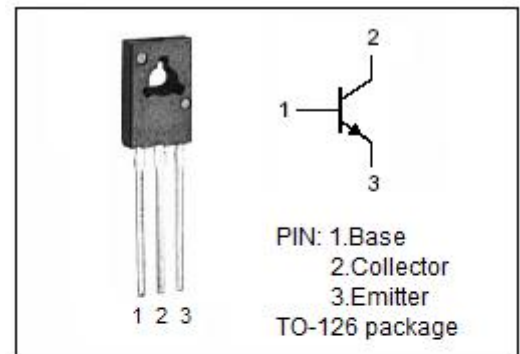


isc Silicon NPN Power Transistor
MJE13003A
DESCRIPTION

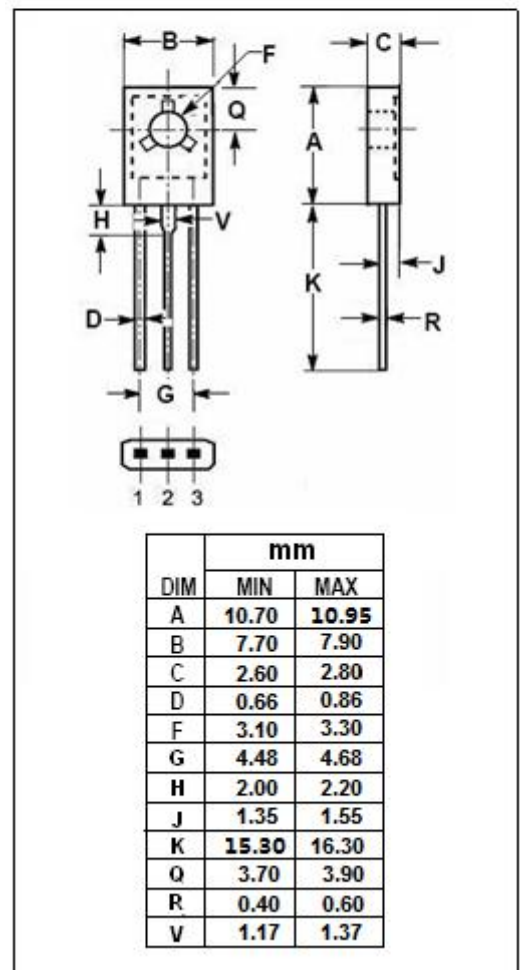
- Collector–Emitter Sustaining Voltage
: $V_{CEO(SUS)} = 400V(\text{Min.})$
- Collector Saturation Voltage
: $V_{CE(sat)} = 1.0(\text{Max}) @ I_C = 1.0A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

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.


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

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 $T_a=25^\circ\text{C}$	1.4	W
	Collector Power Dissipation $T_C=25^\circ\text{C}$	20	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$


THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

T_c =25°C 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

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