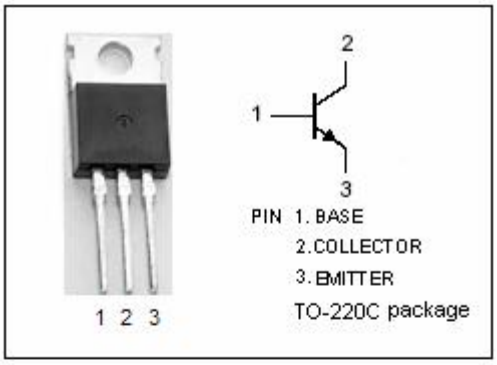
isc Silicon NPN Power Transistors — MJE5180/5181/5182

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 120V(Min)- MJE5180
  = 140V(Min)- MJE5181
  = 160V(Min)- MJE5182
- Low Saturation Voltage
- Complement to Type MJE5170/5171/5172
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

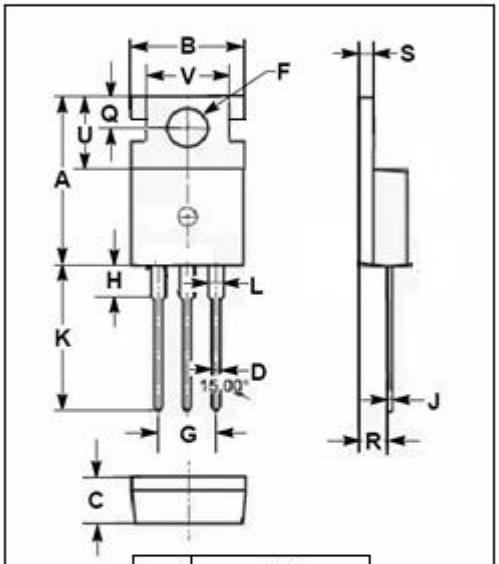


APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃		65	W
P_C	Collector Power Dissipation @ T_a=25℃		2	
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.92	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	62.5	℃/W

isc Silicon NPN Power Transistors MJE5180/5181/5182

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	MJE5180	I_C= 30mA ;I_B= 0	120		V
		MJE5181		140		
		MJE5182		160		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 6A; I_B= 0.6A		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 6A; V_{CE}= 4V		2.0	V
I_{CEO}	Collector Cutoff Current	MJE5180	V_{CE}= 60V; I_B= 0		0.7	mA
		MJE5181	V_{CE}= 70V; I_B= 0		0.7	
		MJE5182	V_{CE}= 80V; I_B= 0		0.7	
I_{CBO}	Collector Cutoff Current	MJE5180	V_{CB}= 120V;V_{EB}= 0		0.4	mA
		MJE5181	V_{CB}= 140V;V_{EB}= 0		0.4	
		MJE5182	V_{CB}= 160V;V_{EB}= 0		0.4	
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C=0		1.0	mA
h_{FE-1}	DC Current Gain		I_C= 0.3A; V_{CE}= 4V	30		
h_{FE-2}	DC Current Gain		I_C= 3A; V_{CE}= 4V	15	100	
f_T	Current-Gain—Bandwidth Product		I_C= 0.5A ;V_{CE}= 10V;f_{test}= 1.0MHz	1.0		MHz

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.