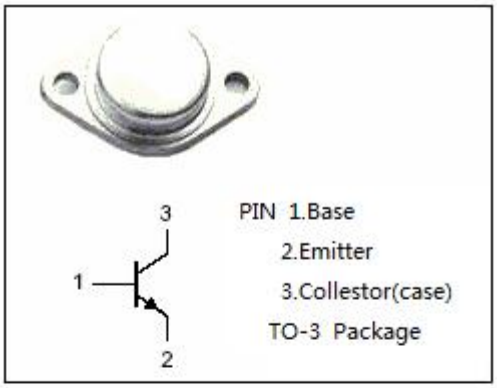
isc Silicon NPN Power Transistor — BUY51A

DESCRIPTION

- Low Collector Saturation Voltage
- High Switching Speed
- High Current Current Capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

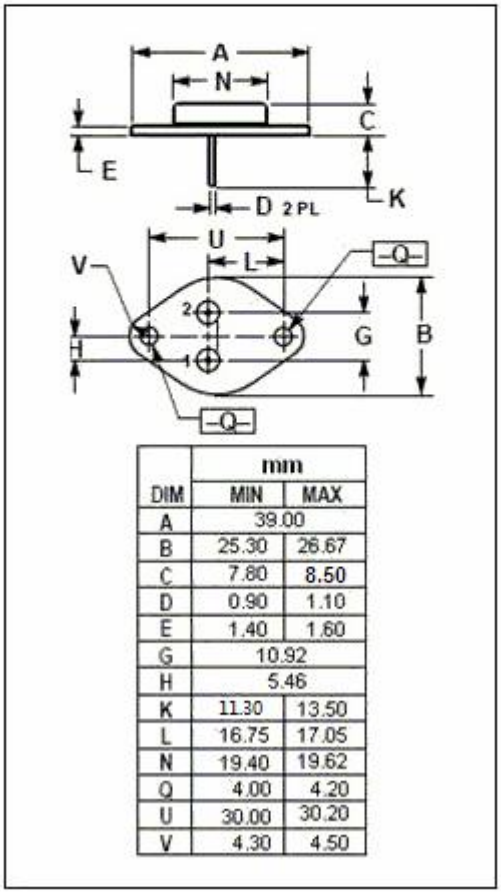


APPLICATIONS

- Switching regulators
- Motor control
- High frequency and efficiency converters

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	30	A
I_{CM}	Collector Current-Peak	45	A
I_B	Base Current-Continuous	8	A
P_T	Total Power Dissipation @ T_C≤25℃	150	W
T_J	Junction Temperature	200	℃
T_{stg}	Storage Temperature Range	-65~200	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.17	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA ;I_B= 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E=1mA; I_C= 0	7			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 20A; I_B= 2A			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 30A; I_B= 3A			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 30A; I_B= 3A			2.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}=60V; I_E=0			0.1	mA
I_{EBO}	Emitter Cutoff current	V_{EB}=6V; I_C=0			0.1	mA
h_{FE-1}	DC Current Gain	I_C= 1A ; V_{CE}= 4V	60		200	
h_{FE-2}	DC Current Gain	I_C= 15A ; V_{CE}= 4V	20		150	
f_T	Current-Gain—Bandwidth Product	I_C= 1A;V_{CE}= 5V;f_{test} = 1MHz	10			MHz