171/5172

APPLICATIONS

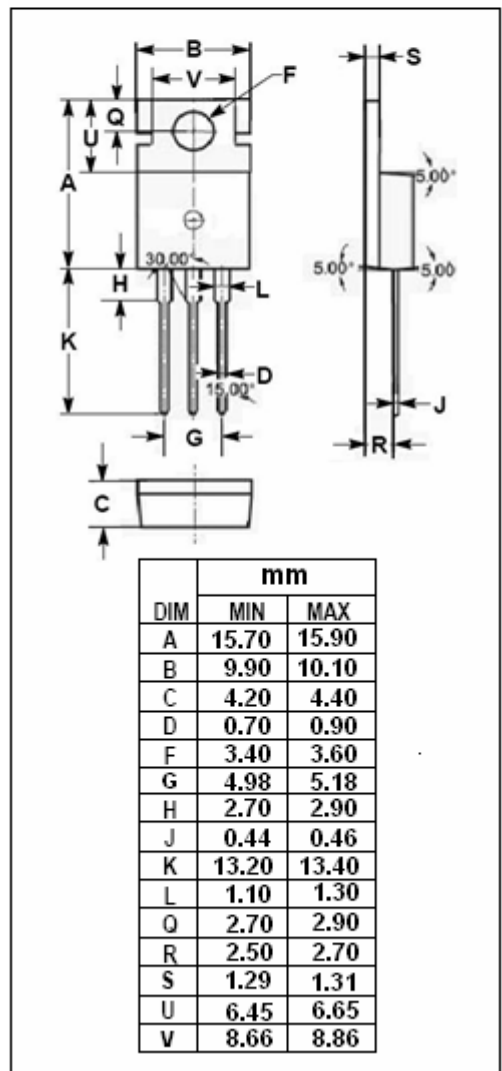
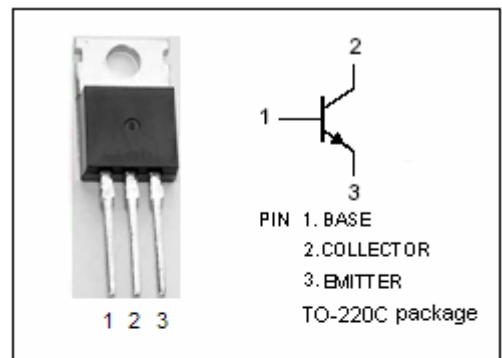
- Designed for use in general purpose amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT	
$V_{CBO}$	Collector-Base Voltage	MJE5180	120	V
		MJE5181	140	
		MJE5182	160	
$V_{CEO}$	Collector-Emitter Voltage	MJE5180	120	V
		MJE5181	140	
		MJE5182	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	
	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	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$



## isc Silicon NPN Power Transistors

## MJE5180/5181/5182

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	MJE5180	$I_C=30\text{mA}; I_B=0$	120		V
		MJE5181		140		
		MJE5182		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	MJE5180	$V_{CE}=60\text{V}; I_B=0$		0.7	mA
		MJE5181	$V_{CE}=70\text{V}; I_B=0$		0.7	
		MJE5182	$V_{CE}=80\text{V}; I_B=0$		0.7	
$I_{CES}$	Collector Cutoff Current	MJE5180	$V_{CE}=120\text{V}; V_{EB}=0$		0.4	mA
		MJE5181	$V_{CE}=140\text{V}; V_{EB}=0$		0.4	
		MJE5182	$V_{CE}=160\text{V}; V_{EB}=0$		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