

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

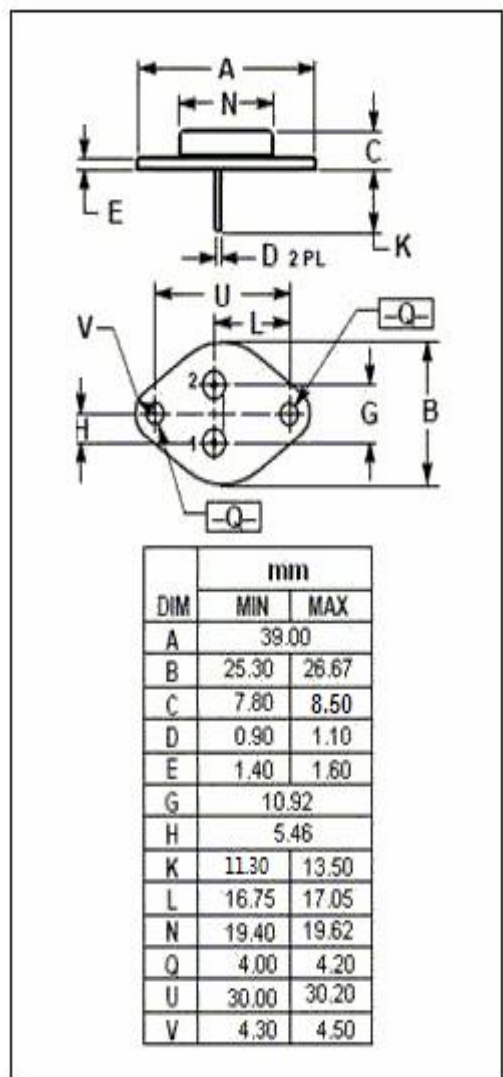
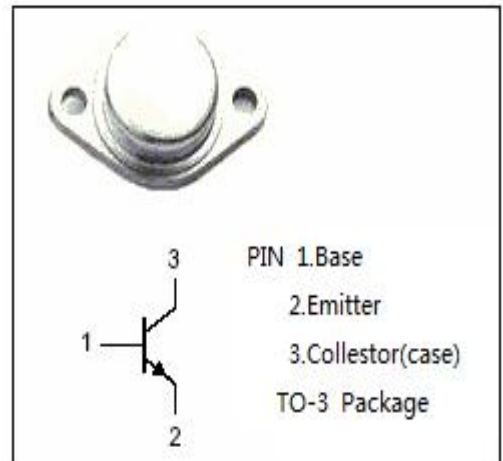
- Designed for use in DC-DC converter
- Driver of solenoid or motor
- For audio amplifier applications

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	250	V
V_{CEO}	Collector-Emitter Voltage	175	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current-Continuous	80	A
I_{CM}	Peak Collector Current	100	A
P_C	Collector Power Dissipation	300	W
T_J	Junction Temperature	-55~200	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~200	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.72	$^{\circ}\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}; I_B=0$	175		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	250		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	10		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=2\text{A}$		0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=40\text{A}; I_B=4\text{A}$		0.6	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=2\text{A}$		1.1	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=40\text{A}; I_B=4\text{A}$		1.2	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=175\text{V}; I_B=0$		0.1	mA
I_{CBO}	Collector Cutoff Current	$V_{CB}=250\text{V}; I_E=0$		0.1	mA
h_{FE-1}	DC Current Gain	$I_C=20\text{A}; V_{CE}=4\text{V}$	20		
h_{FE-2}	DC Current Gain	$I_C=40\text{A}; V_{CE}=4\text{V}$	20		
h_{FE-3}	DC Current Gain	$I_C=70\text{A}; V_{CE}=4\text{V}$	10		

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