

isc Silicon NPN Power Transistor

2SC1971

DESCRIPTION

- High Power Gain-  
:  $G_{pe} \geq 10\text{dB}, f = 175\text{MHz}, P_O = 6\text{W}; V_{CC} = 13.5\text{V}$
- High Reliability

APPLICATIONS

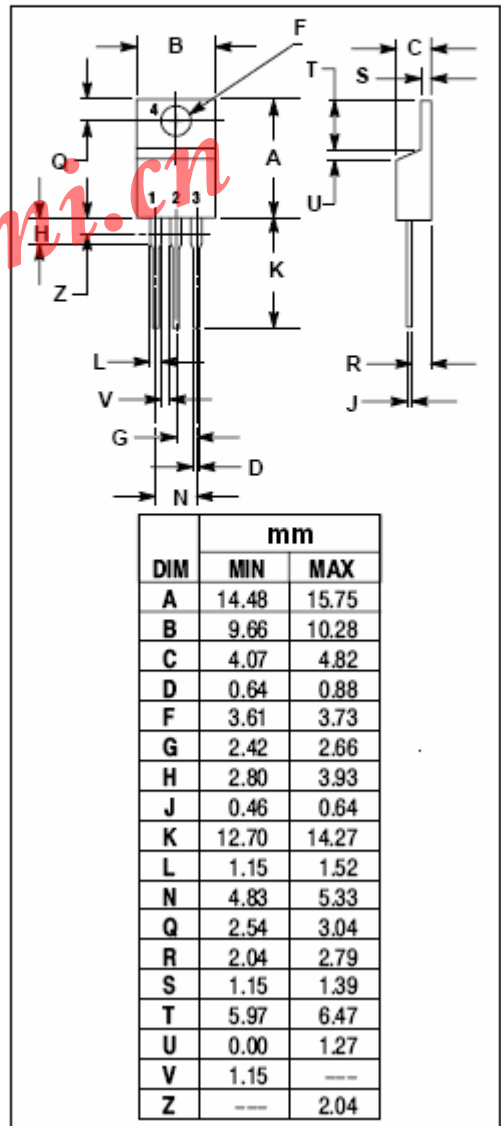
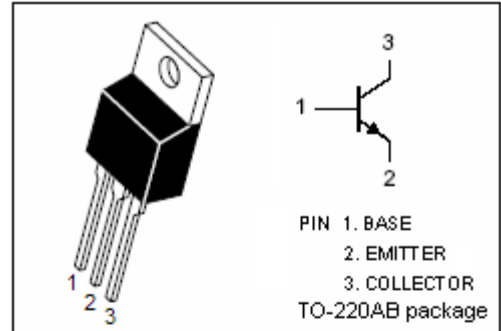
- Designed for RF power amplifiers on VHF band mobile radio applications.

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	$^\circ\text{C}/\text{W}$
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	10	$^\circ\text{C}/\text{W}$



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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	7		W
$\eta_C$	Collector Efficiency		60	70		%

◆  $h_{FE}$  Classifications

X	A	B	C	D
10-25	20-45	35-70	55-110	90-180