

isc Silicon NPN Power Transistor

2SD1049

DESCRIPTION

- High Current Capability
- Fast Switching Speed
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

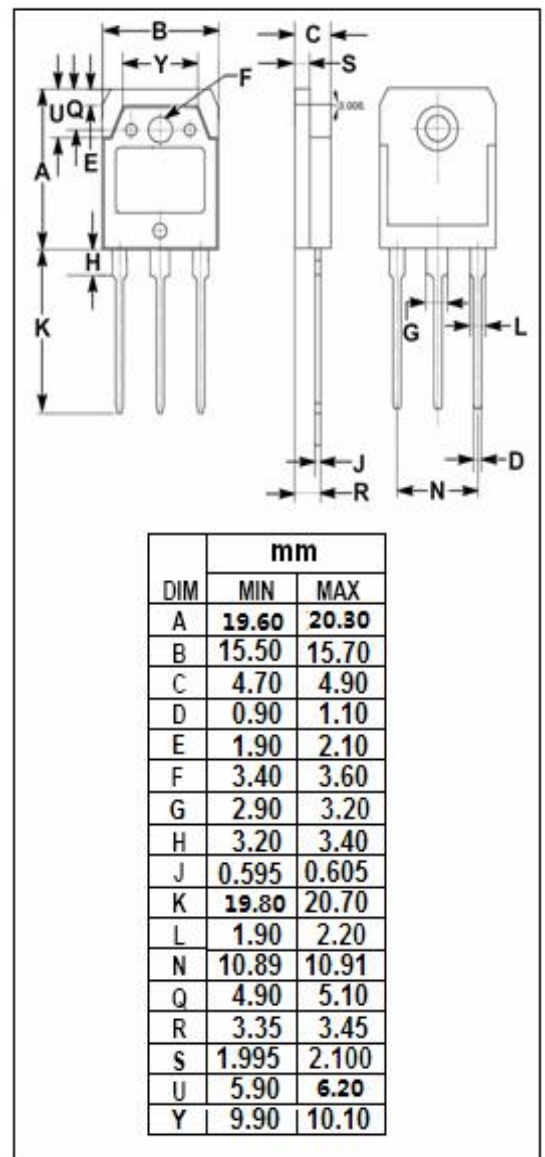
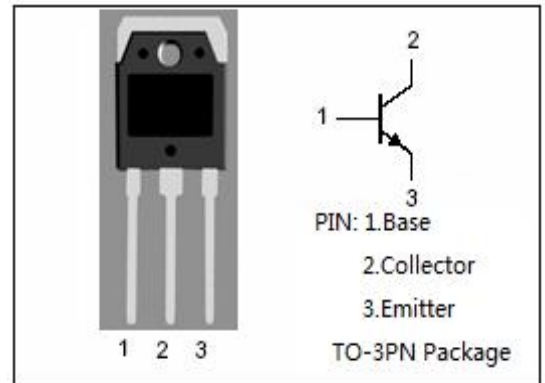
- Switching regulators
- Motor controls
- High frequency inverters
- General purpose power amplifiers

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	25	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	80	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.55	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**2SD1049****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 _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 0.1mA; I _E = 0	120			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 0.1mA; I _C = 0	7			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 25A; I _B = 2.5A			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 25A; I _B = 2.5A			2.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 120V; I _E = 0			0.1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			0.1	mA
h _{FE}	DC Current Gain	I _C = 25A; V _{CE} = 5V	20			

Switching times Resistive Load

t _{on}	Turn-on Time	I _C = 25A; I _{B1} = I _{B2} = 2.5A; R _L = 3 Ω, P _W = 20 μs; Duty ≤ 2%			1.0	μs
t _s	Storage Time				2.5	μs
t _f	Fall Time				0.4	μs

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