

Silicon NPN Power Transistor

BUX48A

DESCRIPTION

- High Voltage Capability
- High Current Capability
- Fast 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 switchmode applications such as:

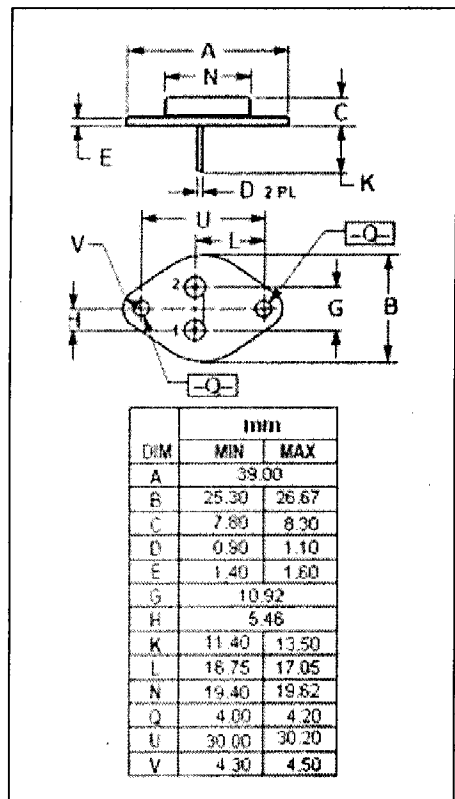
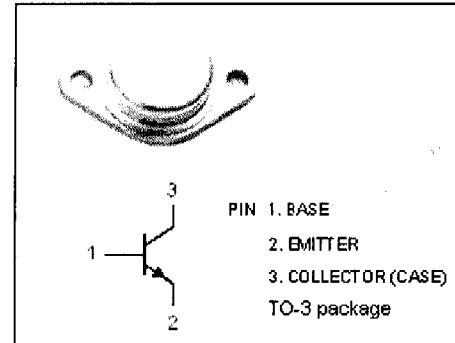
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CEX}	Collector-Emitter Voltage (V _{BE} = -1.5V)	1000	V
V _{CEO}	Collector-Emitter Voltage	450	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current-Continuous	15	A
I _{CM}	Collector Current-Peak	30	A
I _B	Base Current-Continuous	4	A
I _{BM}	Base Current-peak	20	A
P _C	Collector Power Dissipation @T _C =25°C	175	W
T _J	Junction Temperature	200	°C
T _{sig}	Storage Temperature Range	-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.0	°C/W



ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 0.2\text{A}; I_B = 0; L = 25\text{mH}$	450		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 50\text{mA}; I_C = 0$	7		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 8\text{A}; I_B = 1.6\text{A}$ $I_C = 8\text{A}; I_B = 1.6\text{A}; T_C = 100^{\circ}\text{C}$		1.5 2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 12\text{A}; I_B = 2.4\text{A}$		5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 8\text{A}; I_B = 1.6\text{A}$ $I_C = 8\text{A}; I_B = 1.6\text{A}; T_C = 100^{\circ}\text{C}$		1.6 1.6	V
I_{CER}	Collector Cutoff Current	$V_{CE} = \text{rated } V_{CER}; R_{BE} = 10\ \Omega$ $V_{CE} = \text{rated } V_{CER}; R_{BE} = 10\ \Omega; T_C = 125^{\circ}\text{C}$		0.5 4	mA
I_{CEX}	Collector Cutoff Current	$V_{CE} = \text{rated } V_{CES}; V_{BE(off)} = 1.5\text{V}$ $V_{CE} = \text{rated } V_{CES}; V_{BE(off)} = 1.5\text{V}; T_C = 125^{\circ}\text{C}$		0.2 2	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}; I_C = 0$		0.1	mA
h_{FE}	DC Current Gain	$I_C = 8\text{A}; V_{CE} = 5\text{V}$	8		
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f_{\text{test}} = 1\text{MHz}$		350	pF

Switching times Resistive Load

t_{on}	Turn-on Time	$I_C = 8\text{A}; I_{B1} = -I_{B2} = 1.6\text{A}; V_{CC} = 300\text{V};$ $V_{BE(off)} = 5\text{V}, \text{Duty Cycle} \leq 2\%$		0.9	μs
t_s	Storage Time			2.0	μs
t_f	Fall Time			0.4	μs