

# New Jersey Semi-Conductor Products, Inc.

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## Silicon NPN Power Transistor

## 2SC4706

### DESCRIPTION

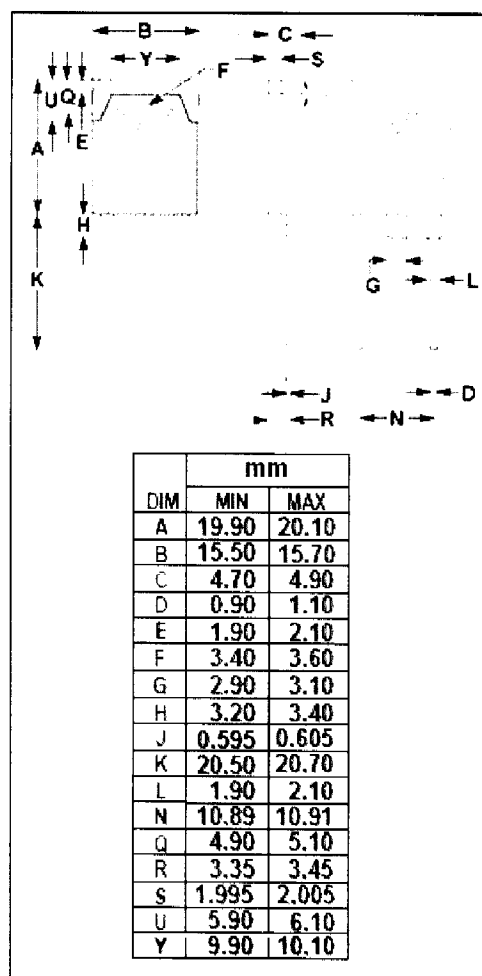
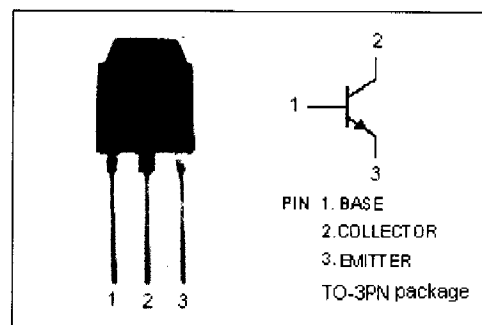
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 600V(\text{Min})$
- High Switching Speed
- High Reliability

### APPLICATIONS

- Designed for switching regulator and general purpose applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	900	V
$V_{CEO}$	Collector-Emitter Voltage	600	V
$V_{EBO}$	Emitter-Base voltage	7	V
$I_C$	Collector Current-Continuous	14	A
$I_{CM}$	Collector Current-Peak	28	A
$I_B$	Base Current-Continuous	7	A
$P_C$	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	130	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	$I_C=10\text{mA}; I_B=0$	600			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=1.4\text{A}$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=1.4\text{A}$			1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=800\text{V}; I_E=0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			0.1	mA
$h_{FE}$	DC Current Gain	$I_C=7\text{A}; V_{CE}=4\text{V}$	10		25	
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		160		pF
$f_T$	Current-Gain—Bandwidth Product	$I_E=-1.5\text{A}; V_{CE}=12\text{V}$		6		MHz

## Switching Times

$t_{on}$	Turn-on Time	$I_C=7\text{A}; I_{B1}=1.05\text{A}; I_{B2}=-3.5\text{A}$ $R_L=35.7\ \Omega; V_{CC}=250\text{V}$			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				5.0	$\mu\text{s}$
$t_f$	Fall Time				0.7	$\mu\text{s}$