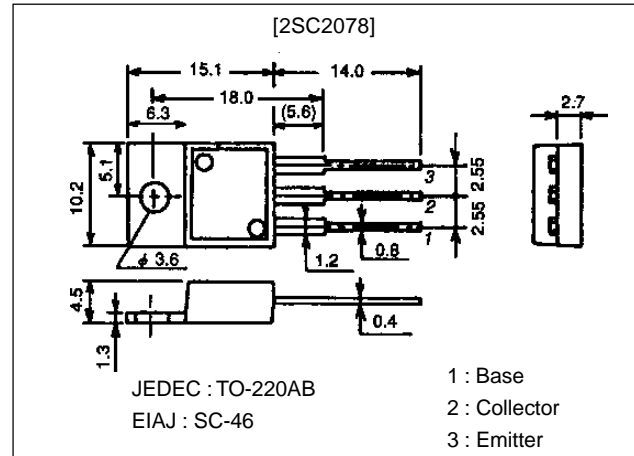


**SANYO****27MHz RF Power Amplifier Applications****Package Dimensions**

unit:mm

2010C

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		80	V
Collector-to-Emitter Voltage	$V_{CER}$	$R_{BE}=150\Omega$	75	V
Emitter-to-Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_C$		3	A
Collector Current (Pulse)	$I_{CP}$		5	A
Collector Dissipation	$P_C$		1.2	W
		$T_c=50^\circ\text{C}$	10	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			10	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			10	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	25*		200*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=0.1\text{A}$	100	150		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		45	60	pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.1\text{A}$		0.15	0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=0.1\text{A}$		0.9	1.2	V

\* : The 2SC2078 are classified by 0.5A  $h_{FE}$  as follows :

25	B	50	40	C	80	60	D	120	100	E	200
----	---	----	----	---	----	----	---	-----	-----	---	-----

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

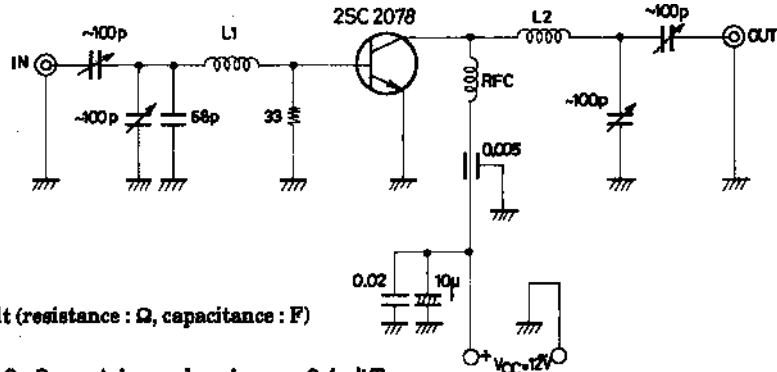
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

N1098HA (KT)/D251MH/4147KI/3145KI/2274KI No.462-1/4

# 2SC2078

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Saturation Voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_B=0$	80			V
Collector-to-Emitter Saturation Voltage	$V_{(BR)CER}$	$I_C=1mA, R_{BE}=150\Omega$	75			V
Emitter-to-Base Saturation Voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			V
[At specified test circuit]						
Output Power	$P_O$	$V_{CC}=12V, f=27MHz, P_i=0.2W$	4.0			W
Power Efficiency	$\eta$		60			%

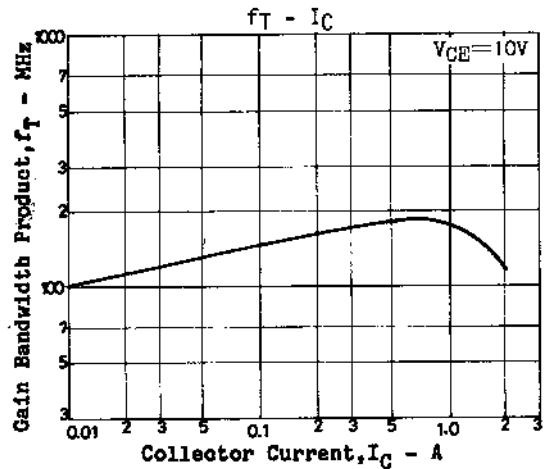
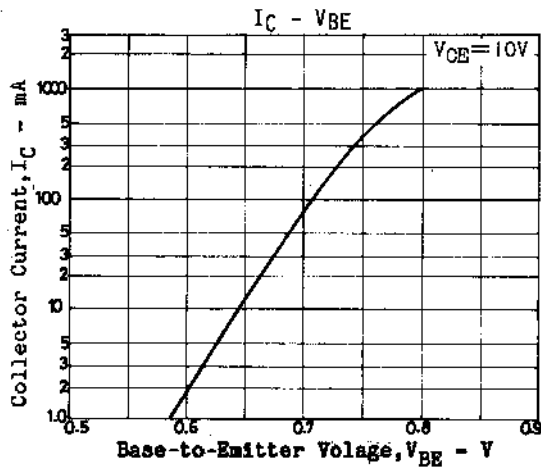
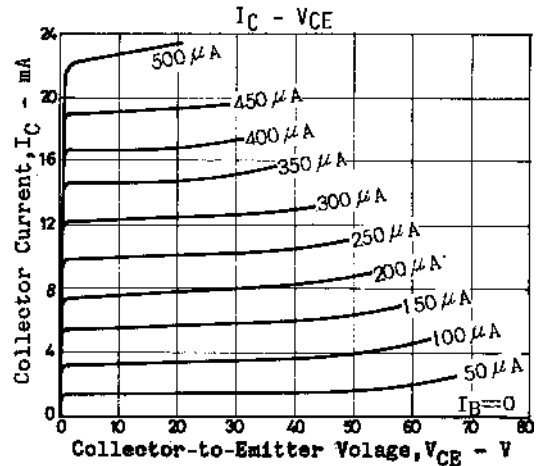
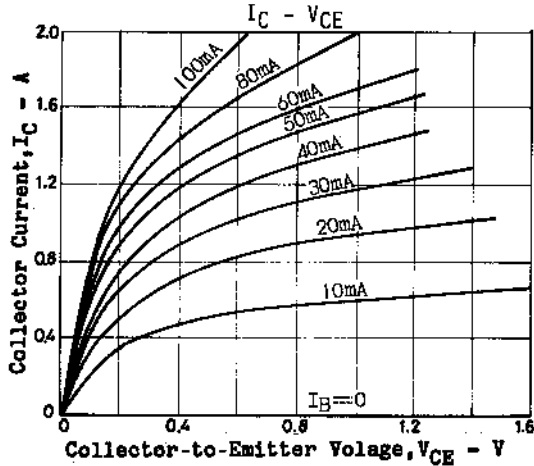
## 27MHz Output Power Test Circuit



Unit (resistance :  $\Omega$ , capacitance : F)

Coil data L1: 0.3mm tinned wire, 9 $\phi$  4T  
L2: 0.6mm tinned wire, 9 $\phi$  4T

RFC 2.2 $\mu$ H



# 2SC2078

