

isc Silicon NPN Power Transistor

MJE51T

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 250V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

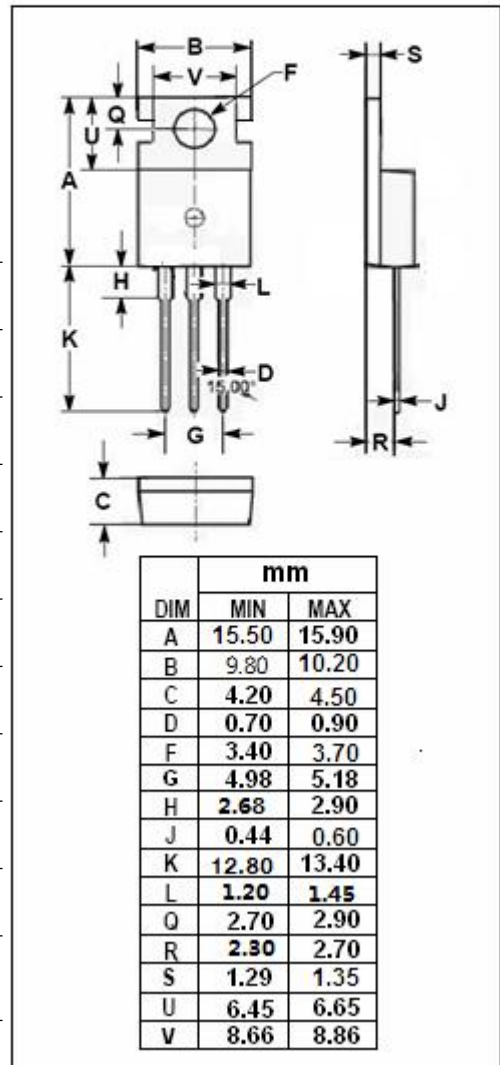
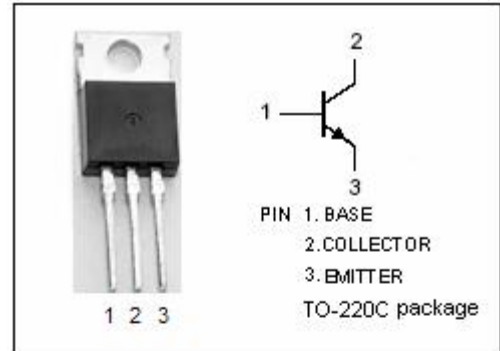
- Designed for high voltage inverters, switching regulators and line operated amplifier applications. Especially well suited for switching power supply applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	350	V
V_{CEO}	Collector-Emitter Voltage	250	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.56	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**MJE51T****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 25\text{mA}; I_B = 0$	250			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}; I_B = 2\text{A}$			2.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 5\text{A}; V_{CE} = 10\text{V}$			2.0	V
I_{CEO}	Collector Cutoff Current	$V_{CE} = 150\text{V}; I_B = 0$			1.0	mA
I_{CES}	Collector Cutoff Current	$V_{CE} = 350\text{V}; V_{BE} = 0$			1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}; I_C = 0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C = 0.3\text{A}; V_{CE} = 10\text{V}$	30			
h_{FE-2}	DC Current Gain	$I_C = 5\text{A}; V_{CE} = 10\text{V}$	5			
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f_{test} = 0.1\text{MHz}$		150		pF

Switching times

t_{on}	Turn-On Time	$I_C = 2.5\text{A}, I_{B1} = -I_{B2} = 0.5\text{A}$ $V_{BE(off)} = 5\text{V}; V_{CC} = 125\text{V}$		0.5		μs
t_{off}	Turn-Off Time			2.0		μs

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