

Silicon NPN Power Transistor

MJE13003D

DESCRIPTION

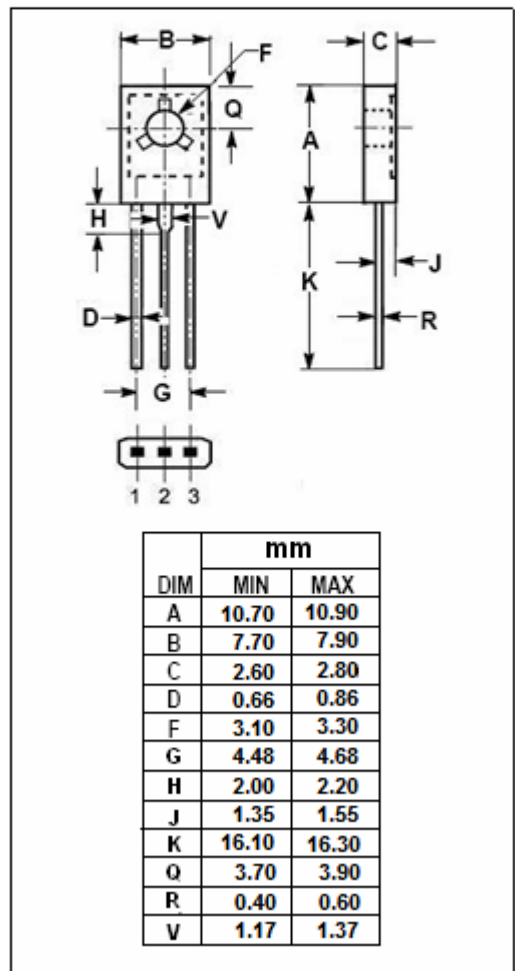
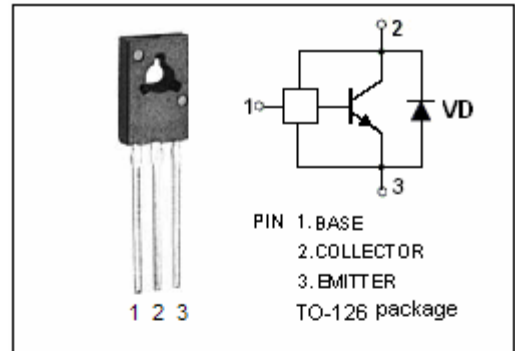
- High Voltage Capability
- High Speed Switching
- Wide Area of Safe Operation

APPLICATIONS

- Fluorescent lamp
- Electronic ballast
- Electronic transformer
- Switch mode power supply

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CB0}	Collector-Base Voltage	700	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current-Continuous	2	A
P _C	Collector Power Dissipation @T _C =25°C	40	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-65~150	°C



Silicon NPN Power Transistor

MJE13003D

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}; I_B=0$	400			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	9			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=0.25\text{A}$			0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=0.5\text{A}$			0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=0.5\text{A}; I_B=0.1\text{A}$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=700\text{V}; I_E=0$			100	μA
I_{CEO}	Collector Cutoff Current	$V_{CE}=400\text{V}; I_B=0$			250	μA
h_{FE-1}	DC Current Gain	$I_C=1\text{mA}; V_{CE}=5\text{V}$	7			
h_{FE-2}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=5\text{V}$	10		40	
h_{FE-3}	DC Current Gain	$I_C=2\text{A}; V_{CE}=5\text{V}$	5			
V_{ECF}	C-E Diode Forward Voltage	$I_F=2\text{A}$			2.0	V

Switching Times

t_s	Storage Time	$I_C=0.25\text{A}; V_{CC}=5\text{V}$			3.5	μs
t_f	Fall Time				0.8	μs