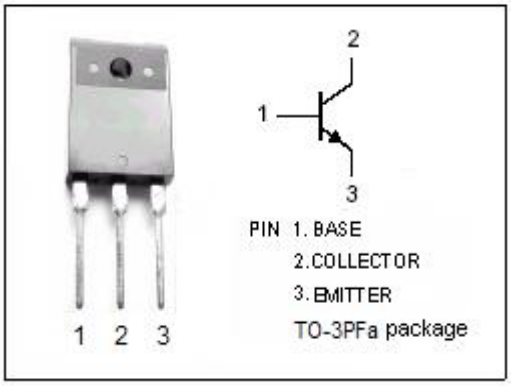
isc Silicon NPN Power Transistor — 2SD1706

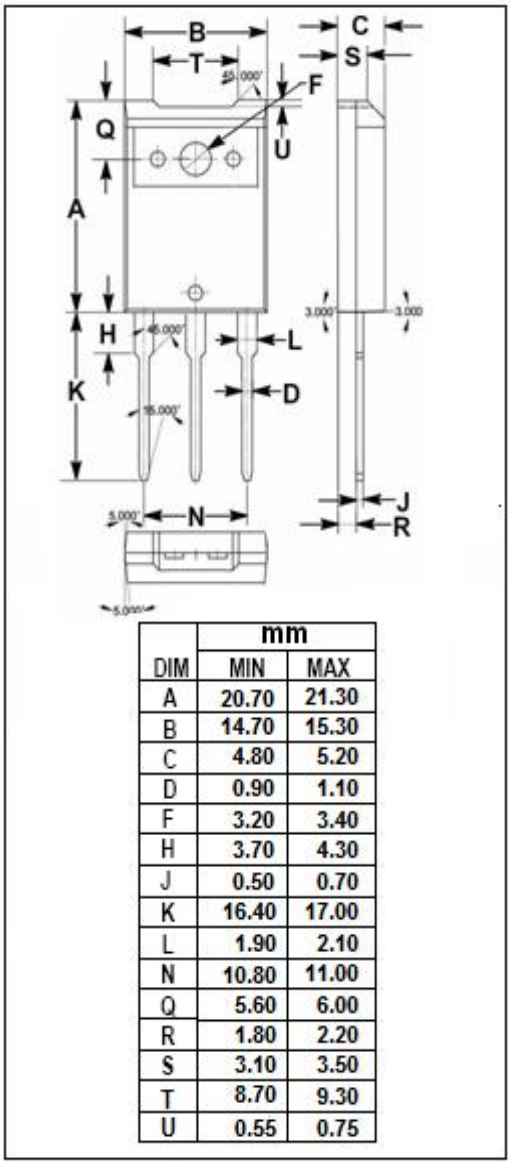


DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 80V(Min)
- Good Linearity of h_{FE}
- Low Collector Saturation Voltage-
  : $V_{CE(sat)}$= 0.5V(Max.)@ I_C= 7A
- Complement to Type 2SB1155
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for power switching applications



DIM	mm MIN	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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	130	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_{CP}	Collector Current-Pulse	25	A
P_C	Collector Power Dissipation @ T_C=25℃	80	W
	Collector Power Dissipation @ T_a=25℃	3	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 10mA; I_B= 0	80			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 7A; I_B= 0.35A			0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 15A; I_B= 1.5A			1.5	V
$V_{BE(sat)-1}$	Base -Emitter Saturation Voltage	I_C= 7A; I_B= 0.35A			1.5	V
$V_{BE(sat)-2}$	Base -Emitter Saturation Voltage	I_C= 15A; I_B= 1.5A			2.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 100V; I_E= 0			10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			50	μA
h_{FE-1}	DC Current Gain	I_C= 0.1A; V_{CE}= 2V	45			
h_{FE-2}	DC Current Gain	I_C= 3A; V_{CE}= 2V	60		260	
h_{FE-3}	DC Current Gain	I_C= 8A; V_{CE}= 2V	30			
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A; V_{CE}= 10V		20		MHz
Switching Times						
t_{on}	Turn-on Time	I_C= 7A, I_{B1}= I_{B2}= 0.7A		0.5		μs
t_{stg}	Storage Time			2.0		μs
t_f	Fall Time			0.2		μs

◆ **h_{FE-2}Classifications**

R	Q	P
60-120	90-180	130-260

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