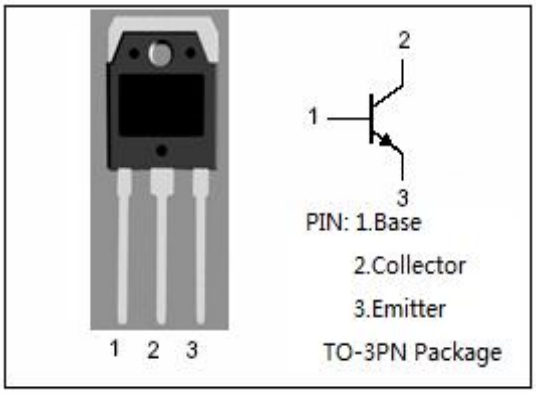
isc Silicon NPN Power Transistor — 2SD1049

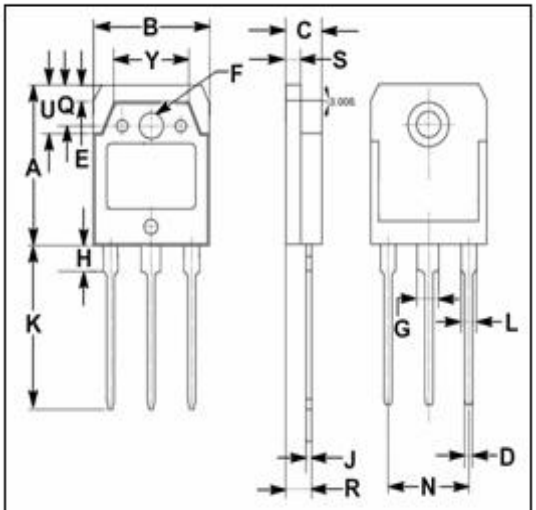


DESCRIPTION

- 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



DIM	mm MIN	mm MAX
A	19.60	20.30
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
Y	9.90	10.10

Absolute maximum ratings(Ta=25℃)

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℃	80	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

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

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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
$V_{(BR)CBO}$	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= 3Ω, P_W= 20μs; Duty≤ 2%			1.0	μs
t_s	Storage Time				2.5	μs
t_f	Fall Time				0.4	μs