

isc Silicon NPN Power Transistors

BUV82/83

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 400V(\text{Min})$ -BUV82  
=  $450V(\text{Min})$ -BUV83
- High Switching Speed

APPLICATIONS

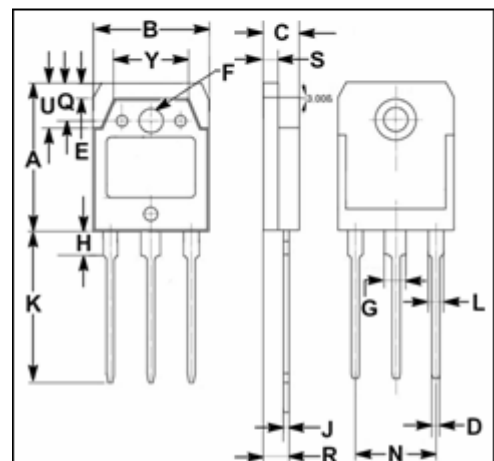
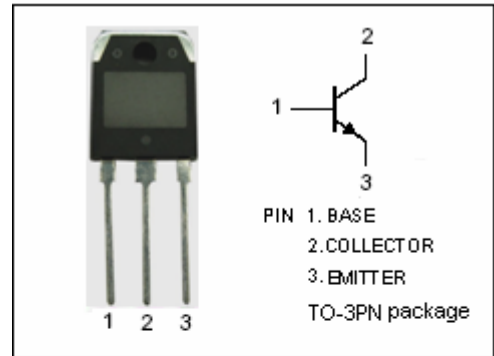
- Designed for use in converters, inverters, switching regulators, motor control systems and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT	
$V_{CES}$	Collector- Emitter Voltage $V_{BE}=0$	BUV82	850	V
		BUV83	1000	
$V_{CEO}$	Collector-Emitter Voltage	BUV82	400	V
		BUV83	450	
$V_{EBO}$	Emitter-Base Voltage	10	V	
$I_C$	Collector Current-Continuous	6	A	
$I_{CM}$	Collector Current-Peak	10	A	
$I_B$	Base Current-Continuous	2	A	
$I_{BM}$	Base Current-Peak	3	A	
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	100	W	
$T_J$	Junction Temperature	150	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.25	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

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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	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	400			V
			450			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=2.5\text{A}; I_B=0.5\text{A}$			1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=1.25\text{A}$			3.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=2.5\text{A}; I_B=0.5\text{A}$			1.4	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=1.25\text{A}$			1.6	v
$I_{CES}$	Collector Cutoff Current	$V_{CE}=V_{CESmax}; V_{BE}=0$ $V_{CE}=V_{CESmax}; V_{BE}=0; T_J=125^\circ\text{C}$			1 2	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=10\text{V}; I_C=0$			10	mA
$h_{FE}$	DC Current Gain	$I_C=0.6\text{A}; V_{CE}=5\text{V}$		22		
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.2\text{A}; V_{CE}=10\text{V}; f_{test}=1\text{MHz}$		6		MHz

## Switching Times; Resistive Load

$t_{on}$	Turn-On Time	$I_C=2.5\text{A}; I_{B1}=0.5\text{A}; I_{B2}=-1.0\text{A}; V_{CC}=250\text{V}$		0.3	0.6	$\mu\text{s}$
$t_s$	Storage Time			2.0	3.5	$\mu\text{s}$
$t_f$	Fall Time			0.3	0.75	$\mu\text{s}$