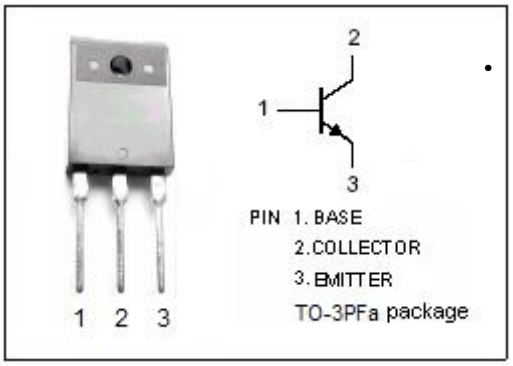
isc Silicon NPN Power Transistor — 2SC3171



DESCRIPTION

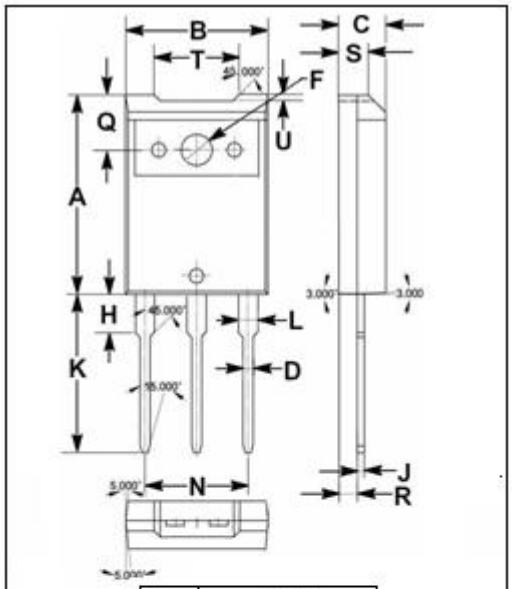
- Collector-Emiiter Sustaining Voltage-
  : $V_{CEO(SUS)}$= 400V(Min.)
- Low Collector Saturation Voltage
  : $V_{CE(sat)}$= 1.0V(Max.)@ I_C= 5A
- High Speed Switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for high speed switching applications.

ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	20	A
P_C	Collector Power Dissipation @T_a=25℃	3	W
	Collector Power Dissipation @T_C=25℃	100	
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	mm MAX
A	20.70	21.30
B	14.70	15.30
C	4.80	5.20
D	0.90	1.10
F	3.20	3.40
H	3.70	4.30
J	0.50	0.70
K	16.40	17.00
L	1.90	2.10
N	10.80	11.00
Q	5.60	6.00
R	1.80	2.20
S	3.10	3.50
T	8.70	9.30
U	0.55	0.75

isc Silicon NPN Power Transistor 2SC3171

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 20A; I_B=0	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 1A			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 5A; I_B= 1A			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 500V; I_E= 0			0.1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			0.1	mA
h_{FE-1}	DC Current Gain	I_C= 0.1A; V_{CE}= 5V	15			
h_{FE-2}	DC Current Gain	I_C= 5A; V_{CE}= 5V	8			
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A; V_{CE}= 10V		8		MHz
Switching Times; Resistive Load						
t_{on}	Turn-on Time	I_C= 5A; I_{B1}= -I_{B2}= 1A; V_{CC}= 100V			1.0	μs
t_s	Storage Time				3.0	μs
t_f	Fall Time				1.0	μs