

Silicon NPN Power Transistor

2N6931

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
 : $V_{CEO(SUS)} = 300(\text{Min.})$
- High Switching Speed

APPLICATIONS

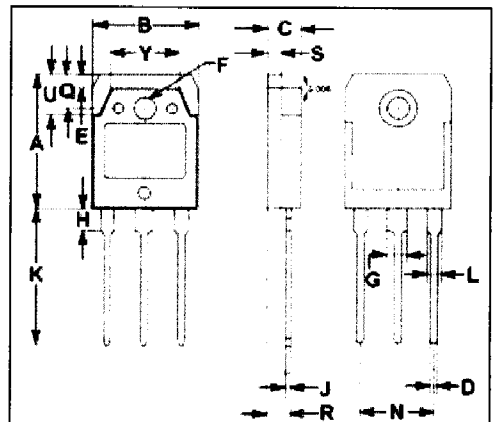
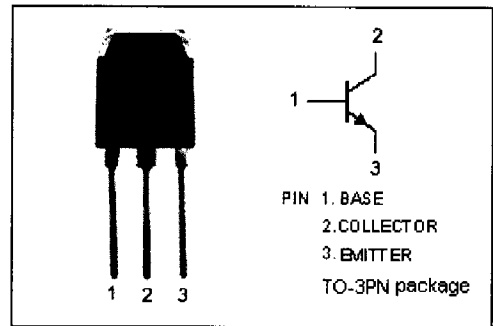
- Off-line power supplies
- High-voltage inverters
- Switching regulators

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

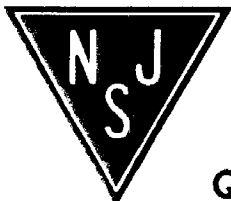
SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage ($V_{BE} = -1.5V$)	450	V
V_{CEX}	Collector-Emitter Voltage	350	V
V_{CEO}	Collector-Emitter Voltage	300	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	5	A
I_{BM}	Base Current-peak	7	A
I_E	Emitter Current-Continuous	15	A
I_{EM}	Emitter Current-peak	22	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	150	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-jc}	Thermal Resistance, Junction to Case	0.83	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0; L=25\text{mH}$	300		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\text{mA}; I_C=0$	8		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2\text{A}$ $I_C=10\text{A}; I_B=2\text{A}; T_C=100^\circ\text{C}$		1.0 2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2\text{A}$ $I_C=10\text{A}; I_B=2\text{A}; T_C=100^\circ\text{C}$		1.5 1.5	V
I_{CEV}	Collector Cutoff Current	$V_{CE}=450\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=450\text{V}; V_{BE}=-1.5\text{V}; T_C=125^\circ\text{C}$		0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=8\text{V}; I_C=0$		2.0	mA
h_{FE}	DC Current Gain	$I_C=10\text{A}; V_{CE}=3\text{V}$	8	35	
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$	80	300	pF

Switching times-Resistive Load

t_d	Delay Time	$I_C=10\text{A}; I_{B1}=-I_{B2}=2\text{A}; V_{CC}=300\text{V}$ $R_C=30\Omega; V_{BB}=-5\text{V}; t_p=30\mu\text{s}$		0.1	μs
t_r	Rise Time			0.7	μs
t_s	Storage Time			2.5	μs
t_f	Fall Time			0.5	μs