

SPTECH Silicon NPN Power Transistor

2SC1971-2

DESCRIPTION

- High Power Gain-
: $G_{pe} \geq 7\text{dB}$, $P_O = 6\text{W}$; $V_{CE} = 13.5\text{V}$
- High Reliability

APPLICATIONS

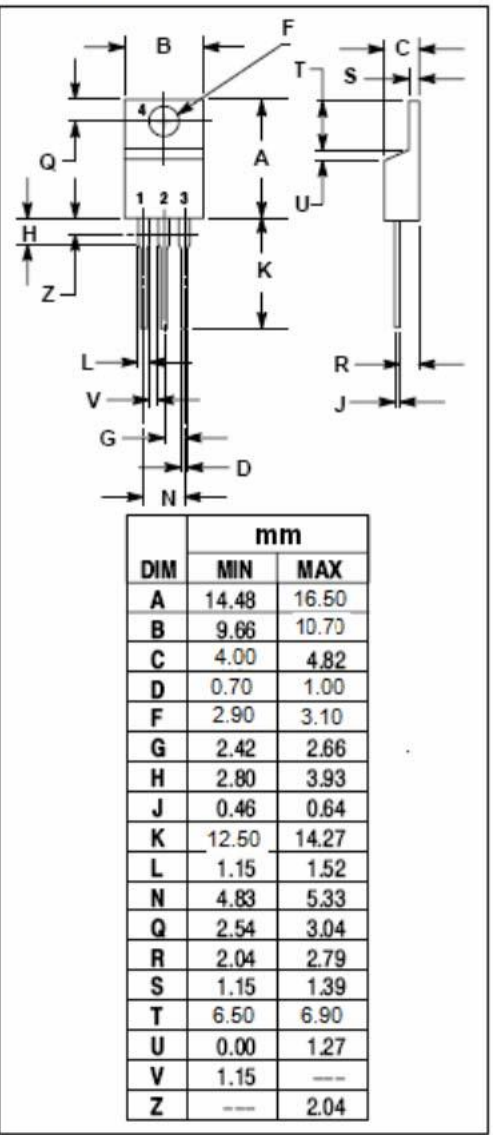
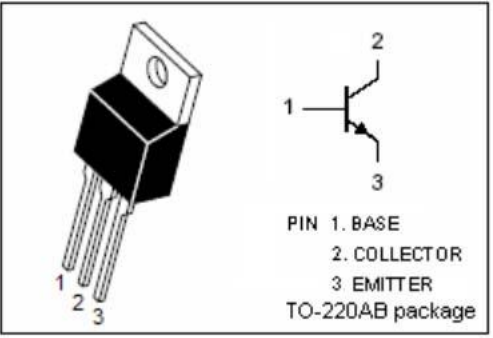
- Designed for RF power amplifiers on VHF band mobile radio applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	35	V
V_{CEO}	Collector-Emitter Voltage $R_{BE} = \infty$	17	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	2	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	12.5	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.5	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	83	$^\circ\text{C/W}$
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	10	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=10\text{mA}$, $I_E=0$	35			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}$; $R_{BE}=\infty$	17			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=5\text{mA}$, $I_C=0$	4			V
I_{CBO}	Collector Cutoff Current	$V_{CB}=25\text{V}$; $I_E=0$			0.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=3\text{V}$; $I_C=0$			0.5	mA
h_{FE}	DC Current Gain	$I_C=0.1\text{A}$; $V_{CE}=10\text{V}$	10		180	
P_O	Output Power	$V_{CC}=13.5\text{V}$; $P_{in}=0.6\text{W}$; $f=175\text{MHz}$	6			W
η_C	Collector Efficiency		7			DB
C_{OB}	Output Capacitance	$I_E=0$; $V_{CB}=20\text{V}$, $f_{test}=1\text{MHz}$			18	pF