

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

BUY89

DESCRIPTION

- High Switching Speed
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 800V$  (Min)

APPLICATIONS

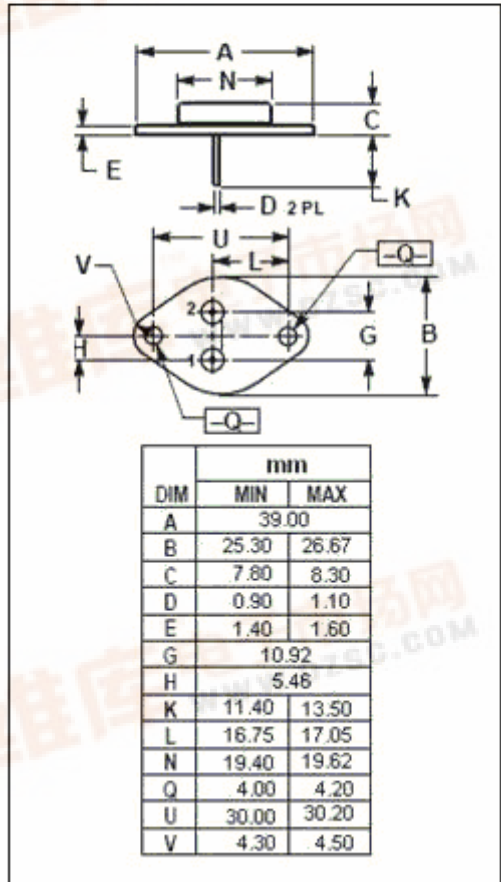
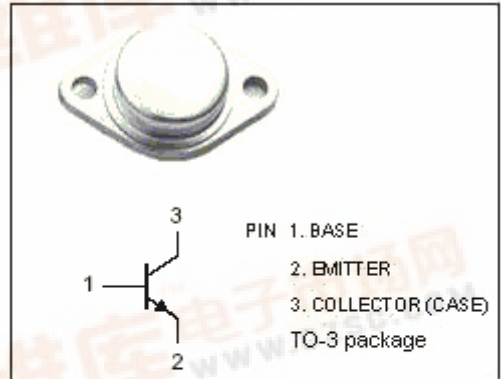
- Designed for use in AC motor control systems from three-phase mains.

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

SYMBOL	PARAMETER	MAX	UNIT
$V_{CES}$	Collector- Emitter Voltage ( $V_{BE} = 0$ )	1500	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	6	A
$I_{CM}$	Collector Current-Peak	10	A
$I_{CSM}$	Collector Current-Peak Non-repetitive	15	A
$I_B$	Base Current	4	A
$I_{BM}$	Base Current-Peak	6	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$	80	W
$T_j$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-65~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.12	$^{\circ}C/W$



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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	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	800			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=4.5\text{A}; I_B=2\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=4.5\text{A}; I_B=2\text{A}$			1.5	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=V_{CESMmax}; V_{BE}=0$ $V_{CE}=V_{CESMmax}; V_{BE}=0; T_J=100^\circ\text{C}$			1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	mA
$h_{FE}$	DC Current Gain	$I_C=4.5\text{A}; V_{CE}=5\text{V}$	2.5			
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=5\text{V}; f_{test}=5\text{MHz}$		7		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		125		pF

## Switching Times , Resistive Load

$t_{on}$	Turn-On Time			1.5		$\mu\text{s}$
$t_{stg}$	Storage Time	$I_C=4.5\text{A}; I_{B1}=-I_{B2}=2\text{A};$ $V_{CC}=250\text{V}; R_L=56\ \Omega$		4.5		$\mu\text{s}$
$t_f$	Fall Time			0.5		$\mu\text{s}$