

**Silicon NPN Power Transistor**

**2SC2166**

**DESCRIPTION**

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

**APPLICATIONS**

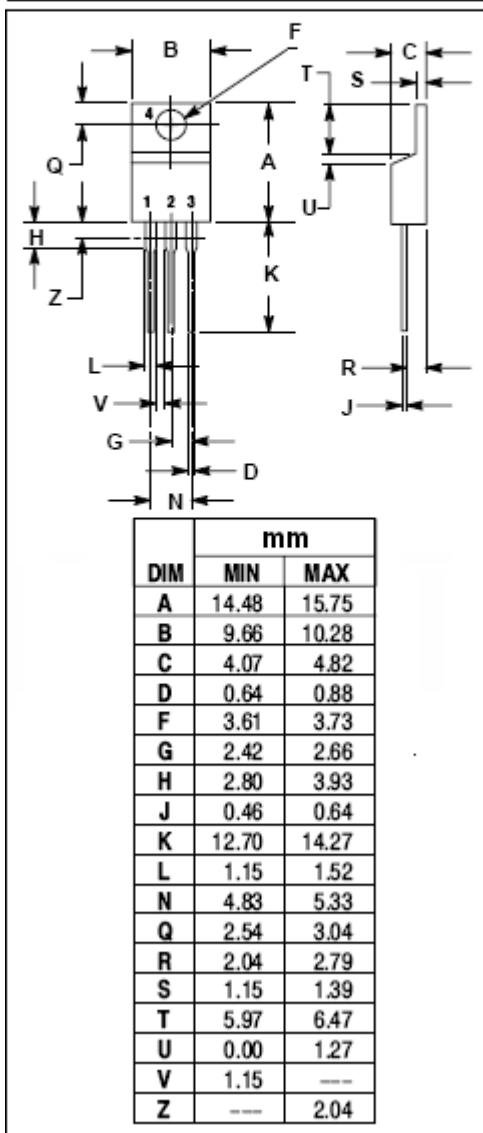
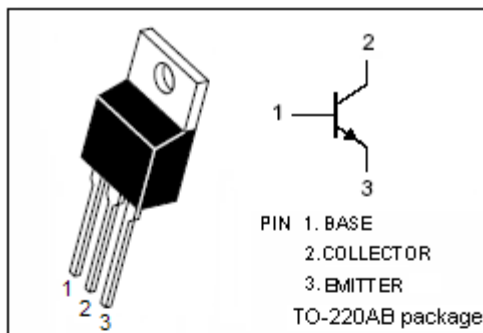
- Designed for 3 to 4 watts output power amplifiers in HF band mobile radio applications.

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25$  )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	45	V
$V_{CER}$	Collector-Emitter Voltage $R_{BE}= 10$	45	V
$V_{EBO}$	Emitter-Base Voltage	4	V
$I_C$	Collector Current	4	A
$P_C$	Collector Power Dissipation @ $T_C=25$	12.5	W
	Collector Power Dissipation @ $T_a=25$	1.5	
$T_j$	Junction Temperature	150	
$T_{stg}$	Storage Temperature Range	-55~150	

**THERMAL CHARACTERISTICS**

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



**ELECTRICAL CHARACTERISTICS**

$T_C=25$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C= 1mA, I_E= 0$	45			V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage	$I_C= 10mA; R_{BE}= 10$	45			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E= 1mA, I_C= 0$	4			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 30V; I_E= 0$			0.1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 3V; I_C= 0$			0.1	mA
$h_{FE}$	DC Current Gain	$I_C= 0.1A; V_{CE}= 10V$	35		180	
$P_O$	Output Power	$V_{CC}= 12V; P_{in}= 0.25W; f= 27MHz$	6	7.5		W
$\eta_c$	Collector Efficiency		55	60		%