

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

BU808

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 700V(\text{Min})$
- High Switching Speed

APPLICATIONS

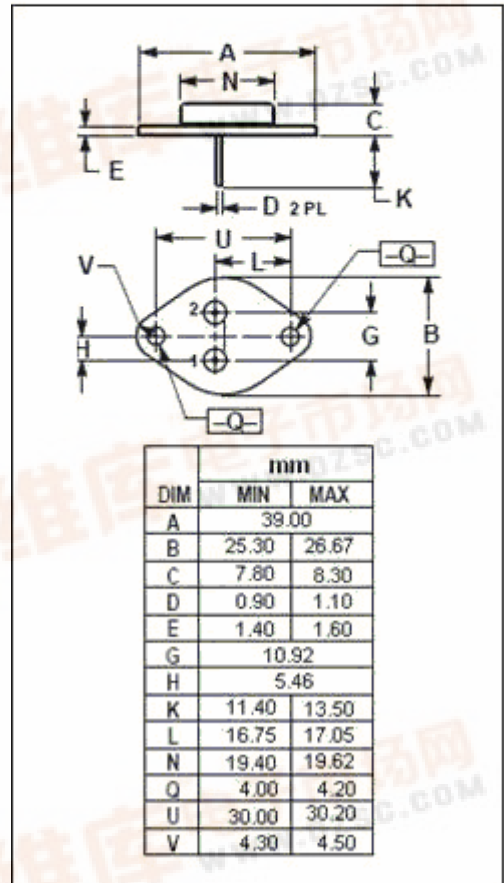
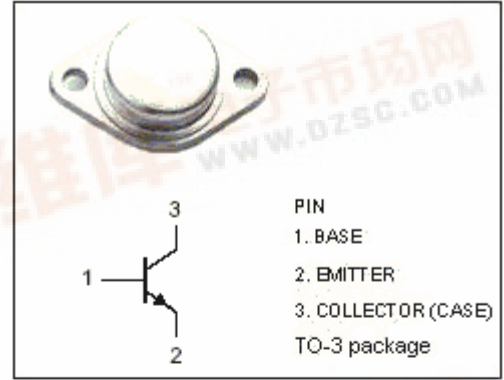
- Designed for use in three-phase AC motor control systems

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector- Emitter Voltage $V_{BE}=0$	1500	V
V_{CEO}	Collector-Emitter Voltage	700	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	8	A
I_{BM}	Base Current-Peak	12	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	160	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	0.78	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0; L=25\text{ mH}$	700			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=9\text{A}; I_B=4\text{A}$			1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=12\text{A}; I_B=6\text{A}$			3	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=9\text{A}; I_B=4\text{A}$			1.5	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 4	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	mA
h_{FE}	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	8			
$I_{S/B}$	Second Breakdown Current	$V_{CE}=100\text{V}; t_p=1\text{ s}$	0.4			A
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}, f_{test}=1\text{MHz}$		200		pF
f_T	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=5\text{V}, f_{test}=5\text{MHz}$		7		MHz

Switching Times

t_{on}	Turn-On Time	$I_C=9\text{A}; I_{B1}=-I_{B2}=4\text{A}$		1.5		$\mu\text{ s}$
t_s	Storage Time			4.5		$\mu\text{ s}$
t_f	Fall Time			0.5		$\mu\text{ s}$