

isc Silicon NPN Power Transistor

BUX45

DESCRIPTION

- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.0V(\text{Max.}) @ I_C = 1A$
- High Switching Speed

APPLICATIONS

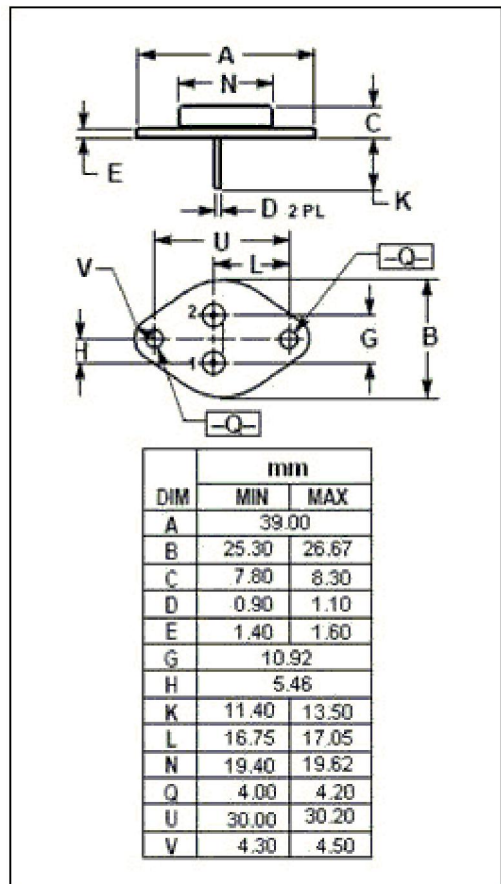
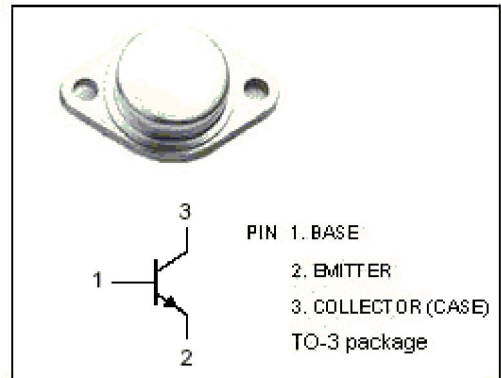
- Designed for high speed, high voltage, high power applications.

Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEX}	Collector-Emitter Voltage $V_{BE} = -1.5V$	500	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 100 \Omega$	500	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	7	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ C$	120	W
T_j	Junction Temperature	200	°C
T_{stg}	Storage Temperature Range	-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.46	°C/W



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0; L=25\text{mH}$	500			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	$I_C=1\text{A}; I_B=0.125\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.4\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.4\text{A}$			2.0	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=400\text{V}; I_B=0$			1.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=500\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=500\text{V}; V_{BE}=-1.5\text{V}; T_C=125^{\circ}\text{C}$			1.0 5.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C=1\text{A}; V_{CE}=4\text{V}$	15		45	
h_{FE-2}	DC Current Gain	$I_C=2\text{A}; V_{CE}=4\text{V}$	8			
f_T	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=15\text{V}$	8			MHz

Switching Times

t_{on}	Turn-on Time	$I_C=2\text{A}; I_{B1}=-I_{B2}=0.4\text{A}; V_{CC}=100\text{V}$			1.0	μs
t_s	Storage Time				5.0	μs
t_f	Fall Time				1.2	μs