

Silicon NPN Power Transistor

BDY46

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
 : $V_{(BR)CEO} = 300V(\text{Min.})$
- DC Current Gain-
 : $h_{FE} = 20(\text{Min.}) @ I_C = 2A$
- Collector-Emitter Saturation Voltage-
 : $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 15A$
- High Switching Speed

APPLICATIONS

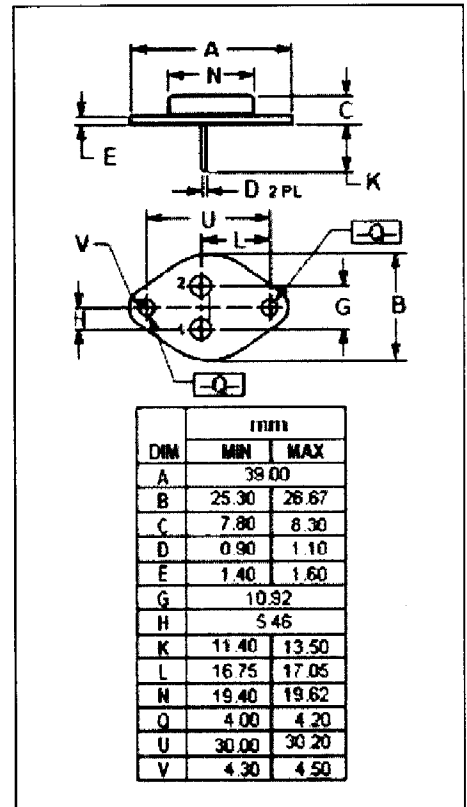
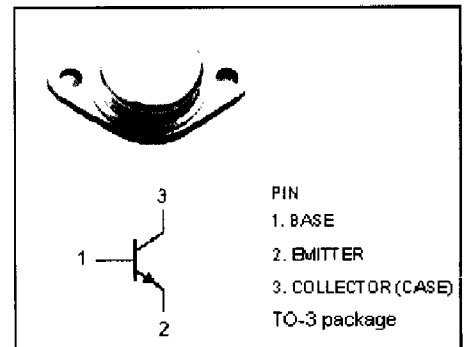
- Voltage regulator
- Inverter
- Switching mode power supply

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

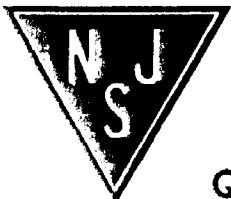
SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CES}	Collector-Emitter Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	300	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	17	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation @ $T_c \leq 45^\circ C$	95	W
T_J	Junction Temperature	175	$^\circ C$
T_{stg}	Storage Temperature	-65~175	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{th-jc}	Thermal Resistance, Junction to Case	1.37	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C= 200\text{mA}; I_B= 0$	300		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C= 1\text{mA}; I_E= 0$	600		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 2\text{mA}; I_C= 0$	7		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 15\text{A}; I_B= 5\text{A}$		1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C= 15\text{A}; I_B= 5\text{A}$		2.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}= 600\text{V}; I_E= 0$ $V_{CB}= 600\text{V}; I_E= 0, T_C=150^\circ\text{C}$		0.2 2.5	mA
h_{FE-1}	DC Current Gain	$I_C= 2\text{A}; V_{CE}= 2\text{V}$	20		
h_{FE-2}	DC Current Gain	$I_C= 10\text{A}; V_{CE}= 2\text{V}$	5		
f_T	Current Gain-Bandwidth Product	$I_C= 0.5\text{A}; V_{CE}= 10\text{V}$	10		MHz

Switching times

t_{on}	Turn-on Time	$I_C= 5\text{A}; I_{B1}= -I_{B2}= 1\text{A}$		0.5	μs
t_f	Fall Time			1.0	μs
t_{off}	Turn-off Time			3.5	μs