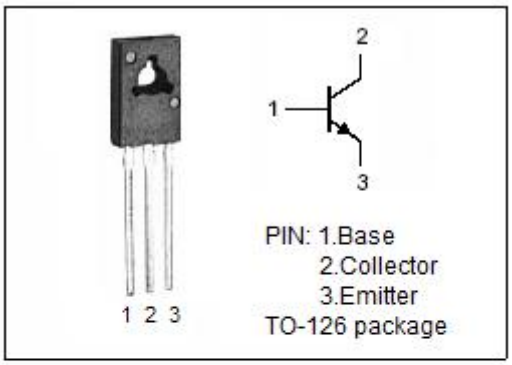
isc Silicon NPN Power Transistor — MJE13003A

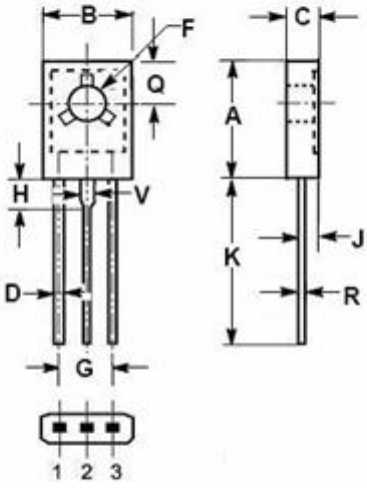
DESCRIPTION

- Collector–Emitter Sustaining Voltage
  : $V_{CEO(SUS)}$ = 400V(Min.)
- Collector Saturation Voltage
  : $V_{CE(sat)}$ = 1.0(Max) @ I_C= 1.0A
- 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, DC-DC converter, Motor control, Solenoid/Relay drivers and deflection circuits.



DIM	mm MIN	MAX
A	10.70	10.95
B	7.70	7.90
C	2.60	2.80
D	0.66	0.86
F	3.10	3.30
G	4.48	4.68
H	2.00	2.20
J	1.35	1.55
K	15.30	16.30
Q	3.70	3.90
R	0.40	0.60
V	1.17	1.37

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	1.5	A
I_B	Base Current	0.75	A
P_C	Collector Power Dissipation T_a=25℃	1.4	W
	Collector Power Dissipation T_C=25℃	20	
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	3.12	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	89	℃/W

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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
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 1 A ;I_B= 0.25A			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 1 A ;I_B= 0.25A			1.2	V
I_{EBO}	Emitter Cutoff Current	V_{EB}= 9V; I_C= 0			1	mA
I_{CEO}	Collector Cutoff Curren	V_{CE}= 400V; I_B= 0			0.5	mA
I_{CBO}	Collector Cutoff Curren	V_{CB}= 700V; I_E= 0			1	mA
h_{FE-1}	DC Current Gain	I_C= 0.5 A; V_{CE}= 5V	8		40	
h_{FE-2}	DC Current Gain	I_C= 1.5mA; V_{CE}= 5V	5			
f_T	Current-Gain—Bandwidth Product	I_C= 0.1 A; V_{CE}= 10V;	5			MHz