

Silicon NPN Power Transistor

MJE13005D

DESCRIPTION

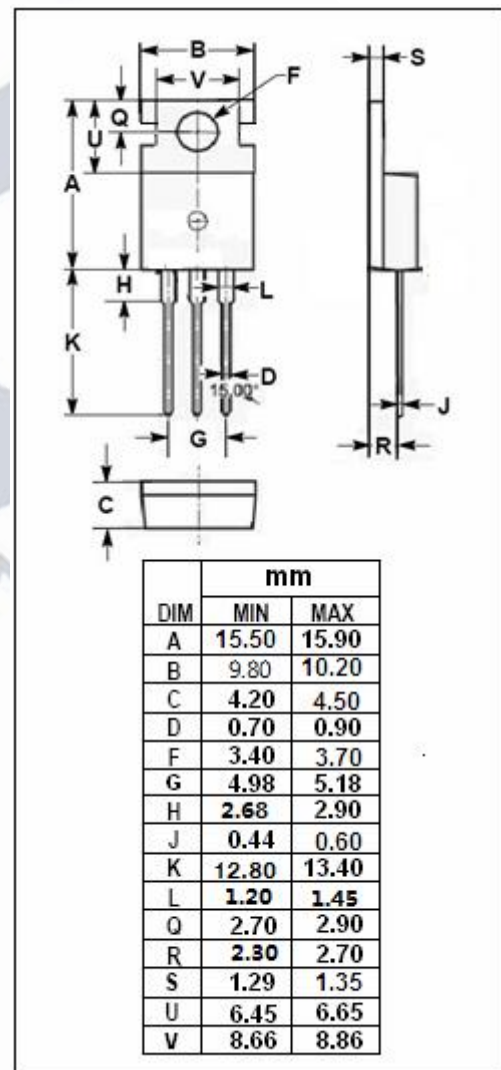
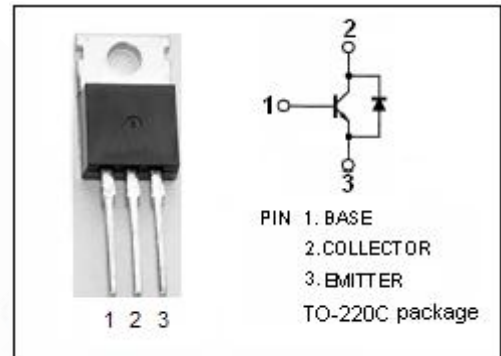
- High Voltage Capability
- High Speed Switching
- Wide Area of Safe Operation

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	700	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	9	V
I <sub>C</sub>	Collector Current-Continuous	4	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	75	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~150	°C



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## 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
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.5\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=700\text{V}; I_E=0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=9\text{V}; I_C=0$			0.1	mA
$h_{FE-1}$	DC Current Gain	$I_C=5\text{mA}; V_{CE}=5\text{V}$	10			
$h_{FE-2}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	10		40	
$f_T$	Current Gain-Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}; f_{test}=1\text{MHz}$	7			MHz
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=4\text{A}$			2.0	V

## Switching Times

$t_s$	Storage Time	$I_C=0.25\text{A}$			6.0	$\mu\text{s}$
$t_f$	Fall Time	$I_C=0.5\text{A}$			0.6	$\mu\text{s}$