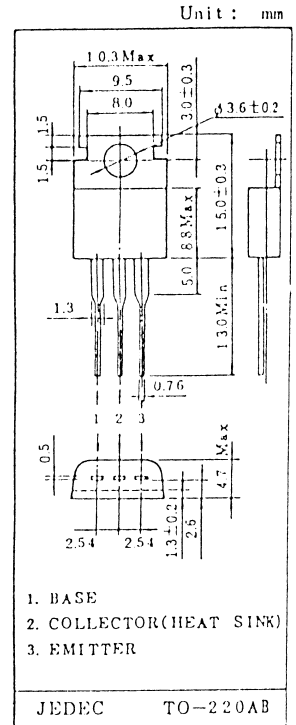


# 2SC2098

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

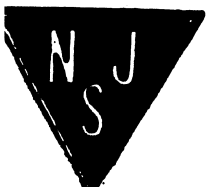
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CB0}$	70	V
Collector-Emitter Voltage ( $R_{EB}=10\Omega$ )	$V_{CER}$	70	V
Emitter-Base Voltage	$V_{EB0}$	4	V
Collector Current	$I_C$	6	A
Total Device Dissipation ( $T_C=50^{\circ}\text{C}$ )	$P_C$	20	W
Operating Junction Temperature Range	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55~150	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40\text{V}$ $I_E=0$	—	—	0.1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C=1\text{mA}$ $I_E=0$	70	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C=10\text{mA}$ $R_{EB}=10\Omega$	70	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}$ $I_C=0$	4	—	—	V
DC Current Gain (Note 1)	$h_{FE}$	$V_{CE}=5\text{V}$ $I_C=4\text{A}$	20	—	100	—
Collector-Emitter Saturation Voltage (Note 1)	$V_{CE(sat)}$	$I_C=4\text{A}$ $I_B=0.4\text{A}$	—	—	1.5	V
Current-Gain-Bandwidth Product	$f_T$	$V_{CE}=5\text{V}$ $I_C=0.5\text{A}$	100	—	—	MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ $I_E=0$ $f=1\text{MHz}$	—	80	120	pF

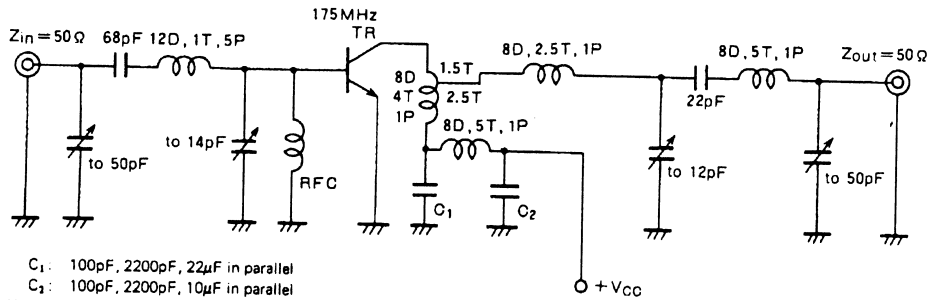
NOTE 1: Pulse Test: Pulse Width  $\leq 100\mu\text{s}$ , Duty Cycle  $\leq 3\%$



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

# NPN EPITAXIAL PLANAR TYPE

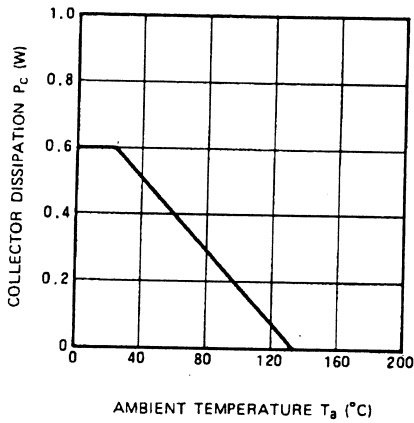
## TEST CIRCUIT



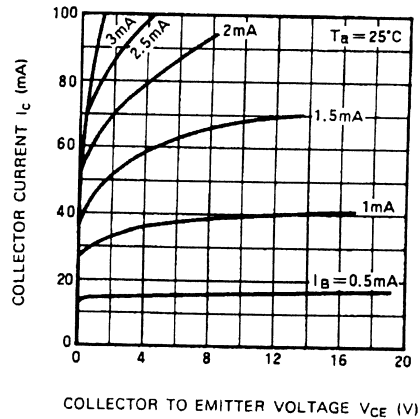
$C_1$ : 100pF, 2200pF, 22μF in parallel  
 $C_2$ : 100pF, 2200pF, 10μF in parallel  
 Notes: All coils are made from 1.5mmφ silver plated copper wire  
 Coil dimensions in milli-meter  
 D: Inner diameter of coil  
 T: Turn number of coil  
 P: Pitch of coil

## TYPICAL PERFORMANCE DATA

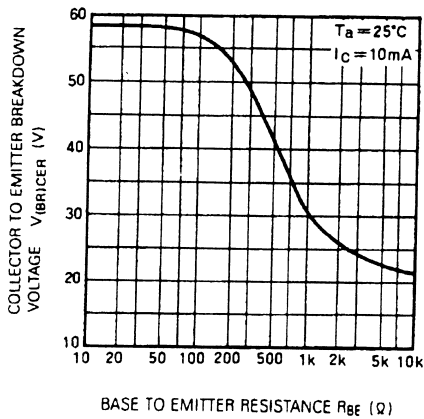
### COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



### COLLECTOR CURRENT VS. COLLECTOR TO EMITTER VOLTAGE



### COLLECTOR TO EMITTER BREAKDOWN VOLTAGE VS. BASE TO EMITTER RESISTANCE



### DC CURRENT GAIN VS. COLLECTOR CURRENT

