

**isc Silicon NPN Power Transistor**
**2SC3306**
**DESCRIPTION**

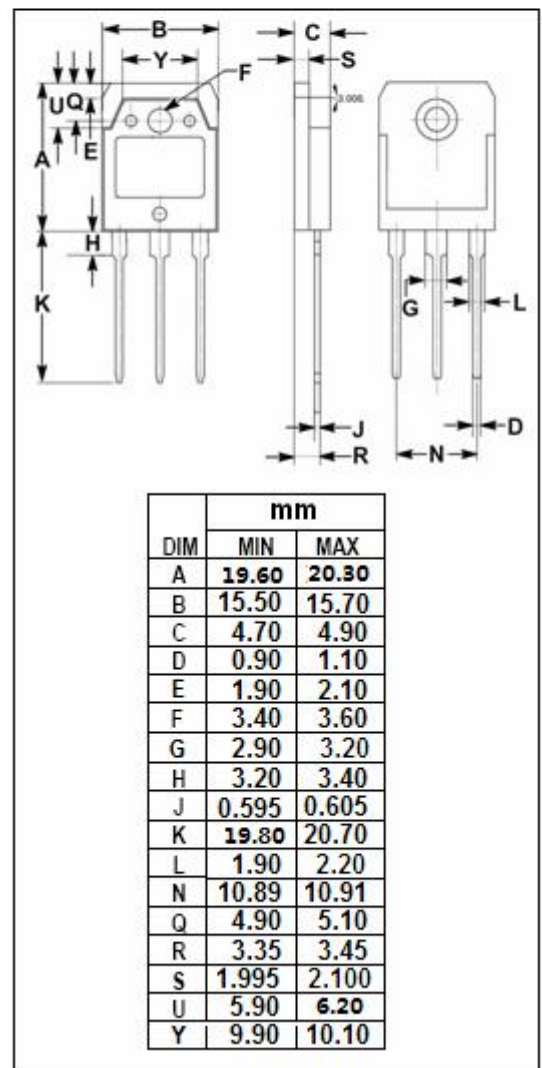
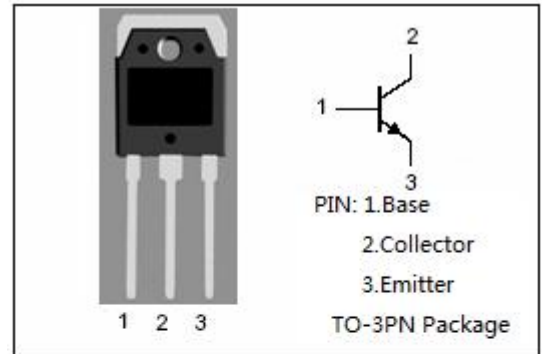
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- High Reliability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Switching regulator and high voltage switching applications.
- High speed DC-DC converter applications.

**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
$V_{EBO}$	Emitter-Base voltage	7	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Pulse	15	A
$I_B$	Base Current-Continuous	5	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	-55~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

## 2SC3306

## 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>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>c</sub> = 1mA ; I <sub>E</sub> = 0	500			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>c</sub> = 5A; I <sub>B</sub> = 0.5A			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>c</sub> = 5A; I <sub>B</sub> = 0.5A			2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 400V ; I <sub>E</sub> =0			0.1	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> = 5A ; V <sub>CE</sub> = 5V	10			

## Switching times

t <sub>on</sub>	Turn-on Time	V <sub>CC</sub> ≈ 200V , I <sub>B1</sub> = -I <sub>B2</sub> = 0.5A R <sub>L</sub> = 40 Ω ; P <sub>W</sub> =20 μ s Duty Cycle ≤ 1%			1.0	μ s
t <sub>stg</sub>	Storage Time				2.5	μ s
t <sub>f</sub>	Fall Time				1.0	μ s

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