

isc Silicon NPN Power Transistors

TIP50

DESCRIPTION

- DC Current Gain $-h_{FE} = 30 \sim 150 @ I_C = 0.3A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 400V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

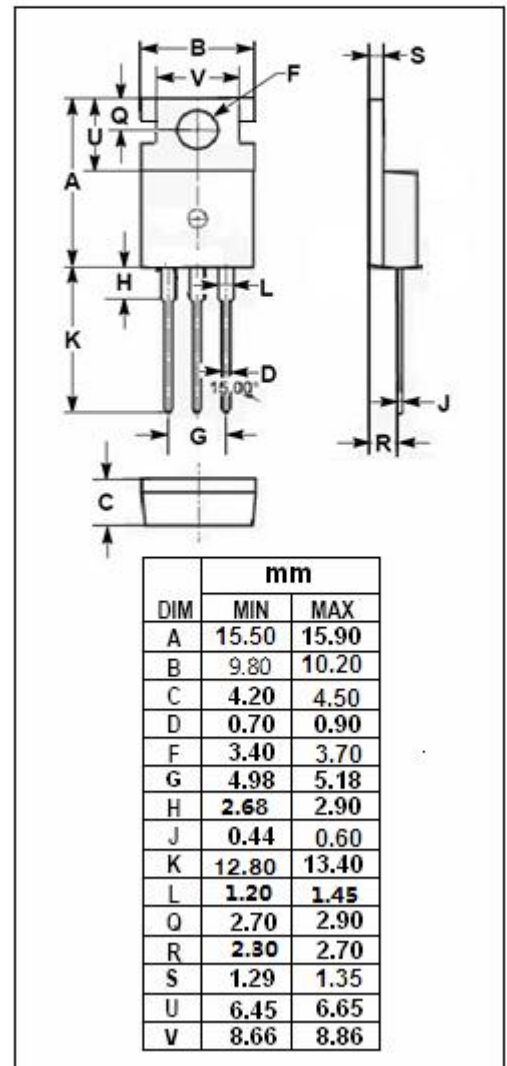
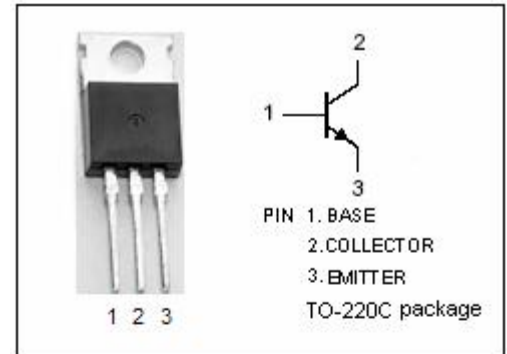
- Designed for line operated audio output amplifier, switchmode power supply drivers and other switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	1.0	A
I_{CM}	Collector Current-Peak	2.0	A
I_B	Base Current	0.6	A
P_D	Collector Power Dissipation $T_C = 25^\circ\text{C}$	40	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	3.125	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



isc Silicon NPN Power Transistors**TIP50****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 30mA; I _B = 0	400		V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 1A; I _B = 0.2A		1.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 1A; V _{CE} = 10V		1.5	V
I _{CEO}	Collector Cutoff Current	V _{CE} = 300V; I _B = 0		1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0		1	mA
I _{CBO}	Collector Cutoff Current	V _{CB} = 500V; I _E = 0		1	mA
h _{FE-1}	DC Current Gain	I _C = 0.3A; V _{CE} = 10V	30	150	
h _{FE-2}	DC Current Gain	I _C = 1A; V _{CE} = 10V	10		
f _T	Current-Gain—Bandwidth Product	I _C = 0.1A; V _{CE} = 10V	10		MHz

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