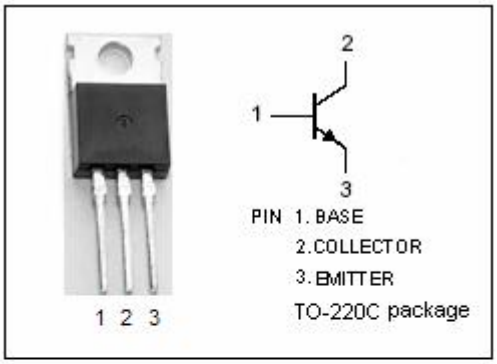
isc Silicon NPN Power Transistors — MJE13070/13071

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 400V(Min)- MJE13070
  = 450V(Min)- MJE13071
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$ = 3.0V(Min)@I_C= 5A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

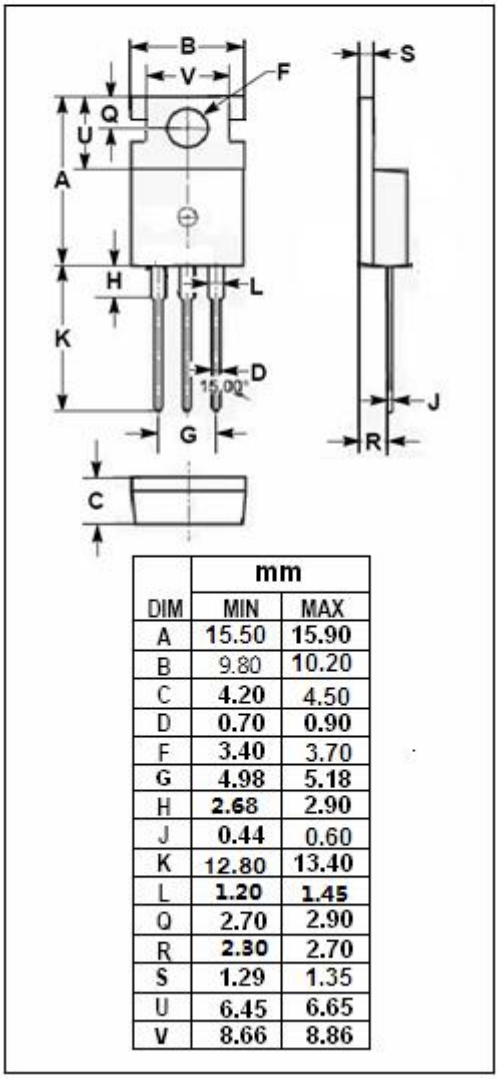


APPLICATIONS

- Designed for high-voltage, high-speed, power switching in inductive circuits, where fall time is critical.They are particularly suited for line-operated switchmode applications such as switching regulators , inverters , DC-DC converter, motor controls, solenoid drive and deflection circuits.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector- Base Voltage	MJE13070	650	V
		MJE13071	750	
V_{CEO}	Collector-Emitter Voltage	MJE13070	400	V
		MJE13071	450	
V_{EBO}	Emitter-Base Voltage		6	V
I_C	Collector Current-Continuous		5	A
I_{CM}	Collector Current-Peak		8	A
I_B	Base Current		2	A
P_C	Collector Power Dissipation @ T_C=25℃		80	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	MJE13070	I_C= 50mA ;I_B= 0	400		V
		MJE13071		450		
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		I_C= 3A; I_B= 0.6A I_C= 3A; I_B= 0.6A;T_C=100℃		1.0 2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		I_C= 5A; I_B= 1A		3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		I_C= 3A; I_B= 0.6A I_C= 3A; I_B= 0.6A;T_C=100℃		1.5 1.5	V
I_{CBO}	Collector Cutoff Current		V_{CB}=Rated Value;I_E= 0 V_{CB}=Rated Value;I_E= 0;T_C=100℃		0.5 2.5	mA
I_{EBO}	Emitter Cutoff Current		V_{EB}= 6V; I_C=0		1.0	mA
h_{FE}	DC Current Gain		I_C= 3A ; V_{CE}= 5V	8		
C_{OB}	Output Capacitance		I_E= 0; V_{CB}= 10V, f_{test}= 1.0kHz	100		pF
Switching Times						
t_d	Delay Time		I_C= 3A; I_{B1}= 0.4A;$V_{BE(off)}$= 5V; V_{CC}= 250V; t_p= 30 μs,Duty Cycle≤1%		0.05	μs
t_r	Rise Time				0.4	μs
t_{stg}	Storage Time				1.5	μs
t_f	Fall Time				0.5	μs

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