

isc Silicon NPN Power Transistor
2SD1707
DESCRIPTION

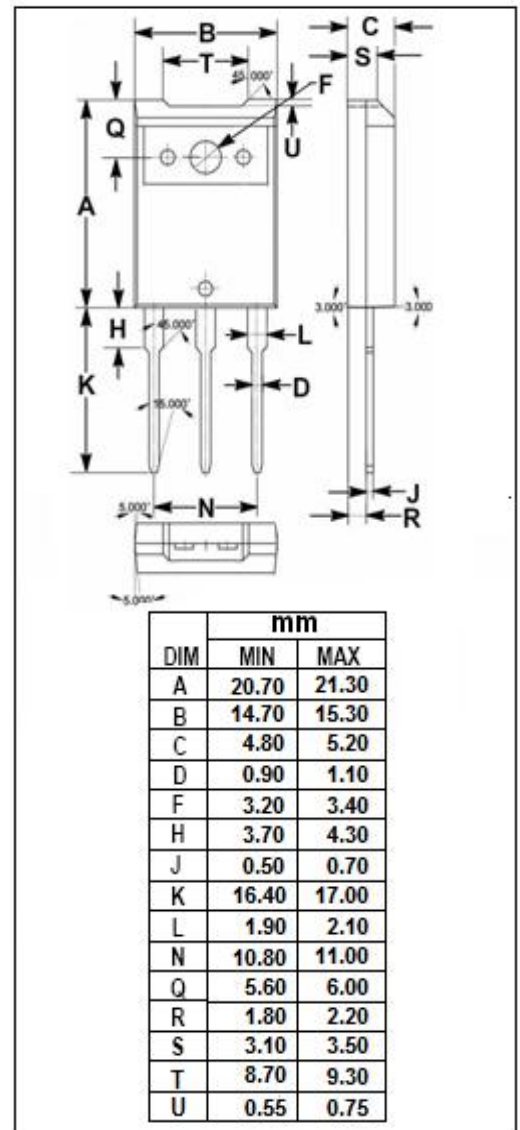
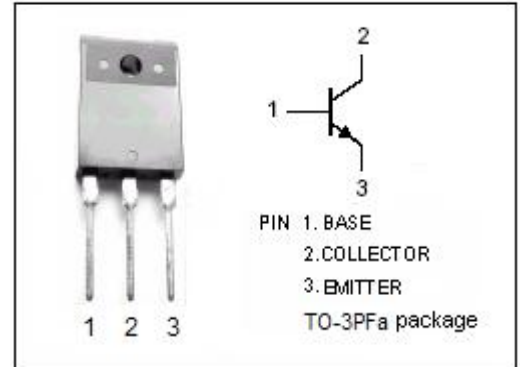
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 80V(\text{Min})$
- Good Linearity of h_{FE}
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.5V(\text{Max.}) @ I_C = 8A$
- Complement to Type 2SB1156
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for power switching applications

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

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	20	A
I_{CP}	Collector Current-Pulse	30	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	100	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 T_C=25°C 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 = 8A; I _B = 0.4A			0.5	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 20A; I _B = 2A			1.5	V
V _{BE(sat)-1}	Base -Emitter Saturation Voltage	I _C = 8A; I _B = 0.4A			1.5	V
V _{BE(sat)-2}	Base -Emitter Saturation Voltage	I _C = 20A; I _B = 2A			2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			50	μ A
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	90		260	
h _{FE-3}	DC Current Gain	I _C = 10A; 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 = 8A, I _{B1} = -I _{B2} = 0.8A		0.5		μ s
t _{stg}	Storage Time			2.0		μ s
t _f	Fall Time			0.2		μ s

◆ h_{FE-2}Classifications

Q	P
90-180	130-260

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