

## isc Silicon NPN Power Transistors

## D44C8

## DESCRIPTION

- Low Saturation Voltage
- Good Linearity of  $h_{FE}$
- Fast Switching Speeds
- Complement to Type D45C8
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

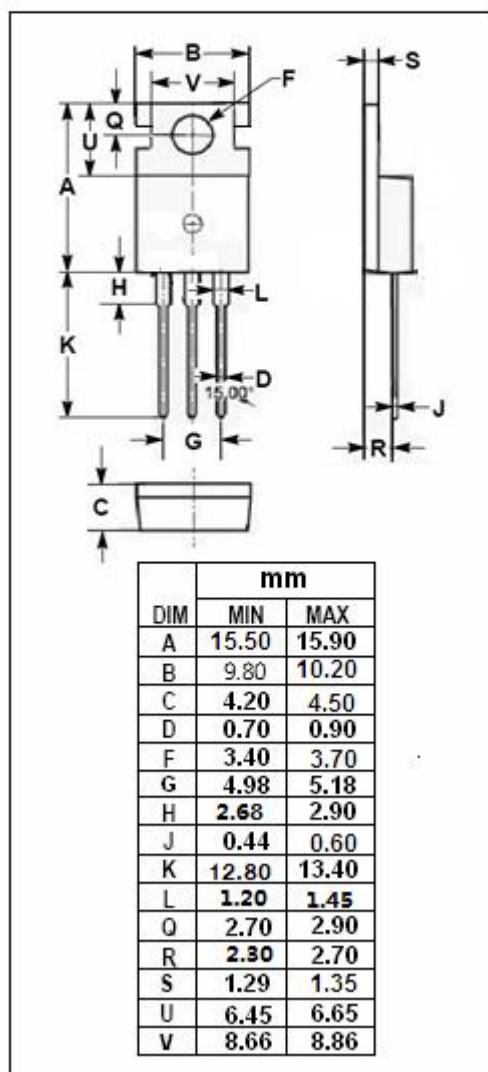
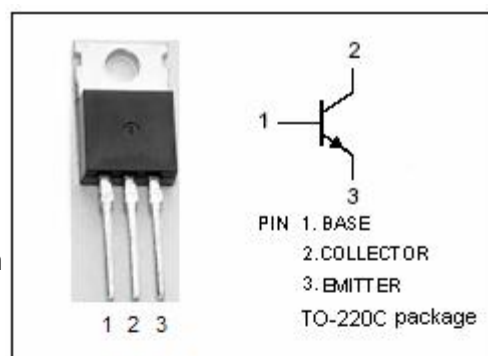
- Designed for various specific and general purpose application such as: output and driver stages of amplifiers operating at frequencies from DC to greater than 1.0MHz series, shunt and switching regulators; low and high frequency inverters/converters and many others.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CES}$	Collector-Emitter Voltage	70	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	4	A
$I_{CM}$	Collector Current-Peak	6	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$	30	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
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.2	$^{\circ}\text{C/W}$



**ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1A; I <sub>B</sub> = 100mA			0.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 1A; I <sub>B</sub> = 100mA			1.3	V
I <sub>CES</sub>	Collector Cutoff Current	V <sub>CE</sub> = 70V, V <sub>BE</sub> = 0			10	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			100	μ A
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.2A; V <sub>CE</sub> = 1V	100		220	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 1V	20			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 20mA; V <sub>CE</sub> = 4V; f <sub>test</sub> = 1MHz		50		MHz

**Switching Times**

t <sub>r</sub>	Rise Time	I <sub>C</sub> = 1A; I <sub>B1</sub> = -I <sub>B2</sub> = 0.1A; V <sub>CC</sub> = 20V			0.3	μ s
t <sub>s</sub>	Storage Time				0.7	μ s
t <sub>f</sub>	Fall Time				0.4	μ s

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