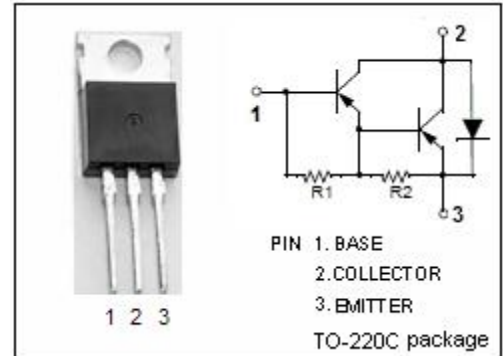


# isc Silicon PNP Darlington Power Transistor

# TIP125

## DESCRIPTION

- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = -3A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = -60V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = -2.0V(\text{Max}) @ I_C = -3A$   
=  $-4.0V(\text{Max}) @ I_C = -5A$
- Complement to Type TIP120
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

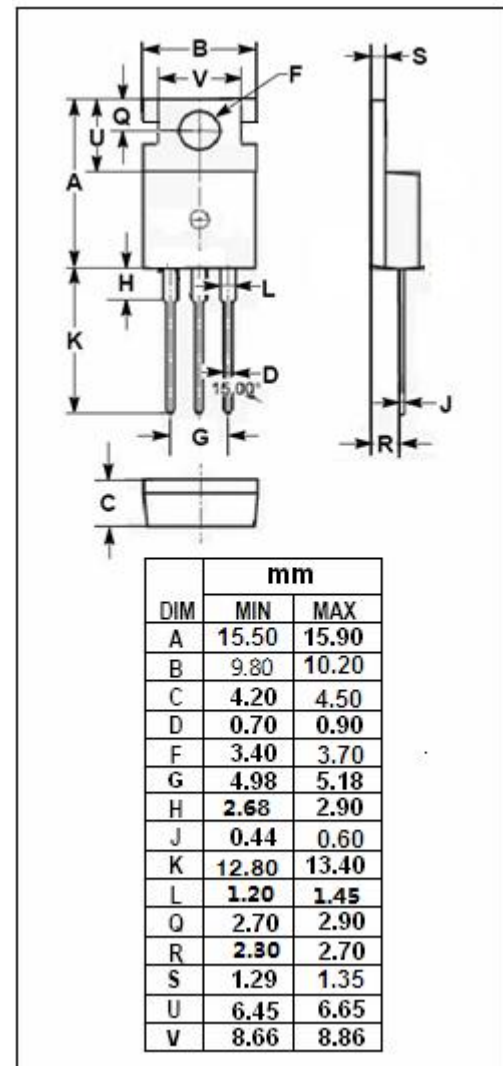


## APPLICATIONS

- Designed for general purpose amplifier and low speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-5	A
$I_{CM}$	Collector Current-Peak	-8	A
$I_B$	Base Current-DC	-120	mA
$P_C$	Collector Power Dissipation $T_C = 25^\circ\text{C}$	65	W
	Collector Power Dissipation $T_a = 25^\circ\text{C}$	2	
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{\text{stg}}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.92	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$

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## TIP125

## ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -30mA, I <sub>B</sub> = 0	-60			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -3A, I <sub>B</sub> = -12mA			-2.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation voltage	I <sub>C</sub> = -5A, I <sub>B</sub> = -20mA			-4.0	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = -3.0A; V <sub>CE</sub> = -3V			-2.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = -60V, I <sub>E</sub> = 0			-0.2	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = -30V, I <sub>B</sub> = 0			-0.5	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -5V; I <sub>C</sub> = 0			-2	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = -0.5A; V <sub>CE</sub> = -3V	1000			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -3.0A; V <sub>CE</sub> = -3V	1000			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = -10V, f= 0.1MHz			300	pF

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