

Silicon NPN Power Transistor

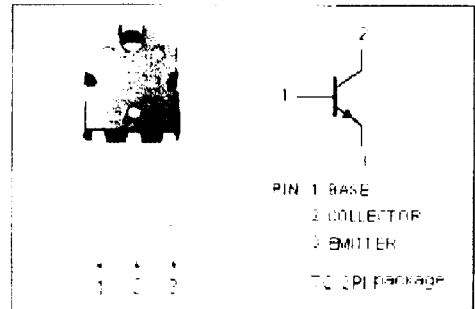
2SC3306

DESCRIPTION

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

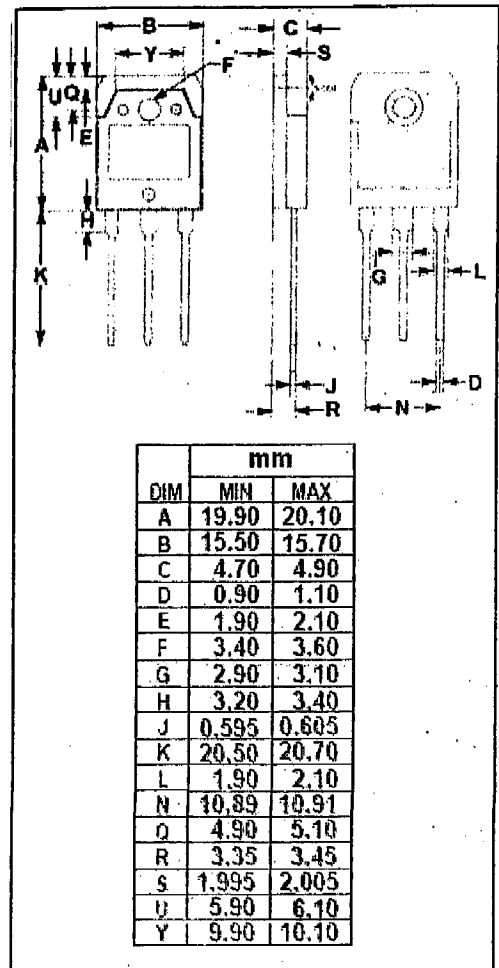
APPLICATIONS

- 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_{CP}	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	$^\circ\text{C}$



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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	$V_{CE} = 200\text{V}$, $I_{B1} = -I_{E2} = 0.5\text{A}$ $R_c = 40\Omega$, $P_W = 20\text{W}$ Duty Cycle = 1%		10	μs
t_{stg}	Storage Time			2.5	μs
t_f	Fall Time			10	μs