

# isc Silicon NPN Power Transistor

## BUY94

### DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 300V(\text{Min})$
- High Switching Speed
- Excellent Safe Operating Area
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

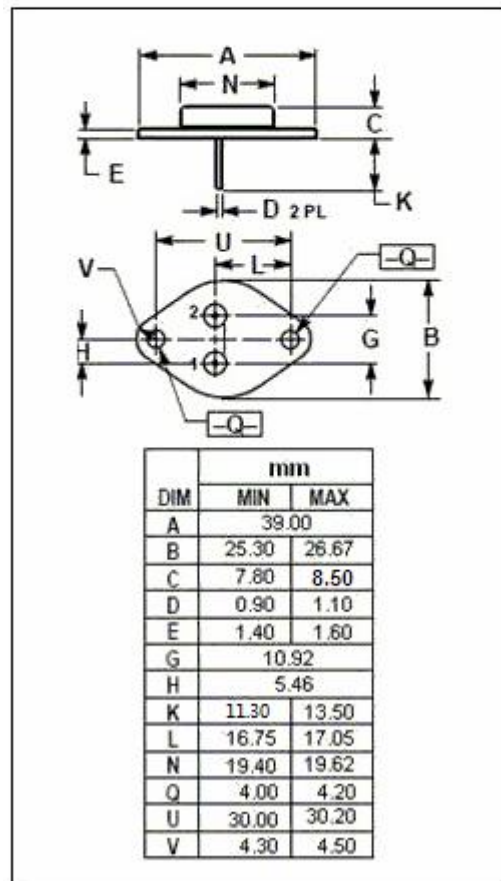
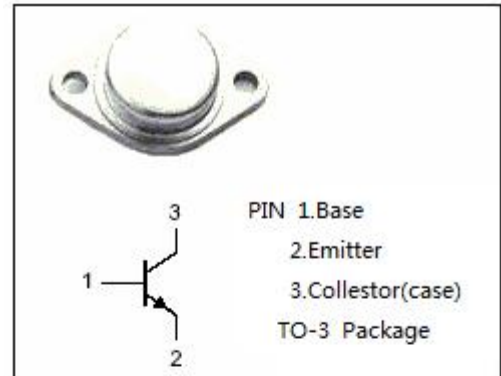
- Designed for use in converters, inverters, switching regulators, motor control systems etc.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	750	V
$V_{CEO}$	Collector-Emitter Voltage	300	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	15	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current-Continuous	5.0	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	100	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.0	$^\circ\text{C/W}$



**isc Silicon NPN Power Transistor****BUY94****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA ; I <sub>B</sub> = 0	300			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> =1mA; I <sub>C</sub> = 0	7			V
V <sub>CE(sat)</sub> -1	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 8A; I <sub>B</sub> = 1.6A			1.5	V
V <sub>CE(sat)</sub> -2	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 12A; I <sub>B</sub> = 2.4A			5.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 8A; I <sub>B</sub> = 1.6A			1.6	V
I <sub>CBO</sub>	Collector-Base Cutoff Current	V <sub>CB</sub> = V <sub>CBO</sub> ; I <sub>E</sub> = 0 V <sub>CB</sub> = V <sub>CBO</sub> ; I <sub>E</sub> = 0; T <sub>J</sub> = 150°C			0.5 2	mA
I <sub>EBO</sub>	Emitter Cutoff current	V <sub>EB</sub> =6V; I <sub>C</sub> =0			0.1	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 8A; V <sub>CE</sub> = 5V	8			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.5A ; V <sub>CE</sub> = 10V; f <sub>test</sub> = 1MHz		8		MHz

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