

isc Silicon NPN Power Transistor
2SD1047
DESCRIPTION

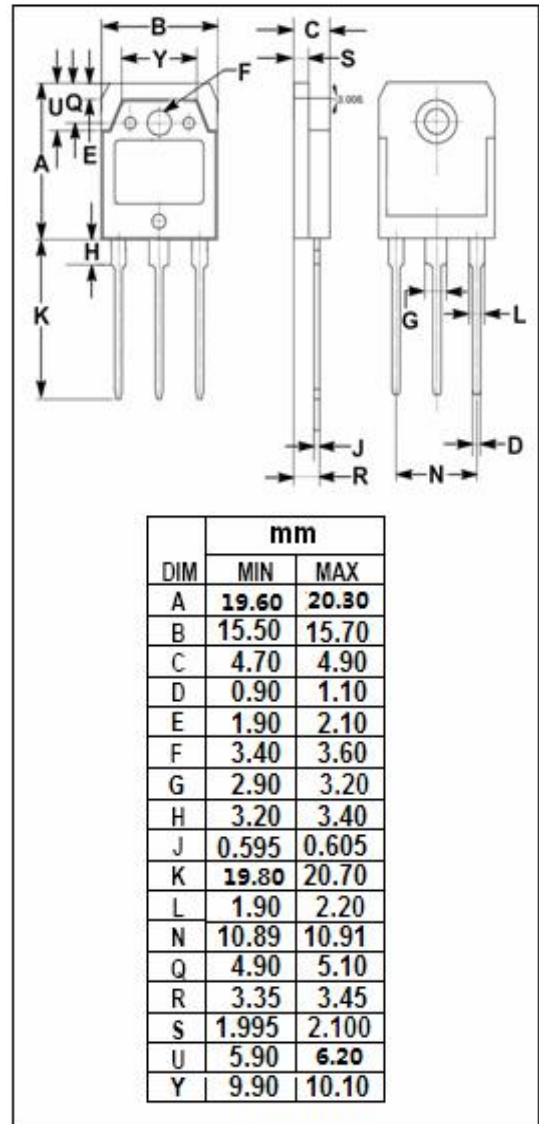
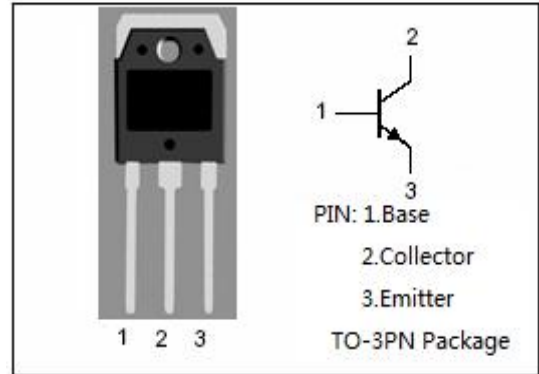
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 140V(\text{Min})$
- Good Linearity of h_{FE}
- High Current Capability
- Wide Area of Safe Operation
- Complement to Type 2SB817
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Recommend for 60W audio frequency amplifier output stage applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	160	V
V_{CEO}	Collector-Emitter Voltage	140	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	12	A
I_{CP}	Collector Current-Pulse	15	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	100	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-40~150	$^\circ\text{C}$



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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 = 30mA ; R _{BE} = ∞	140			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C =1mA; I _E = 0	160			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 5mA; I _C = 0	6			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 5.0A; I _B = 0.5A		0.6	2.5	V
V _{BE(on)}	Base -Emitter On Voltage	I _C = 1A ; V _{CE} = 5V			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 80V ; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 4V; I _C = 0			100	μ A
h _{FE-1}	DC Current Gain	I _C = 1A ; V _{CE} = 5V	60		200	
h _{FE-2}	DC Current Gain	I _C = 6A ; V _{CE} = 5V	20			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 1.0MHz		210		pF
f _T	Current-Gain—Bandwidth Product	I _C = 1A ; V _{CE} = 5V		15		MHz

Switching times

t _{on}	Turn-on Time	I _C = 1A ,R _L = 20 Ω , I _{B1} = I _{B2} = 0.1A, V _{CC} = 20V		0.26		μ s
t _{stg}	Storage Time			6.88		μ s
t _f	Fall Time			0.68		μ s

◆ h_{FE-1} Classifications

D	E
60-120	100-200

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