

**INCHANGE Semiconductor**

**isc Product Specification**

**isc Silicon NPN Power Transistor**

**BUW87A**

**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 200V(\text{Min})$
- High Switching Speed

**APPLICATIONS**

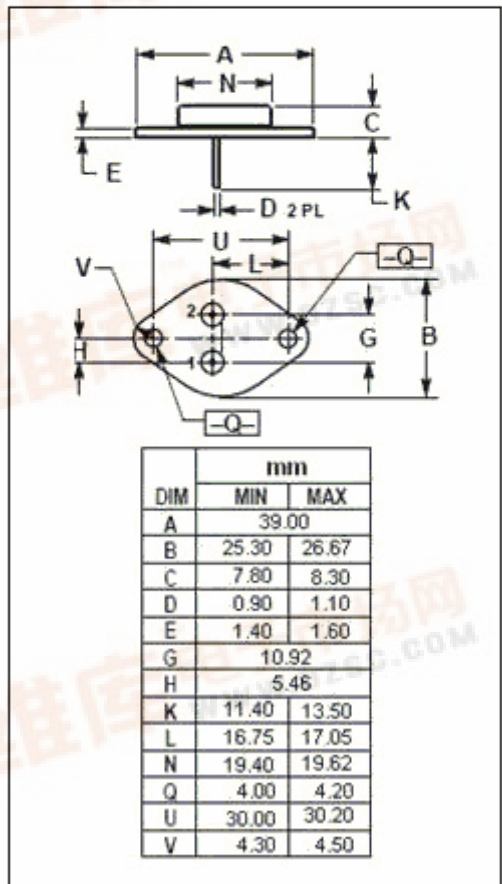
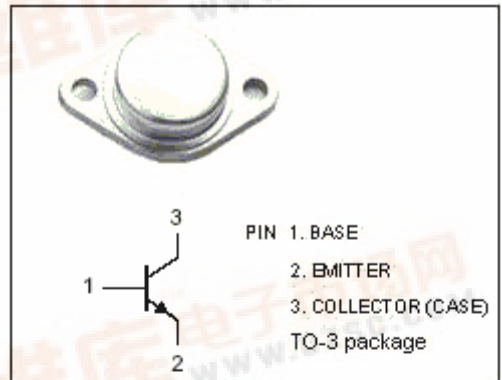
- Designed for use in converters, inverters, switching regulators and switching control amplifiers.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	400	V
$V_{CES}$	Collector-Emitter Voltage $V_{BE}=0$	400	V
$V_{CEO}$	Collector-Emitter Voltage	200	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current-Continuous	2	A
$I_{BM}$	Base Current-Peak	3	A
$I_E$	Emitter Current-Continuous	11	A
$I_{EM}$	Emitter Current-Peak	15	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	62.5	W
$T_J$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.8	$^\circ\text{C/W}$



**isc Silicon NPN Power Transistor****BUW87A****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	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	200			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$			0.65	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.6	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=V_{CBO}; V_{BE}=0$ $V_{CE}=V_{CBO}; V_{BE}=0; T_J=150^\circ\text{C}$			1 2	mA
$h_{FE}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=5\text{V}$	20			
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=5\text{V}; f_{test}=5\text{MHz}$		50		MHz

## Switching Times; Resistive Load

$t_{on}$	Turn-On Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A}; V_{CC}=100\text{V}$		0.3	0.4	$\mu\text{s}$
$t_s$	Storage Time			1.0	1.5	$\mu\text{s}$
$t_f$	Fall Time			0.15	0.3	$\mu\text{s}$