

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

BUY49P

DESCRIPTION

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

APPLICATIONS

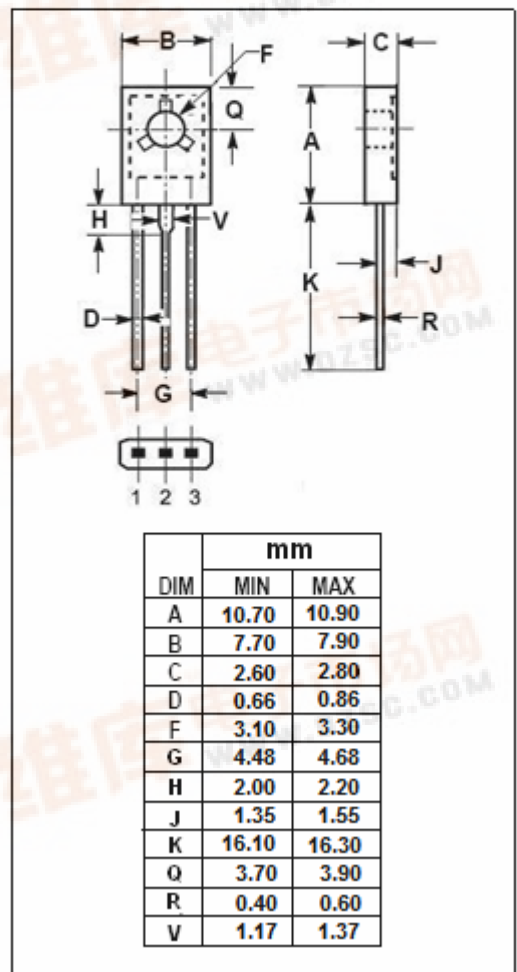
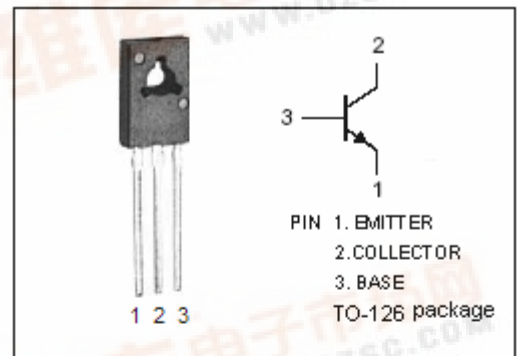
- Designed for high-current switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	250	V
$V_{CEO}$	Collector-Emitter Voltage	200	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	3.0	A
$I_{CM}$	Collector Current-Peak	5.0	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	15	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	8.33	$^\circ\text{C/W}$



## 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
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=20\text{mA}; I_B=0$	200			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=0.1\text{mA}; I_E=0$	250			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$			0.2	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$			1.1	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=200\text{V}; I_E=0$			0.1	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=20\text{mA}; V_{CE}=2\text{V}$	30			
$h_{FE-2}$	DC Current Gain	$I_C=20\text{mA}; V_{CE}=5\text{V}$	40			
$h_{FE-3}$	DC Current Gain	$I_C=0.5\text{mA}; V_{CE}=5\text{V}$	40			
$f_T$	Current-Gain—Bandwidth Product	$I_C=100\text{mA}; V_{CE}=10\text{V}$	30			MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$			50	pF

## Switching Times

$t_{on}$	Turn-On Time	$I_C=0.5\text{A}; I_{B1}=-I_{B2}=50\text{mA}; V_{CC}=20\text{V}$			0.8	$\mu\text{s}$
$t_{off}$	Turn-Off Time				2.5	$\mu\text{s}$