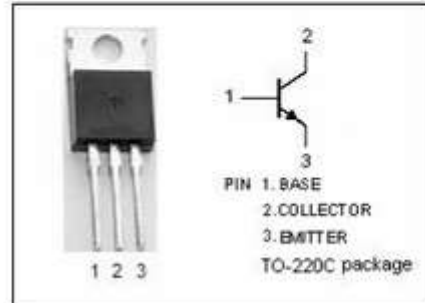


**DESCRIPTION**

- DC Current Gain  $-h_{FE} = 30\sim 150@ I_C = 0.3A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CE(SUS)} = 400V(\text{Min})$

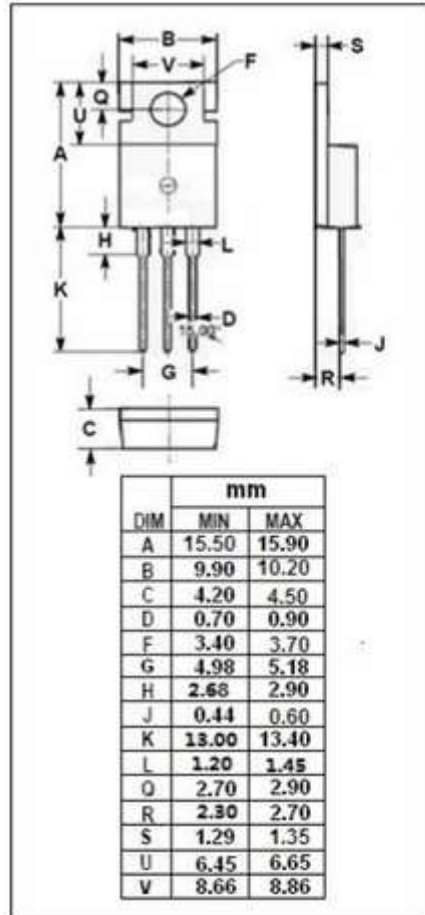
**APPLICATIONS**

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



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CB0}$	Collector-Base Voltage	500	V
$V_{CE0}$	Collector-Emitter Voltage	400	V
$V_{EB0}$	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 $T_C=25^{\circ}C$	40	W
	Collector Power Dissipation $T_a=25^{\circ}C$	2	
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-65~150	$^{\circ}C$



**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th-jc}$	Thermal Resistance, Junction to Case	3.125	$^{\circ}C/W$
$R_{th-ja}$	Thermal Resistance, Junction to Ambient	62.5	$^{\circ}C/W$

## SPTECH Silicon NPN Power Transistors

TIP50

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE(QSUS)}$	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