

Silicon NPN Power Transistor

BUY55

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
 : $V_{(BR)CEO} = 125V(\text{Min.})$
- Low Collector Saturation Voltage-
 : $V_{CE(sat)} = 1.5V @ I_C = 7A$

APPLICATIONS

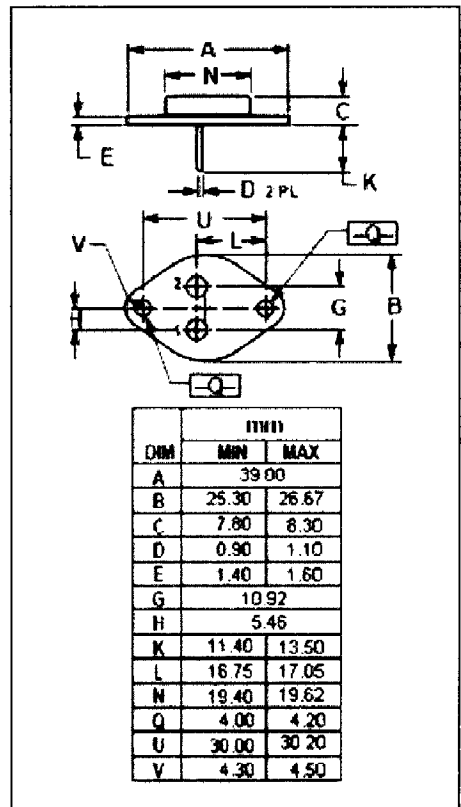
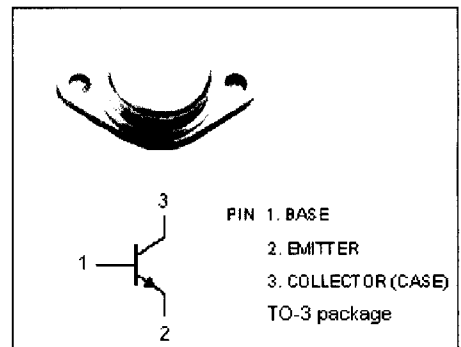
- Designed for general switching applications at higher outputs.

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

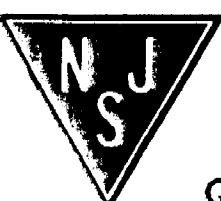
SYMBOL	PARAMETER	MAX	UNIT
V_{CBO}	Collector-Base Voltage	150	V
V_{CES}	Collector-Emitter Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	125	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation @ $T_c \leq 75^\circ C$	60	W
T_j	Junction Temperature	175	$^\circ C$
T_{stg}	Storage Temperature Range	-65~175	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{th-j-c}	Thermal Resistance, Junction to Case	1.66	$^\circ C/W$



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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	$I_C=20\text{mA}; I_B=0$	125			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	150			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=0.875\text{A}$			1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=7\text{A}; V_{CE}=1.5\text{V}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=150\text{V}; I_E=0$ $V_{CB}=150\text{V}; I_E=0; T_C=150^\circ\text{C}$			1.0 10	mA
I_{CES}	Collector Cutoff Current	$V_{CE}=150\text{V}; V_{BE}=0$ $V_{CE}=150\text{V}; V_{BE}=0; T_C=150^\circ\text{C}$			1.0 10	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C=2\text{A}; V_{CE}=1.5\text{V}$	25		160	
h_{FE-2}	DC Current Gain	$I_C=7\text{A}; V_{CE}=1.5\text{V}$	8			
f_T	Current-Gain—Bandwidth Product	$I_C=0.2\text{A}; V_{CE}=10\text{V}$		20		MHz
C_{OB}	Collector Output Capacitance	$I_E=0; V_{CB}=10\text{V}, f=1\text{MHz}$			200	pF

Switching Times

t_{on}	Turn-On Time	$I_C=6\text{A}; I_{B1}=-I_{B2}=1\text{A}$			2.0	μs
t_{off}	Turn-Off Time				2.0	μs
t_s	Storage Time				1.2	μs