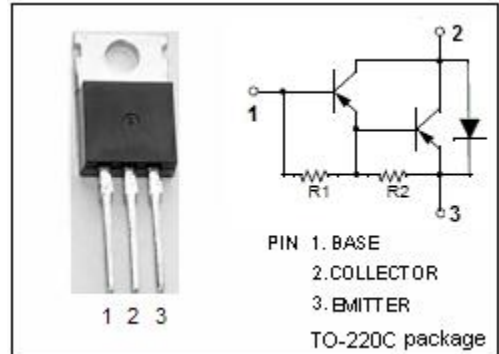


# isc Silicon PNP Darlington Power Transistor

# TIP117

## DESCRIPTION

- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = -1\text{A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = -100\text{V}(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = -2.5\text{V}(\text{Max}) @ I_C = -2\text{A}$
- Complement to Type TIP112
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



## APPLICATIONS

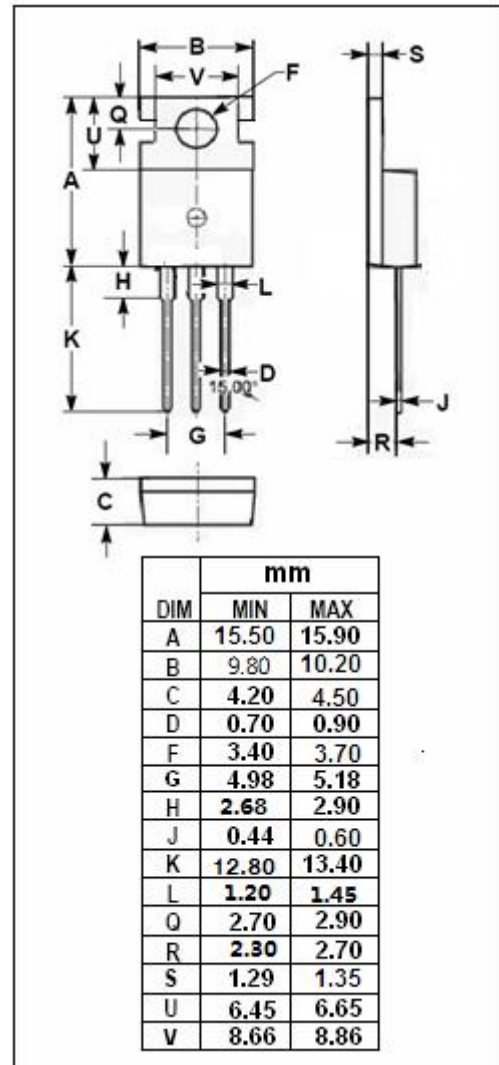
- Designed for general purpose amplifier and low speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-100	V
$V_{CEO}$	Collector-Emitter Voltage	-100	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-2	A
$I_{CM}$	Collector Current-Peak	-4	A
$I_B$	Base Current	-50	mA
$P_C$	Collector Power Dissipation $T_c=25^\circ\text{C}$	50	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
$R_{\text{th}j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ\text{C}/\text{W}$
$R_{\text{th}j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$



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## 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	-100			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -2A, I <sub>B</sub> = -8mA			-2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = -2A; V <sub>CE</sub> = -4V			-2.8	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = -100V, I <sub>E</sub> = 0			-1.0	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = -50V, I <sub>B</sub> = 0			-2.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -5V; I <sub>C</sub> = 0			-2.0	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = -1A; V <sub>CE</sub> = -4V	1000			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -2A; V <sub>CE</sub> = -4V	500			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = -10V, f= 0.1MHz			200	pF

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