

isc Silicon NPN Power Transistors

BUX82/83

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO}$ = 400V(Min)-BUX82
= 450V(Min)-BUX83
- High Switching Speed

APPLICATIONS

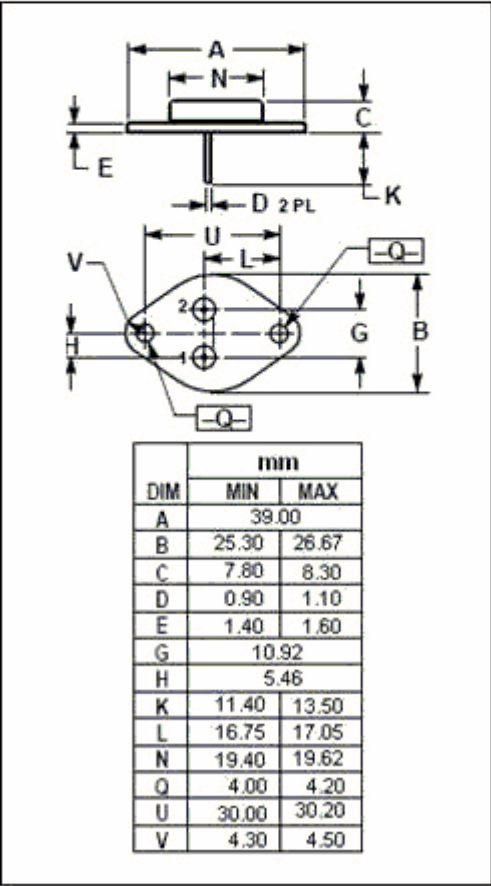
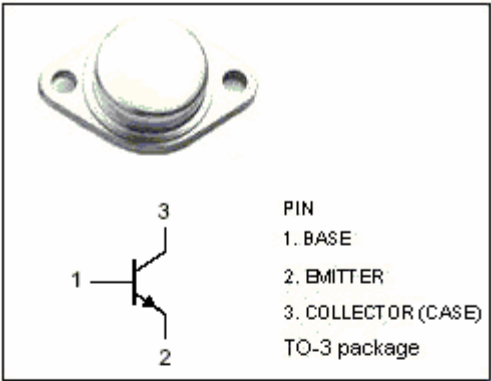
- Designed for use as high-speed power switch at high voltage.

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

SYMBOL	PARAMETER		VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	BUX82	800	V
		BUX83	1000	
V_{CEO}	Collector-Emitter Voltage	BUX82	400	V
		BUX83	450	
V_{CER}	Collector-Emitter Voltage $R_{BE}=50\Omega$	BUX82	500	V
		BUX83	500	
V_{EBO}	Emitter-Base Voltage		10	V
I_C	Collector Current-Continuous		6	A
I_{CM}	Collector Current-Peak		8	A
I_B	Base Current-Continuous		2	A
I_{BM}	Base Current-Peak		3	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$		75	W
T_J	Junction Temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-65~150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.65	$^{\circ}\text{C/W}$



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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	BUX82	$I_C=100\text{mA}$; $I_B=0$; $L=25\text{mH}$	400			V
		BUX83		450			
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage	BUX82	$I_C=100\text{mA}$; $R_{BE}=100\Omega$; $L=15\text{mH}$	500			V
		BUX83		500			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	BUX82	$I_C=4\text{A}$; $I_B=1.25\text{A}$			3.0	V
		BUX83				1.6	
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	BUX82	$I_C=2.5\text{A}$; $I_B=0.5\text{A}$			1.5	V
		BUX83				1.4	
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage		$I_C=4\text{A}$; $I_B=1.25\text{A}$			1.6	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage		$I_C=2.5\text{A}$; $I_B=0.5\text{A}$			1.4	V
I_{CES}	Collector Cutoff Current	BUX82	$V_{CES}=800\text{V}$; $V_{BE(off)}=1.5\text{V}$ $V_{CES}=800\text{V}$; $V_{BE(off)}=1.5\text{V}$, $T_C=125^{\circ}\text{C}$			1.0 2.0	mA
		BUX83	$V_{CES}=1000\text{V}$; $V_{BE(off)}=1.5\text{V}$ $V_{CES}=1000\text{V}$; $V_{BE(off)}=1.5\text{V}$, $T_C=125^{\circ}\text{C}$			1.0 2.0	
I_{EBO}	Emitter Cutoff Current		$V_{EB}=10\text{V}$; $I_C=0$			10	mA
h_{FE}	DC Current Gain		$I_C=1.2\text{A}$; $V_{CE}=5\text{V}$		30		
C_{OB}	Output Capacitance		$I_E=0$; $V_{CB}=10\text{V}$; $f_{test}=1\text{MHz}$			500	pF
f_T	Current-Gain--Bandwidth Product		$I_C=0.2\text{A}$; $V_{CE}=10\text{V}$; $f_{test}=1\text{MHz}$		6		MHz

Switching Times

t_{on}	Turn-On Time	$I_C=2.5\text{A}$; $I_{B1}=0.5\text{A}$; $I_{B2}=-1\text{A}$; $V_{CC}=250\text{V}$		0.3	0.5	μs
t_{stg}	Storage Time			2.0	3.5	μs
t_f	Fall Time			0.3		μs