

# New Jersey Semi-Conductor Products, Inc.

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## Silicon NPN Power Transistor

## 2SC3306

### DESCRIPTION

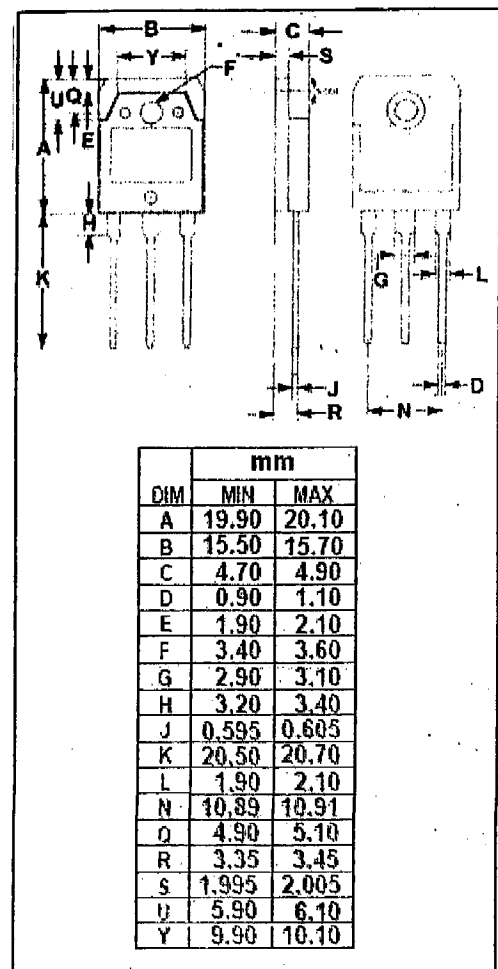
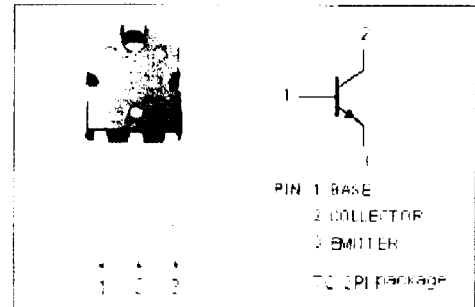
- High Collector-Emitter Breakdown Voltage-  
•  $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- High Reliability

### 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
$V_{CB0}$	Collector-Base Voltage	500	V
$V_{CE0}$	Collector-Emitter Voltage	400	V
$V_{EB0}$	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 @ $T_a = -25^\circ\text{C}$	100	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ , $I_B = 0$	400			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 1\text{mA}$ , $I_E = 0$	500			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}$ , $I_B = 0.5\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 5\text{A}$ , $I_B = 0.5\text{A}$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CE} = 400\text{V}$ , $I_E = 0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 7\text{V}$ , $I_C = 0$			10	mA
$h_{FE}$	DC Current Gain	$I_C = 5\text{A}$ , $V_{CE} = 5\text{V}$	10			

## Switching times

$t_{on}$	Turn-on Time	$V_{CE} = 200\text{V}$ , $I_{B1} = -I_{E2} = 0.5\text{A}$ $R_s = 40\Omega$ , $P_W = 20\text{W}$ Duty Cycle = 1%			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				2.5	$\mu\text{s}$
$t_f$	Fall Time				1.0	$\mu\text{s}$