

**isc Silicon NPN Power Transistor**

**BUP51**

**DESCRIPTION**

- With TO-3 packaging
- Large collector current
- Low collector saturation voltage
- High power dissipation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

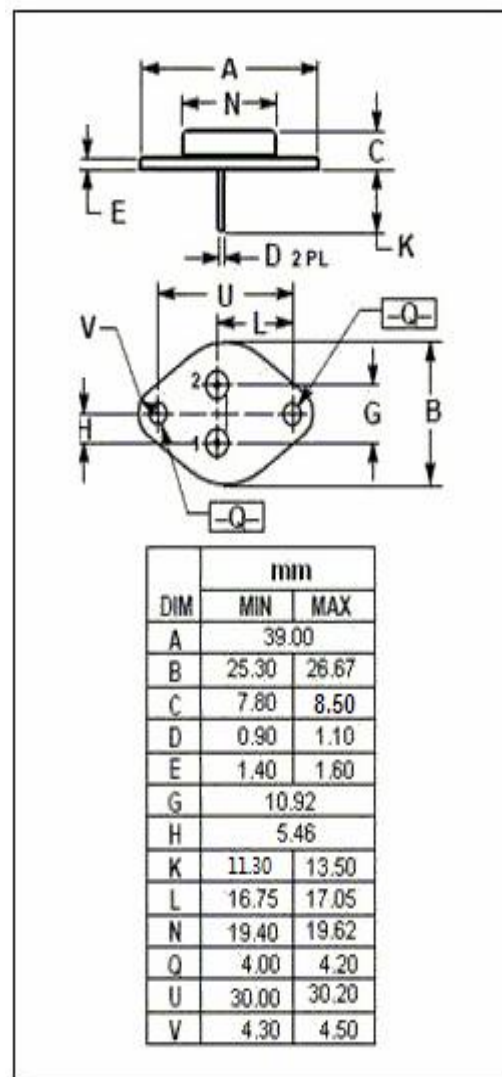
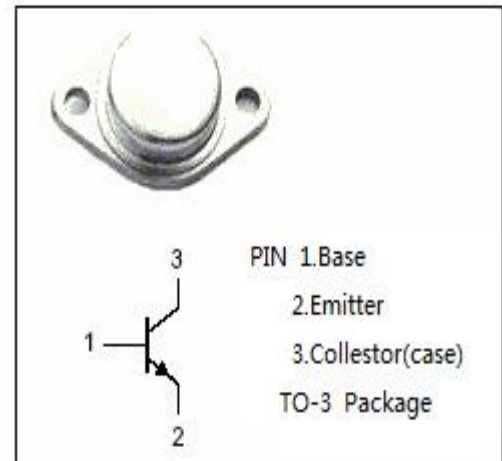
- Designed for use in DC-DC converter
- Driver of solenoid or motor
- For audio amplifier applications

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CB0</sub>	Collector-Base Voltage	250	V
V <sub>CEO</sub>	Collector-Emitter Voltage	175	V
V <sub>EBO</sub>	Emitter-Base Voltage	10	V
I <sub>c</sub>	Collector Current-Continuous	80	A
I <sub>CM</sub>	Peak Collector Current	100	A
P <sub>C</sub>	Collector Power Dissipation	300	W
T <sub>J</sub>	Junction Temperature	-55~200	°C
T <sub>stg</sub>	Storage Temperature	-55~200	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.72	°C/W



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**ELECTRICAL CHARACTERISTICS**

 T<sub>C</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	175		V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	250		V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA; I <sub>C</sub> = 0	10		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 20A; I <sub>B</sub> = 2A		0.5	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 40A; I <sub>B</sub> = 4A		0.6	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 20A; I <sub>B</sub> = 2A		1.1	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 40A; I <sub>B</sub> = 4A		1.2	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 175V; I <sub>B</sub> =0		0.1	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 250V; I <sub>E</sub> =0		0.1	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 20A; V <sub>CE</sub> = 4V	20		
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 40A; V <sub>CE</sub> = 4V	20		
h <sub>FE-3</sub>	DC Current Gain	I <sub>C</sub> = 70A; V <sub>CE</sub> = 4V	10		

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