

Silicon NPN Power Transistor

BUY24

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
 : $V_{(BR)CEO} = 60V(\text{Min.})$
- Low Collector Saturation Voltage-
 : $V_{CE(sat)} = 1.0V @ I_C = 5A$

APPLICATIONS

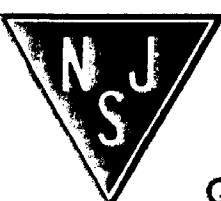
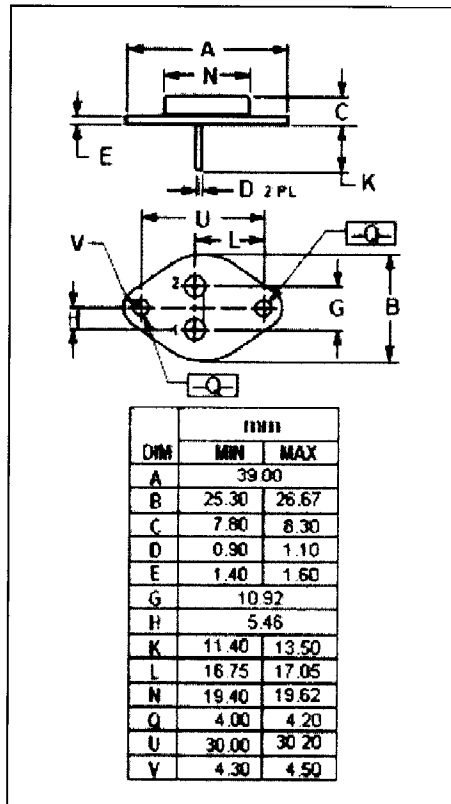
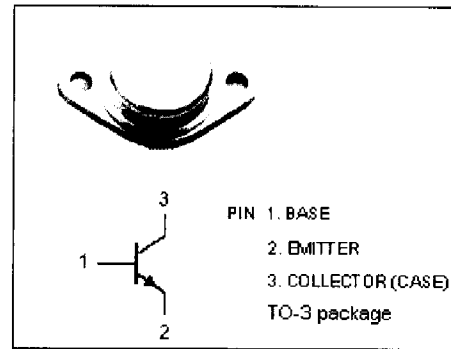
- Designed for use switching and general purpose applications.

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

SYMBOL	PARAMETER	MAX	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
P_C	Collector Power Dissipation @ $T_C < 75^\circ\text{C}$	15	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(j-c)}$	Thermal Resistance, Junction to Case	5.0	$^\circ\text{C/W}$



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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	$I_C=50\text{mA}; I_B=0$	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	120			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$			0.6	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$			1.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.3	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=60\text{V}; I_E=0$ $V_{CB}=60\text{V}; I_E=0; T_C=125^\circ\text{C}$			10 1.0	μA mA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=2\text{V}$	45			
h_{FE-2}	DC Current Gain	$I_C=2\text{A}; V_{CE}=2\text{V}$	40			
h_{FE-3}	DC Current Gain	$I_C=5\text{A}; V_{CE}=2\text{V}$		40		
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=5\text{V}$		100		MHz
C_{OB}	Collector Output Capacitance	$I_E=0; V_{CB}=10\text{V}$		35		pF

Switching Times

t_{on}	Turn-On Time	$I_C=5\text{A}; I_{B1}=0.5\text{A}$			0.35	μs
t_{off}	Turn-Off Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A}$			0.65	μs