

**isc Silicon NPN Power Transistor**
**2SC3320**
**DESCRIPTION**

- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

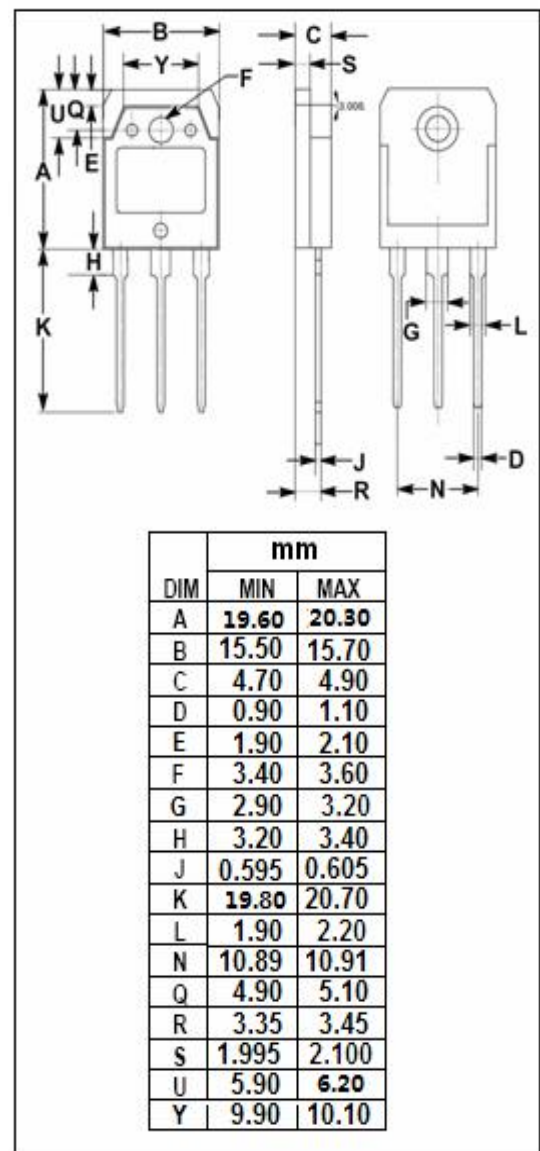
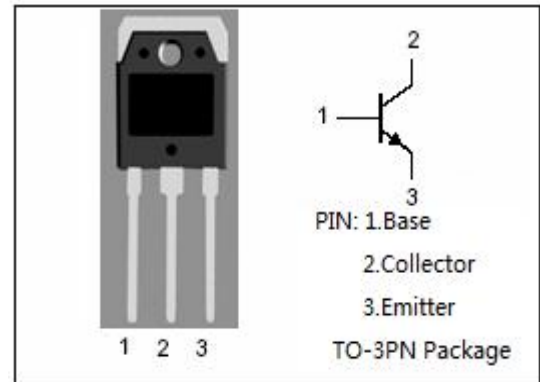
- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	15	A
$I_B$	Base Current-Continuous	5	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	80	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	1.56	$^\circ\text{C/W}$



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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10mA ; I <sub>B</sub> = 0	400			V
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA ; I <sub>B</sub> = 0	400			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA ; I <sub>E</sub> = 0	500			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>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 6A ; I <sub>B</sub> = 1.2A			1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 6A ; I <sub>B</sub> = 1.2A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 500V ; I <sub>E</sub> = 0			1.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 7V ; I <sub>C</sub> = 0			1.0	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 6A ; V <sub>CE</sub> = 5V	10			

**Switching times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 7.5A , I <sub>B1</sub> = 1.5A; I <sub>B2</sub> = -3A R <sub>L</sub> = 20 Ω ; P <sub>W</sub> =20 μ s Duty ≤2%			0.5	μ s
t <sub>stg</sub>	Storage Time				1.5	μ s
t <sub>f</sub>	Fall Time				0.15	μ s

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