

isc Silicon PNP Darlington Power Transistor

TIP105

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 1000(\text{Min}) @ I_C = -3\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = -60\text{V}(\text{Min})$
- 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 TIP100
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

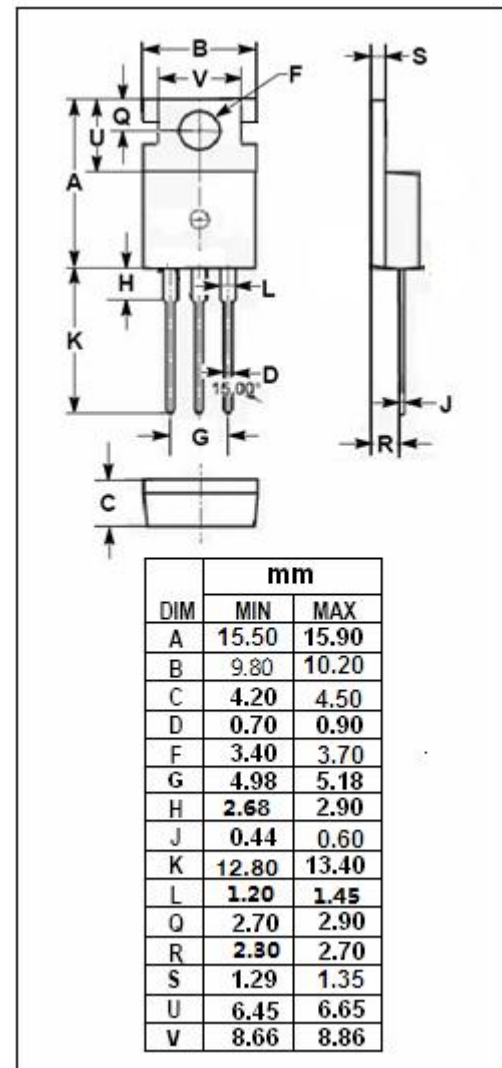
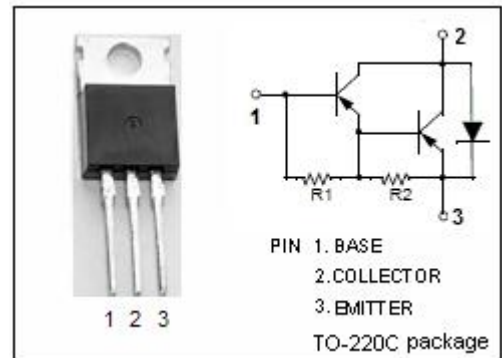
- Designed for general-purpose amplifier and low-speed switching applications

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	-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	$^\circ\text{C}/\text{W}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = -30mA, I _B = 0	-60		V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = -3A, I _B = -6mA		-2.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = -8A, I _B = -80mA		-2.5	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = -8A ; V _{CE} = -4V		-2.8	V
I _{CBO}	Collector Cutoff Current	V _{CB} = -60V, I _E =0		-50	μ A
I _{CEO}	Collector Cutoff Current	V _{CE} = -30V, I _B =0		-50	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = -5V; I _C =0		-2	mA
h _{FE-1}	DC Current Gain	I _C = -3A ; V _{CE} = -4V	1000	20000	
h _{FE-2}	DC Current Gain	I _C = -8A ; V _{CE} = -4V	200		
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = -10V, f= 0.1MHz		300	pF

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