

isc Silicon NPN Power Transistors

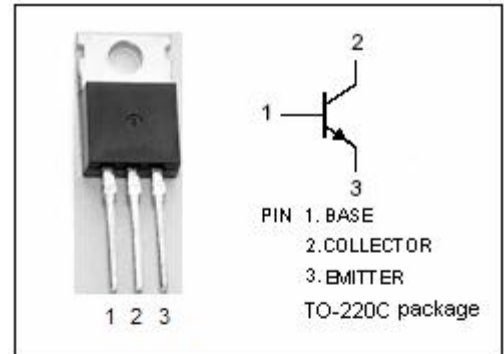
TIP50

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

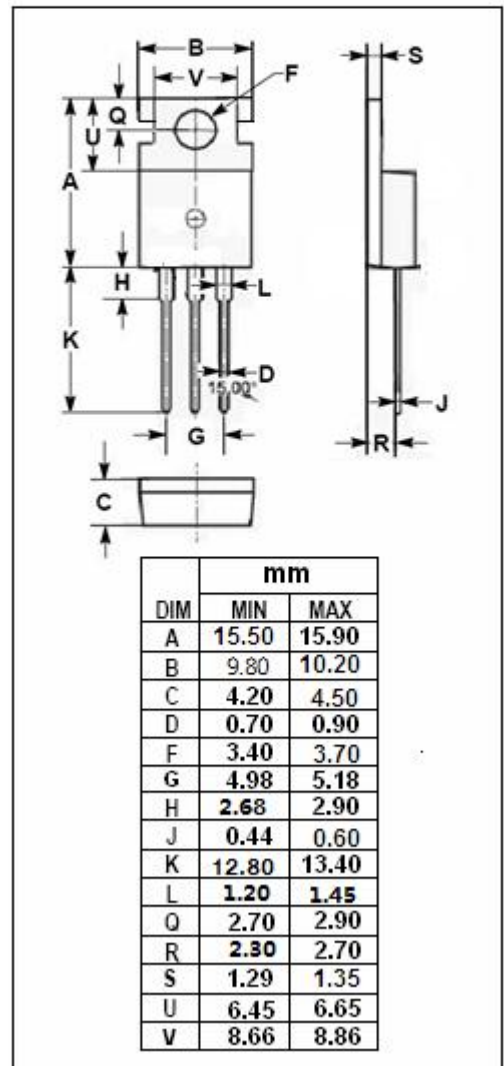
APPLICATIONS

- 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	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$

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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C= 30\text{mA}; I_B= 0$	400		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 1\text{A}; I_B= 0.2\text{A}$		1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C= 1\text{A}; V_{CE}= 10\text{V}$		1.5	V
I_{CEO}	Collector Cutoff Current	$V_{CE}= 300\text{V}; I_B= 0$		1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 5\text{V}; I_C= 0$		1	mA
I_{CBO}	Collector Cutoff Current	$V_{CB}= 500\text{V}; I_E= 0$		1	mA
h_{FE-1}	DC Current Gain	$I_C= 0.3\text{A}; V_{CE}= 10\text{V}$	30	150	
h_{FE-2}	DC Current Gain	$I_C= 1\text{A}; V_{CE}= 10\text{V}$	10		
f_T	Current-Gain—Bandwidth Product	$I_C= 0.1\text{A}; V_{CE}= 10\text{V}$	10		MHz

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