

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
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

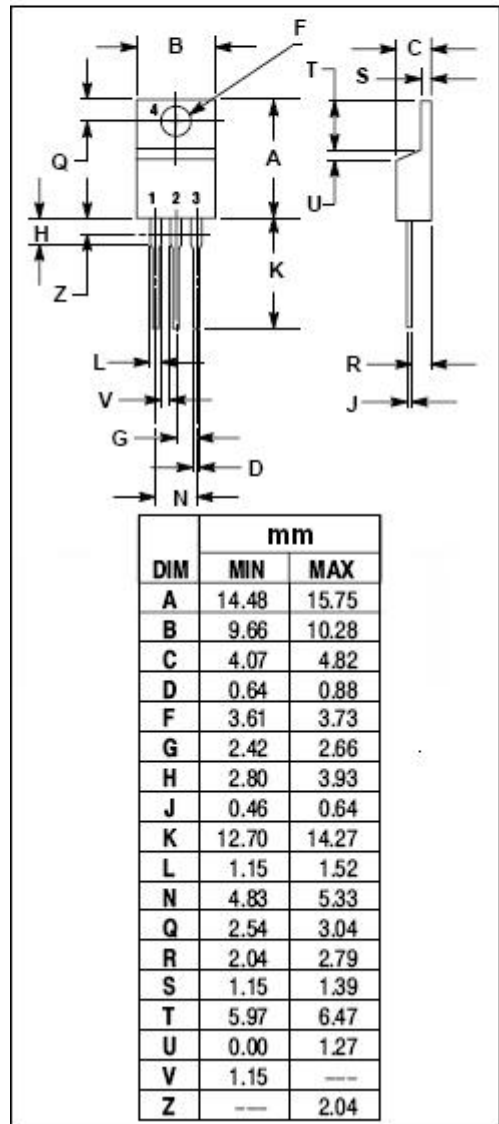
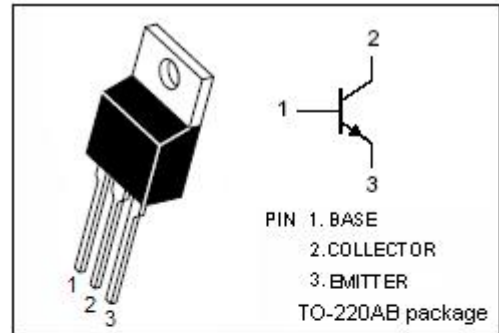
- Designed for RF power amplifiers on VHF band mobile radio applications.

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	$^\circ\text{C/W}$



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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	$I_C=5\text{mA}, I_E=0$	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
η_C	Collector Efficiency		50	60		%

◆ h_{FE} Classifications

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

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