

Silicon NPN Power Transistor

2SC2166

DESCRIPTION

- High Power Gain-
: $G_{pe} \geq 13.8\text{dB}$ @ $f = 27\text{MHz}$, $P_O = 6\text{W}$; $V_{CC} = 12\text{V}$
- High Reliability

APPLICATIONS

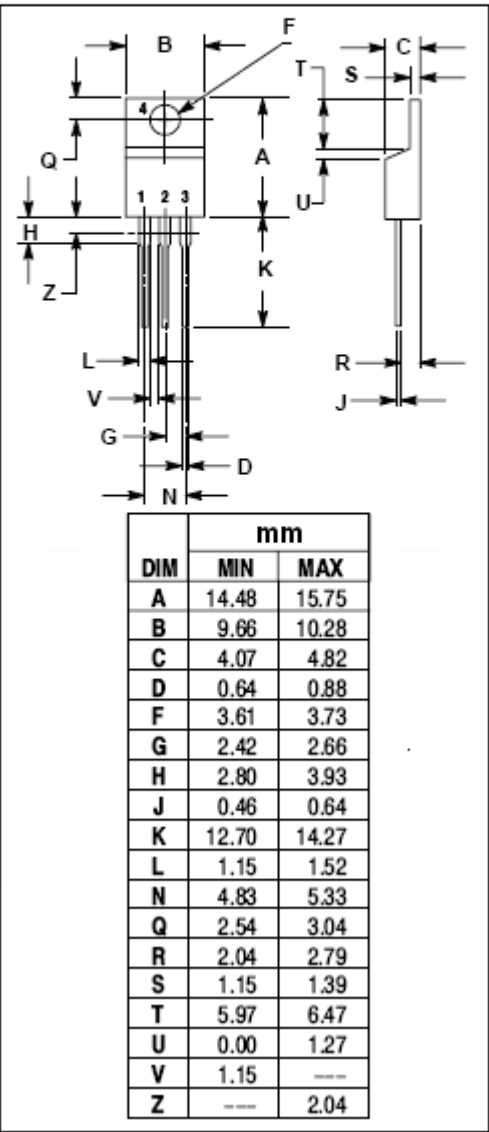
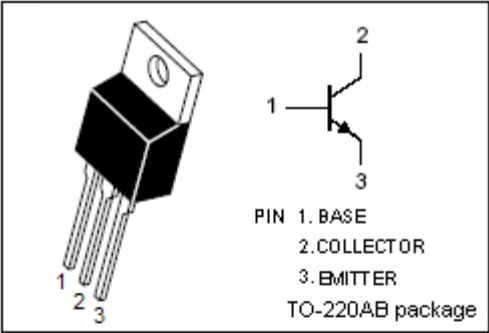
- Designed for 3 to 4 watts output power amplifiers in HF band mobile radio applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	45	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 10\Omega$	45	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	4	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	$^\circ\text{C/W}$



Silicon NPN Power Transistor**2SC2166****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	$I_C=1\text{mA}$, $I_E=0$	45			V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$; $R_{BE}=10\Omega$	45			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}$, $I_C=0$	4			V
I_{CBO}	Collector Cutoff Current	$V_{CB}=30\text{V}$; $I_E=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=3\text{V}$; $I_C=0$			0.1	mA
h_{FE}	DC Current Gain	$I_C=0.1\text{A}$; $V_{CE}=10\text{V}$	35		180	
P_O	Output Power	$V_{CC}=12\text{V}$; $P_{in}=0.25\text{W}$; $f=27\text{MHz}$	6	7.5		W
η_C	Collector Efficiency		55	60		%