

isc Silicon NPN Power Transistor

MJE51T

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 250V(\text{Min})$

APPLICATIONS

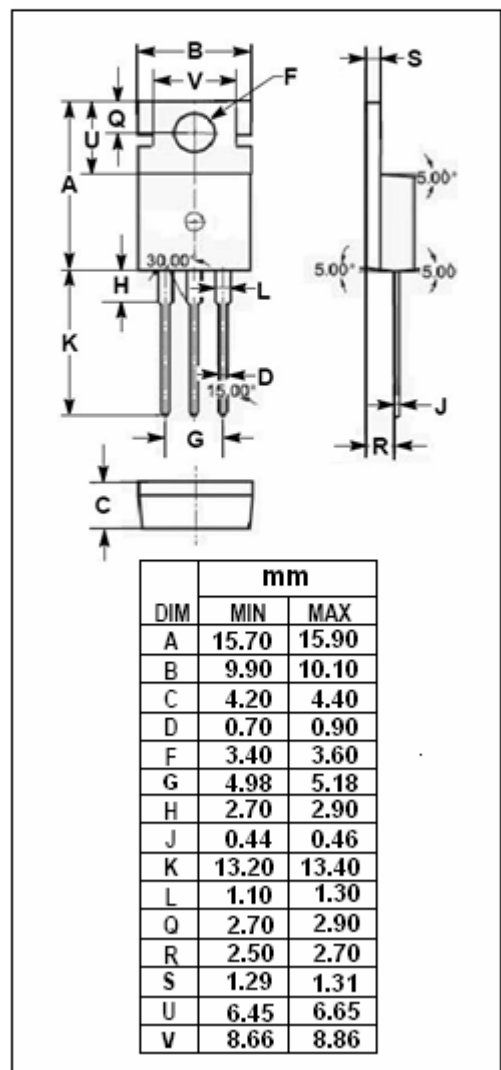
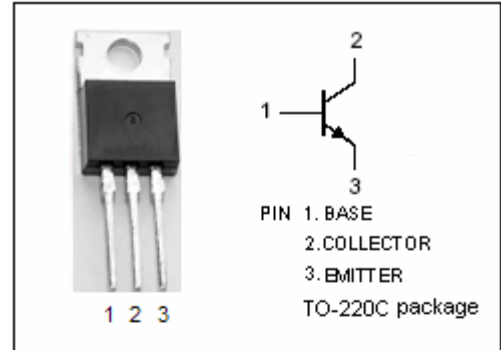
- Designed for high voltage inverters, switching regulators and line operated amplifier applications. Especially well suited for switching power supply applications

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	$^\circ\text{C}/\text{W}$



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## 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		$\mu\text{s}$
$t_{off}$	Turn-Off Time			2.0		$\mu\text{s}$