

isc Silicon PNP Darlington Power Transistor

TIP107

DESCRIPTION

- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = -3\text{A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = -100\text{V}(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = -2.0\text{V}(\text{Max}) @ I_C = -3\text{A}$   
=  $-2.5\text{V}(\text{Max}) @ I_C = -8\text{A}$
- Complement to Type TIP102

APPLICATIONS

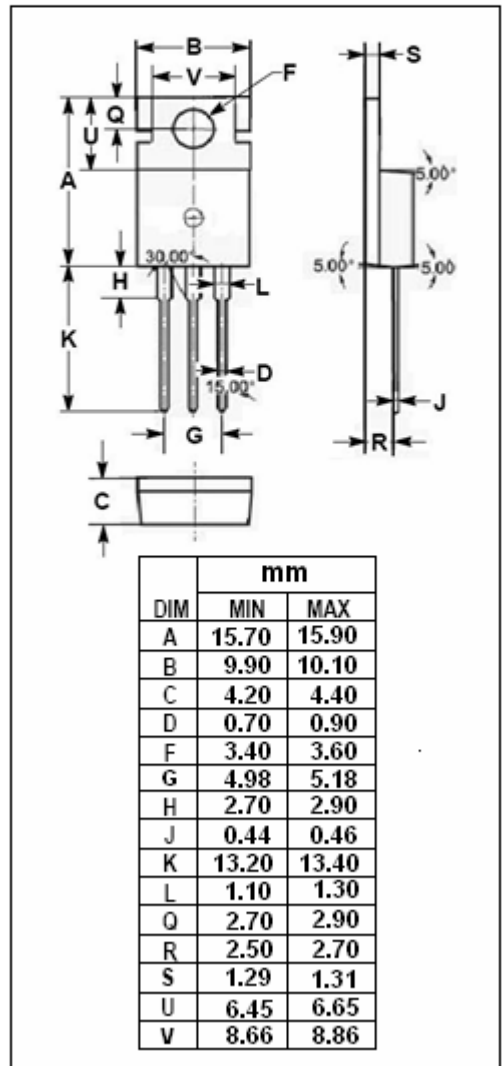
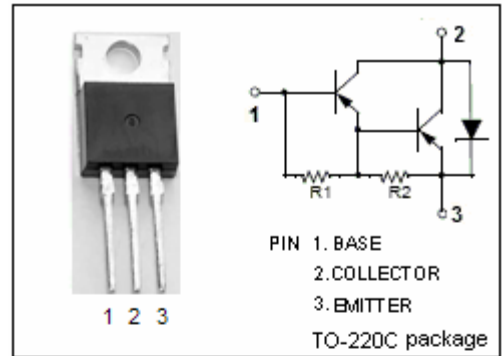
- Designed for general-purpose amplifier and low-speed switching applications

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	-8	A
$I_{CM}$	Collector Current-Peak	-15	A
$I_B$	Base Current- Continuous	-1	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	
$T_j$	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	1.56	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$



**isc Silicon PNP Darlington Power Transistor****TIP107****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	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)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -3A ,I <sub>B</sub> = -6mA		-2.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -8A ,I <sub>B</sub> = -80mA		-2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = -8A ; 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		-50	μ A
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = -50V, I <sub>B</sub> =0		-50	μ A
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> = -3A ; V <sub>CE</sub> = -4V	1000	20000	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -8A ; V <sub>CE</sub> = -4V	200		
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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