

Silicon NPN Power Transistor

2N6837

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
 : $V_{CEO(SUS)} = 450V(\text{Min})$
- High Switching Speed

APPLICATIONS

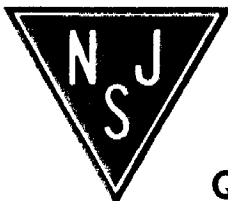
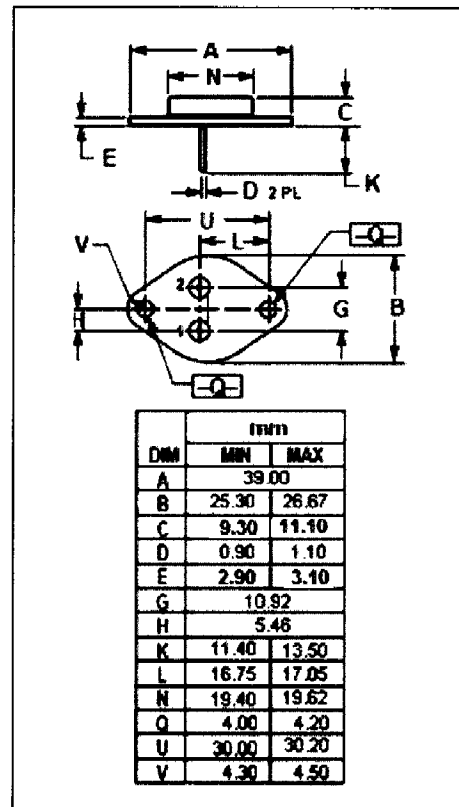
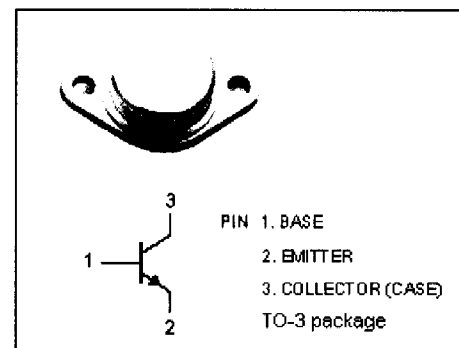
- Designed for high-voltage ,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications.
 Typical applications:
- Switching regulators
- Inverters
- Motor controls
- Deflection circuits

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	850	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current-Continuous	15	A
I_{BM}	Base Current-Peak	20	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	250	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.7	$^\circ\text{C/W}$



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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
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=100\text{mA}; I_B=0$	450			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 10A; I_B= 1.2A$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 15A; I_B= 2A$ $I_C= 15A; I_B= 2A, T_C=100^\circ\text{C}$			3.0 3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 15A; I_B= 2A$ $I_C= 15A; I_B= 2A, T_C=100^\circ\text{C}$			1.5 1.5	V
I_{CEV}	Collector Cutoff Current	$V_{CEV}=850V; V_{BE(off)}= 1.5V$ $V_{CEV}=850V; V_{BE(off)}= 1.5V; T_C=100^\circ\text{C}$			0.25 1.5	mA
I_{CER}	Collector Cutoff Current	$V_{CE}= 850V; R_{BE}= 50\ \Omega, T_C= 100^\circ\text{C}$			2.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 6.0V; I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C= 15A; V_{CE}= 5V$	7.5		30	
h_{FE-2}	DC Current Gain	$I_C= 20A; V_{CE}= 5V$	5			
f_T	Current Gain-Bandwidth Product	$I_C= 0.25A; V_{CE}= 10V; f_{test}=10\text{MHz}$	10		75	MHz
C_{OB}	Output Capacitance	$I_E= 0; V_{CB}= 10V; f_{test}=1.0\text{kHz}$	100		500	pF

Switching times; Resistive Load

t_d	Delay Time	$I_C= 15A, V_{CC}= 250V;$ $I_{B1}= 2A; I_{B2}= -4A;$ $P_W= 30\ \mu\text{s}; R_{B2}= 1.6\ \Omega$ Duty Cycle $\leq 2.0\%$		0.02	0.1	μs
t_r	Rise Time			0.2	0.5	μs
t_s	Storage Time			1.2	2.7	μs
t_f	Fall Time			0.2	0.35	μs