

**SANYO**

No.462E

**2SC2078**

NPN Epitaxial Planar Silicon Transistor

27MHz RF Power Amp Applications

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

Collector-to-Base Voltage	$V_{CBO}$	80	V
Collector-to-Emitter Voltage	$V_{CER}$	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
Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55 to +150	°C

$R_{BE}=150\Omega$   
 $T_c=50^\circ C$

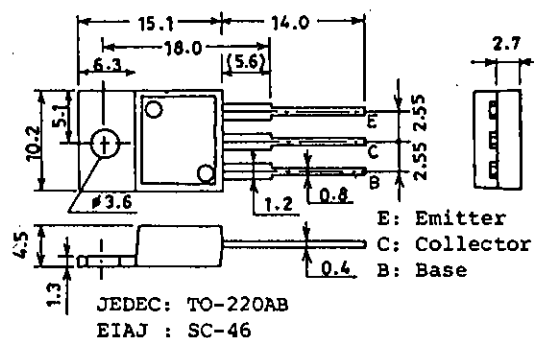
**Electrical Characteristics Characteristics at Ta=25°C**

		min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$			10	$\mu A$
DC Current Gain	$h_{FE}$	25*		200*	
Gain Bandwidth Product	$f_T$	100	150		MHz
Output Capacitance	$C_{ob}$		45	60	pF
C-E Saturation Voltage	$V_{CE(sat)}$		0.15	0.6	V
B-E Saturation Voltage	$V_{BE(sat)}$		0.9	1.2	V
C-B Saturation Voltage	$V_{(BR)CBO}$	80			V
C-E Saturation Voltage	$V_{(BR)CER}$	75			V
E-B Saturation Voltage	$V_{(BR)EBO}$	5			V
[At specified test circuit]					
Output Power	$P_o$		4.0		W
Power Efficiency	$\eta$		60		%

$V_{CB}=40V, I_E=0$   
 $V_{EB}=4V, I_C=0$   
 $V_{CE}=5V, I_C=0.5A$   
 $V_{CE}=10V, I_C=0.1A$   
 $V_{CB}=10V, f=1MHz$   
 $I_C=1A, I_B=0.1A$   
 $I_C=1A, I_B=0.1A$   
 $I_C=100\mu A, I_B=0$   
 $I_C=1mA, R_{BE}=150\Omega$   
 $I_E=100\mu A, I_C=0$   
 $V_{CC}=12V, f=27MHz, P_i=0.2W$

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

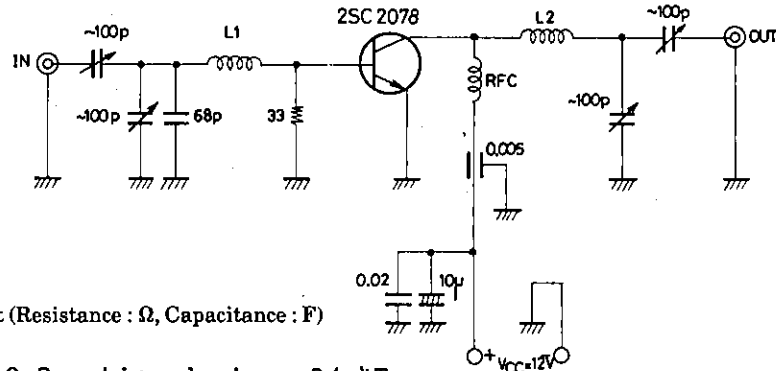
25	B	50	40	C	80	60	D	120	100	E	200
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**Package Dimensions 2010B**  
(unit:mm)**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

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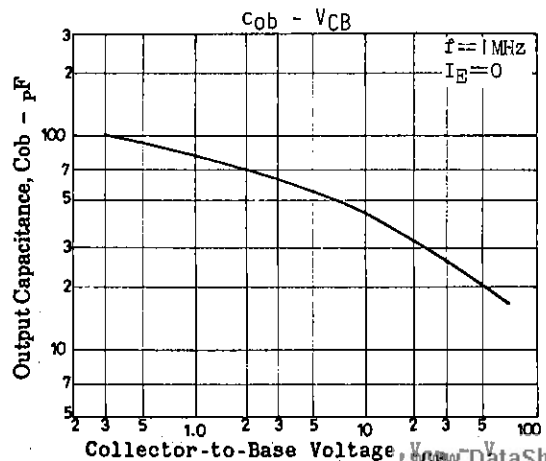
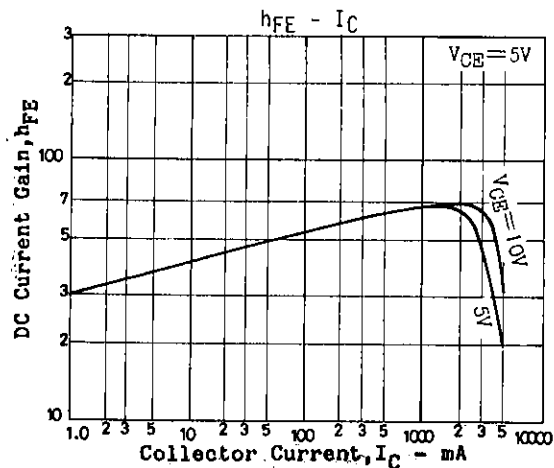
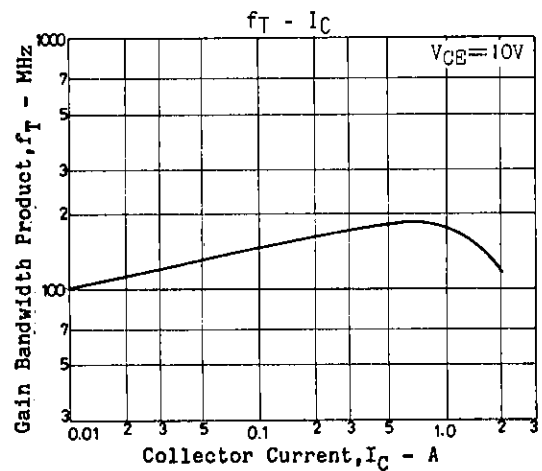
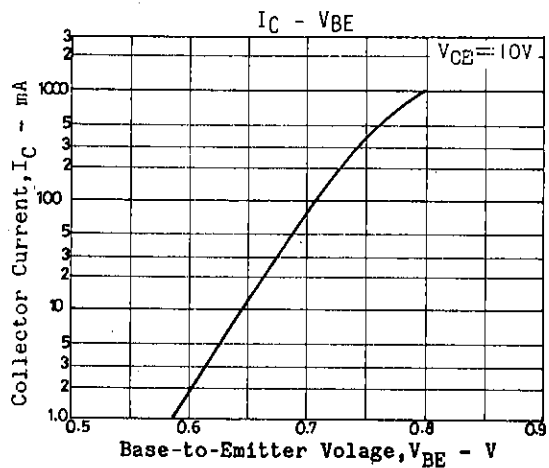
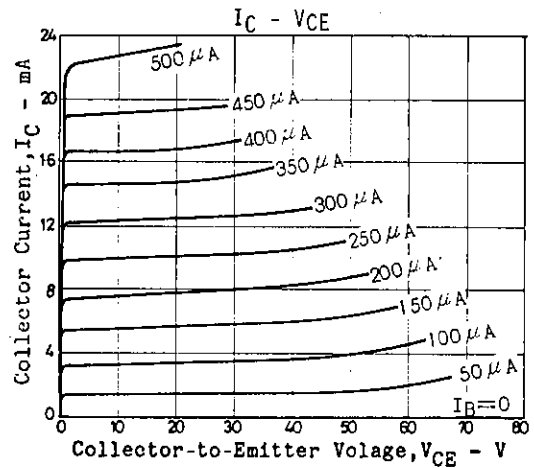
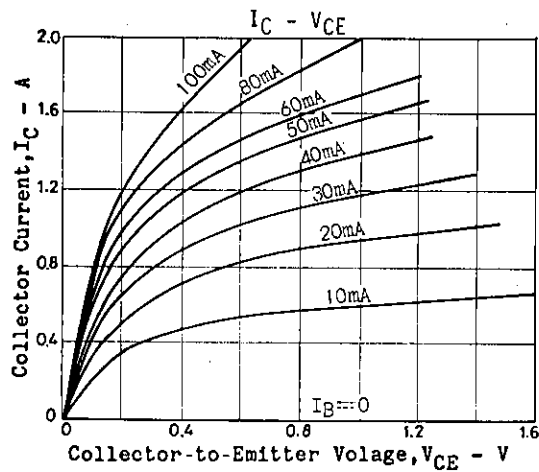
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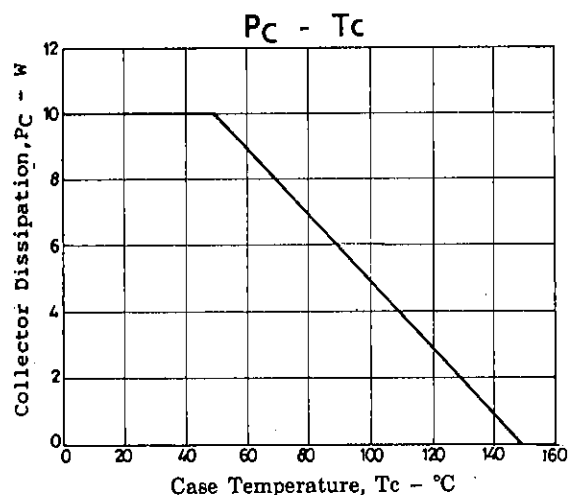
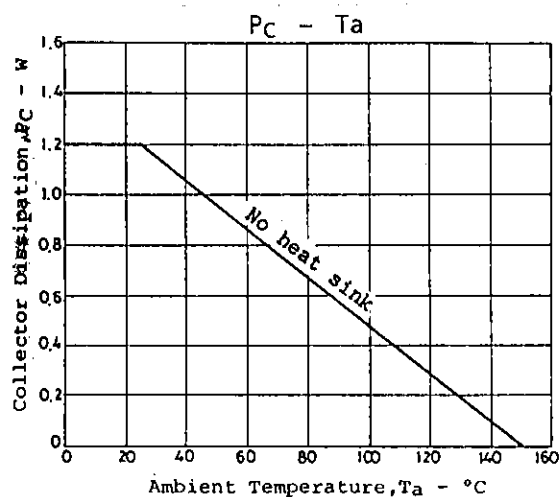
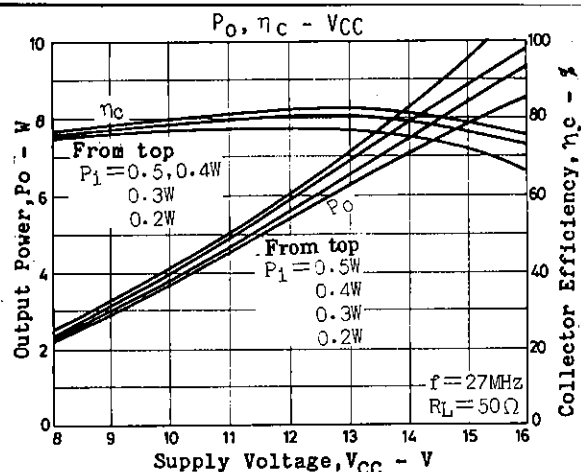
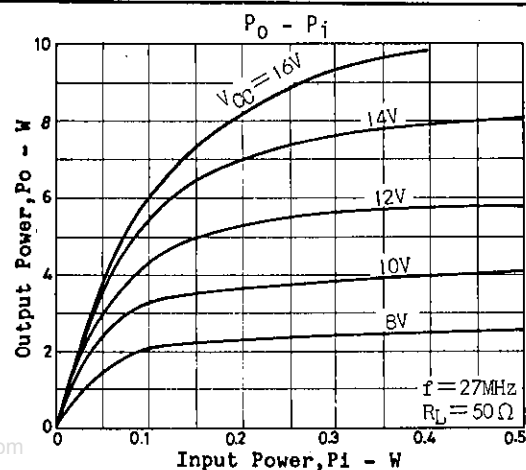
## 2SC2078 27MHz Output Power Test Circuit



Unit (Resistance :  $\Omega$ , Capacitance : F)

Coil data L1: 0.3mm tinned wire, 9 $\phi$  4T  
L2: 0.6mm tinned wire, 9 $\phi$  4T  
RFC 2.2uH





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