

SPTECH Silicon NPN Power Transistor

2SD1049

DESCRIPTION

- High Current Capability
- Fast Switching Speed
- High Reliability

APPLICATIONS

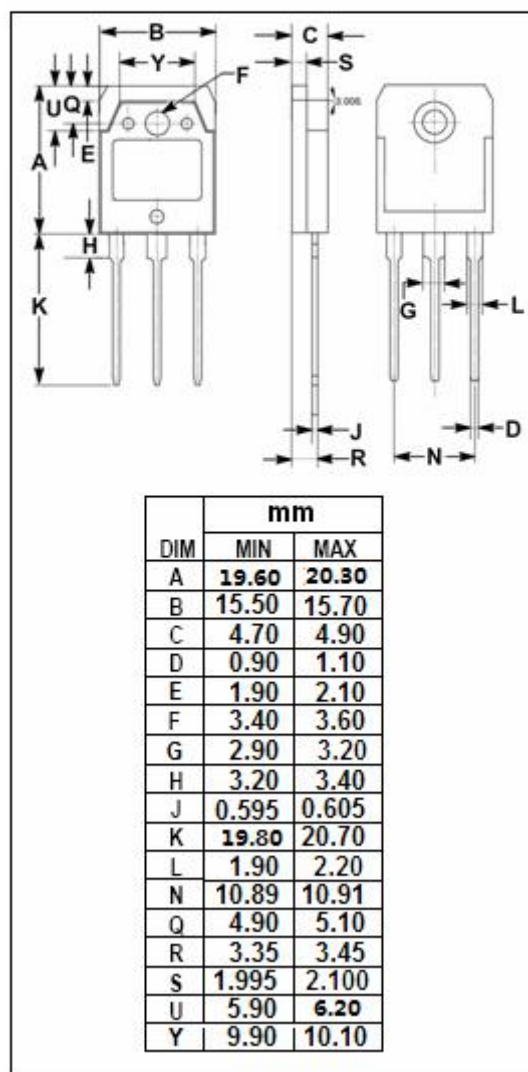
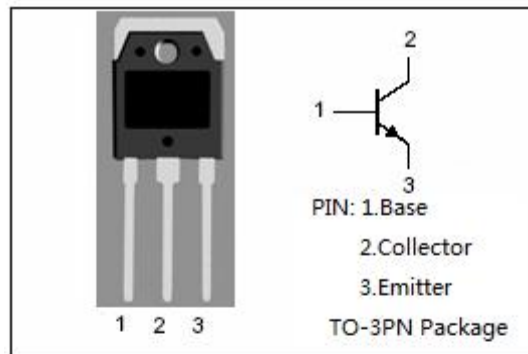
- Switching regulators
- Motor controls
- High frequency inverters
- General purpose power amplifiers

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 @ $T_{\text{C}}=25^{\circ}\text{C}$	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
$R_{\text{th j-c}}$	Thermal Resistance, Junction to Case	1.55	$^{\circ}\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}; I_B=0$	80			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=0.1\text{mA}; I_E=0$	120			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=0.1\text{mA}; I_C=0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=2.5\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=2.5\text{A}$			2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=120\text{V}; I_E=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			0.1	mA
h_{FE}	DC Current Gain	$I_C=25\text{A}; V_{CE}=5\text{V}$	20			

Switching times Resistive Load

t_{on}	Turn-on Time	$I_C=25\text{A}; I_{B1}=I_{B2}=2.5\text{A};$ $R_L=3\Omega, P_W=20\mu\text{s};$ $\text{Duty} \leq 2\%$			1.0	μs
t_s	Storage Time				2.5	μs
t_f	Fall Time				0.4	μs