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Silicon NPN Power Transistor

MJW16010A

DESCRIPTION

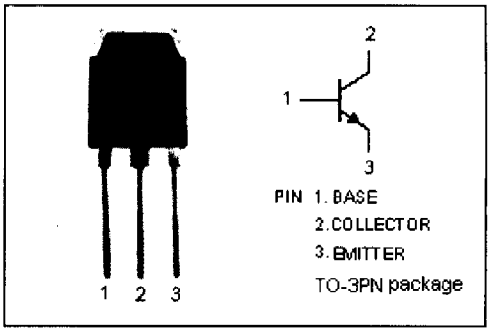
- Low Collector Saturation Voltage
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 500V(Min)
- Wide Area of Safe Operation

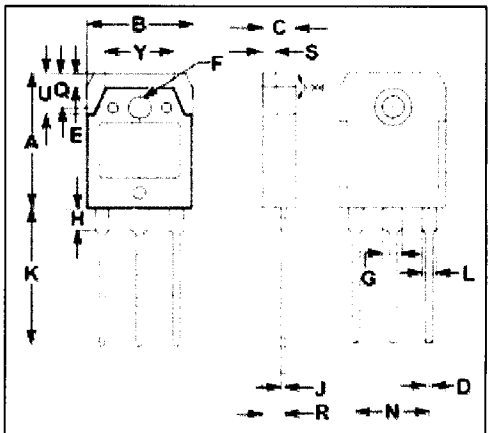
APPLICATIONS

- Designed for high-voltage, high-speed,power switching in inductive circuits where fall time is critical. They are particularly suited for line-operated switchmode applications.

Typical applications:

- Switching regulators
- Inverters
- Solenoids
- Relay drivers
- Motor controls
- Deflection circuits





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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-EmitterVoltage	1000	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current	10	A
I_{BM}	Base Current-Peak	15	A
P_C	Collector Power Dissipation @ T_C=25℃	135	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	0.92	℃/W

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 100mA ;I_B=0	500			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 1A			0.7	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 2A I_C= 10A; I_B= 2A; T_C=100℃			1.0 1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 10A; I_B= 2A I_C= 10A; I_B= 2A; T_C=100℃			1.5	V
I_{CEV}	Collector Cutoff Current	V_{CEV}=1000V;$V_{BE(off)}$=1.5V V_{CEV}=1000V;$V_{BE(off)}$=1.5V;T_C=100℃			0.15 1.0	mA
I_{CER}	Collector Cutoff Current	V_{CE}= 1000V;R_{BE}= 50Ω;T_C=100℃			1.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 6V; I_C=0			0.15	mA
h_{FE}	DC Current Gain	I_C= 15A ; V_{CE}= 5V	5	8		
C_{OB}	Output Capacitance	I_E= 0;V_{CB}= 10V, f_{test}= 1.0kHz			400	pF

Switching times;Resistive load(P_W= 30μs; Duty Cycle≤2%)

t_d	Delay Time	I_C= 10A; I_{B1}= 1.3A; I_{B2}= 2.6A; R_{B2}= 1.6Ω ; V_{CC}= 250V			0.1	μs
t_r	Rise Time				0.6	μs
t_{stg}	Storage Time				3.0	μs
t_f	Fall Time				0.4	μs