

**isc Silicon NPN Power Transistor**

**2SC1970**

**DESCRIPTION**

- High Power Gain-  
:  $G_{pe} \geq 9.2\text{dB}$ ,  $f = 175\text{MHz}$ ,  $P_O = 1\text{W}$ ;  $V_{CC} = 13.5\text{V}$
- High Reliability

**APPLICATIONS**

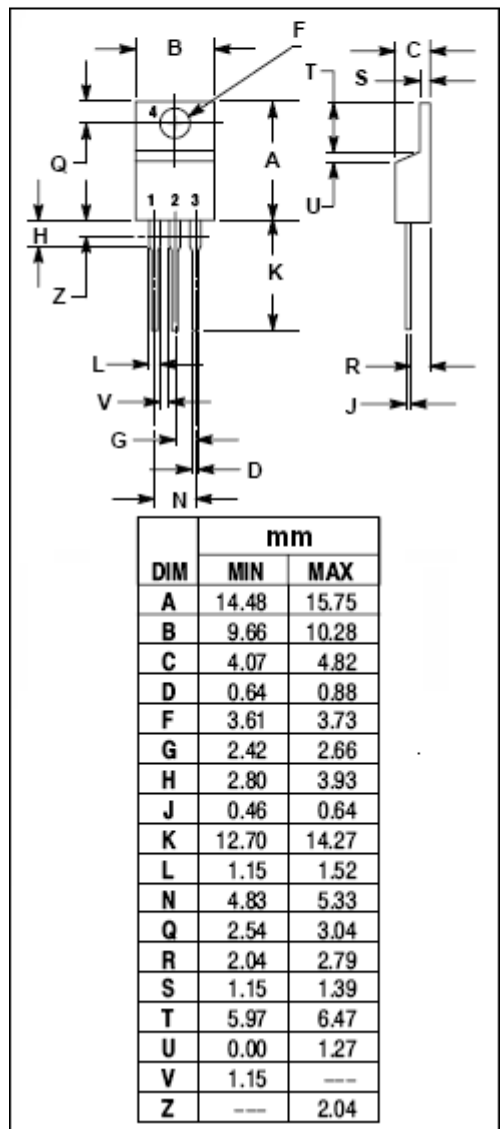
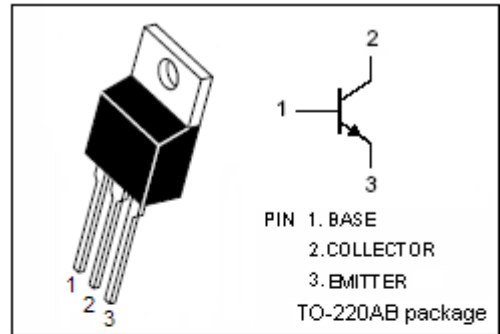
- Designed for RF power amplifiers on VHF band mobile radio applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage $R_{BE} = \infty$	17	V
$V_{EBO}$	Emitter-Base Voltage	4	V
$I_C$	Collector Current	0.6	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	5	W
	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	1	
$T_j$	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	125	$^\circ\text{C/W}$
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	25	$^\circ\text{C/W}$



**isc Silicon NPN Power Transistor****2SC1970****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	$I_C=5\text{mA}, I_E=0$	40			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	$I_E=1\text{mA}, I_C=0$	4			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=25\text{V}; I_E=0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=3\text{V}; I_C=0$			0.1	mA
$h_{FE}$	DC Current Gain	$I_C=0.1\text{A}; V_{CE}=10\text{V}$	10		180	
$P_O$	Output Power	$V_{CC}=13.5\text{V}; P_{in}=0.12\text{W}; f=175\text{MHz}$	1	1.2		W
$\eta_C$	Collector Efficiency		50	60		%

◆  **$h_{FE}$  Classifications**

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