

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

BUV22

DESCRIPTION

- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 1.0V$  (Max.) @  $I_C = 10A$
- High Switching Speed
- High DC Current Gain-  
:  $h_{FE} = 20$ (Min.) @  $I_C = 10A$

APPLICATIONS

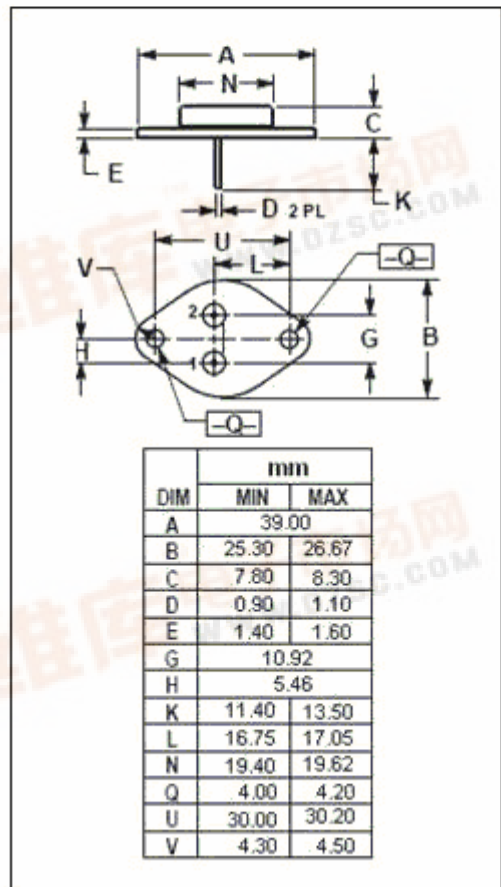
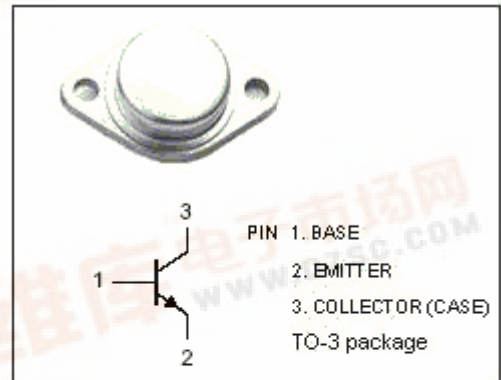
- Designed for high current, high speed, high power applications.

Absolute maximum ratings( $T_a = 25^\circ C$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	300	V
$V_{CER}$	Collector-Emitter Voltage $R_{BE} = 100 \Omega$	290	V
$V_{CEX}$	Collector-Emitter Voltage $V_{BE} = -1.5V$	300	V
$V_{CEO}$	Collector-Emitter Voltage	250	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	40	A
$I_{CM}$	Collector Current-Peak	50	A
$I_B$	Base Current-Continuous	8	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ C$	250	W
$T_j$	Junction Temperature	200	$^\circ C$
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	0.7	$^\circ C/W$



## isc Silicon NPN Power Transistor

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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0; L=25\text{mH}$	250			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	$I_C=10\text{A}; I_B=1\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=2.5\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=40\text{A}; I_B=4\text{A}$			1.5	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=200\text{V}; I_B=0$			3.0	mA
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=300\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=300\text{V}; V_{BE}=-1.5\text{V}; T_C=125^{\circ}\text{C}$			3.0 12.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			1.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=4\text{V}$	20		60	
$h_{FE-2}$	DC Current Gain	$I_C=20\text{A}; V_{CE}=4\text{V}$	10			
$f_T$	Current-Gain—Bandwidth Product	$I_C=2\text{A}; V_{CE}=15\text{V}; f_{test}=4\text{MHz}$	8			MHz

## Switching Times

$t_{on}$	Turn-on Time	$I_C=20\text{A}; I_{B1}=-I_{B2}=2.5\text{A};$ $V_{CC}=100\text{V}; R_C=5\Omega$			0.8	$\mu\text{s}$
$t_s$	Storage Time				2.0	$\mu\text{s}$
$t_f$	Fall Time				0.35	$\mu\text{s}$