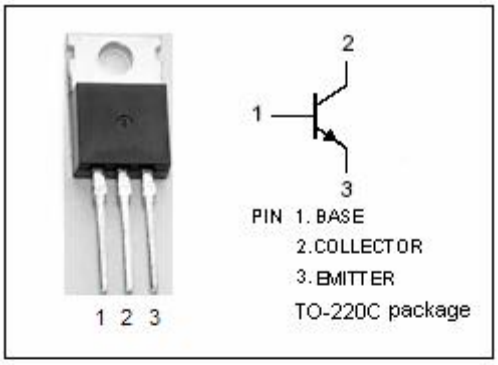
isc Silicon NPN Power Transistor — MJE13005



DESCRIPTION

- Collector–Emitter Sustaining Voltage
  : $V_{CEO(SUS)}$ = 400V(Min.)
- Collector Saturation Voltage
  : $V_{CE(sat)}$ = 0.6(Max) @ I_C= 2.0A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

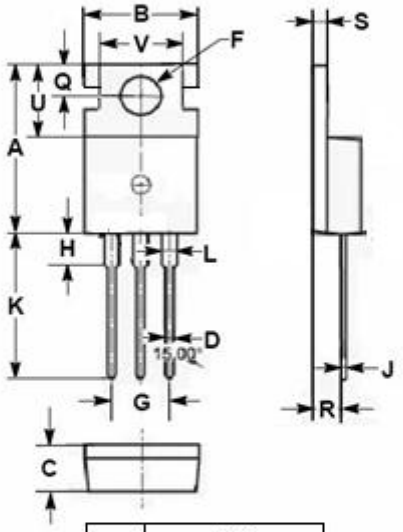
- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulators,inverters,Motor controls,Solenoid/Relay drivers and deflection circuits.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Collector Current-peak	8	A
P_C	Collector Power Dissipation T_a=25℃	2	W
	Collector Power Dissipation T_C=25℃	75	
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.67	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	62.5	℃/W



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

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ELECTRICAL CHARACTERISTICS

T_C =25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 10mA; I_B= 0	400			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 1A ;I_B= 0.2A			0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 2A ;I_B= 0.5 A			0.6	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	I_C= 4A ;I_B= 1A			1.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 1A ;I_B= 0.2A			1.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 2A ;I_B= 0.5 A			1.6	V
I_{CEV}	Collector Cutoff Current	V_{CEV}= 700V; $V_{BE(off)}$= 1.5V T_C= 100℃			1 5	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 9V; I_C= 0			1	mA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 5V	10		60	
h_{FE-2}	DC Current Gain	I_C= 2A; V_{CE}= 5V	8		40	
f_T	Current-Gain—Bandwidth Product	I_C= 0.5 A; V_{CE}= 10V;	4			MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test} = 0.1MHz		65		pF