

Silicon NPN Power Transistors

BUY78

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
 : $V_{(BR)CEO} = 300V(\text{Min.})$
- Low Collector-Emitter Saturation Voltage-
 : $V_{CE(sat)} = 1.4V(\text{Max.}) @ I_C = 5A$

APPLICATIONS

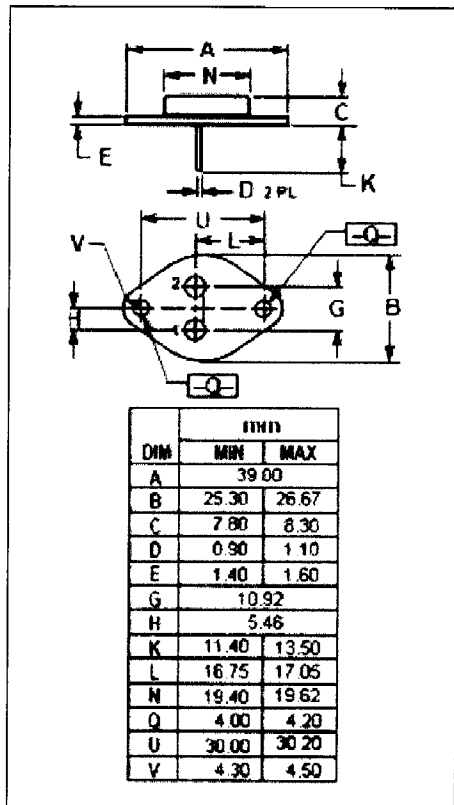
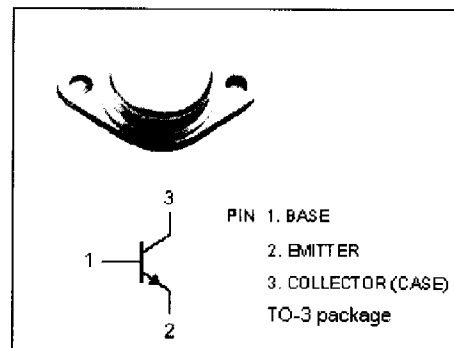
- Designed for use as high-speed power switches at high voltages.

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

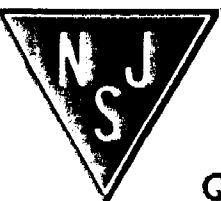
SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CES}	Collector-Emitter Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	300	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-peak	10	A
P_C	Collector Power Dissipation @ $T_c \leq 75^\circ\text{C}$	60	W
T_j	Junction Temperature	175	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~175	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



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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	$I_C=0.1\text{A}; I_B=0$	300			V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	600			V
$V_{(BR)CEV}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}; V_{BE}=-3.5\text{V}$	600			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1.25\text{A}$			1.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=1.25\text{A}$			1.7	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=400\text{V}; I_E=0$			1.0	mA
I_{CES}	Collector Cutoff Current	$V_{CE}=400\text{V}; V_{BE}=0; T_C=150^\circ\text{C}$			15	mA
h_{FE}	DC Current Gain	$I_C=5\text{A}; V_{CE}=1.5\text{V}$	5			
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$		15		MHz
t_f	Fall Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=0.6\text{A}$			1.0	μs