

2SC2078



2010A

MPN Epitaxial Planar Silicon Transistor

27MHz High Frequency Power Amp Applications

4E4570

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Value	Unit
Collector to Base Voltage	$V_{(CBO)}$	80	V
Collector to Emitter Voltage	$V_{(CEB)}$	75	V
Emitter to Base Voltage	$V_{(EB0)}$	5	V
Collector Current	I_C	3	A
Peak Collector Current	I_{CP}	5	A
Collector Dissipation	P_C	1.2	W
Junction Temperature	T_j	10	W
Storage Temperature	T_{stg}	-55 to +150	°C

$R_{BE}=150\Omega$

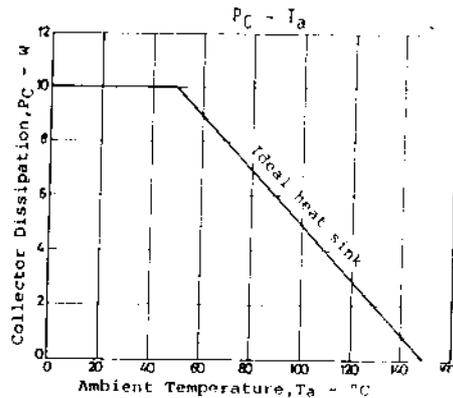
$T_c=50^\circ\text{C}$

Electrical Characteristics Characteristics at Ta=25°C

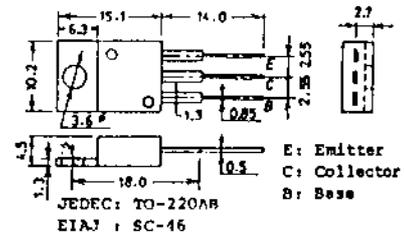
Parameter	Symbol	Test Conditions	min	typ	max	unit
Collector Cutoff Current	I_{CRO}	$V_{CB}=40V, I_E=0$			10	µA
Emitter Cutoff Current	I_{ERO}	$V_{EB}=4V, I_C=0$			10	µA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=0.5A$	25*		200*	
Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.1A$	100	150		MHz
Output Capacitance	c_{ob}	$V_{CB}=10V, f=1\text{MHz}$		45	60	pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=0.1A$	0.15		0.6	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=0.1A$	0.9		1.2	V
C-B Saturation Voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	80			V
C-E Saturation Voltage	$V_{(BR)CER}$	$I_C=1mA, R_{BE}=150\Omega$	75			V
E-B Saturation Voltage	$V_{(BR)EB0}$	$I_E=100\mu A, I_C=0$	5			V
[At specified test circuit]						
Output Power	P_o	$V_{CC}=12V, f=27\text{MHz}, P_i=0.2W$	4.0			W
Power Efficiency	η		60			%

*: 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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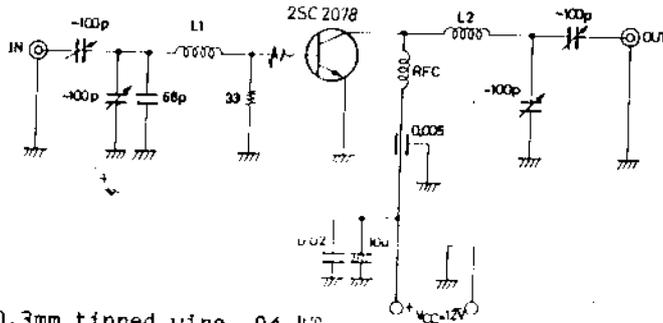
Case Outline 2010A (unit:mm)



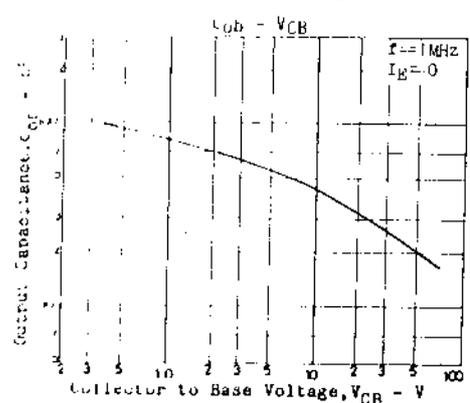
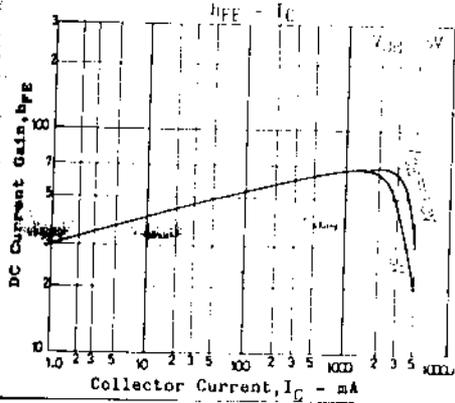
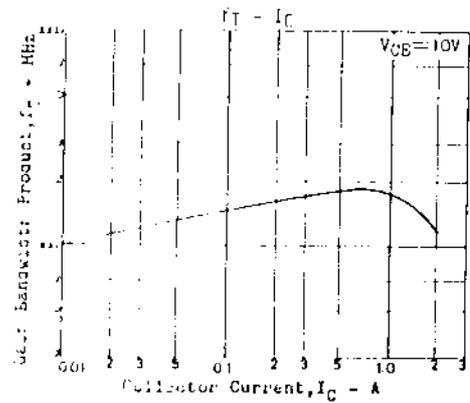
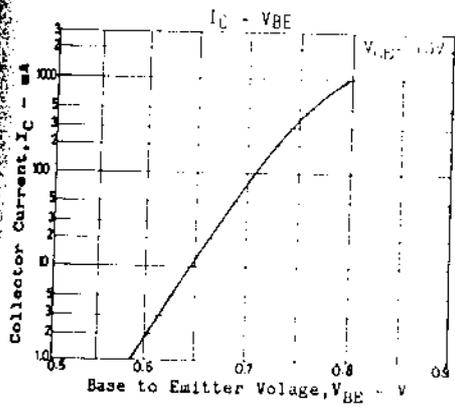
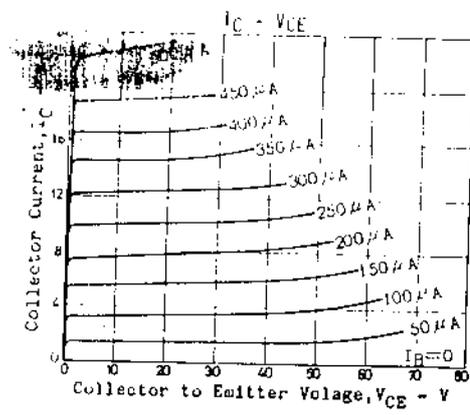
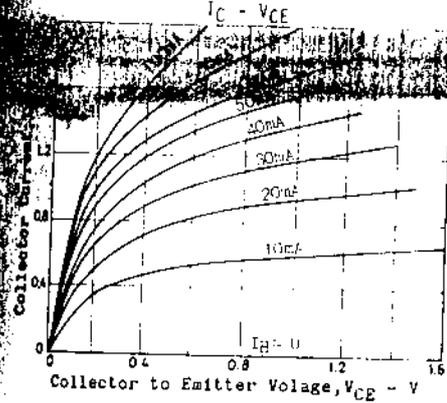
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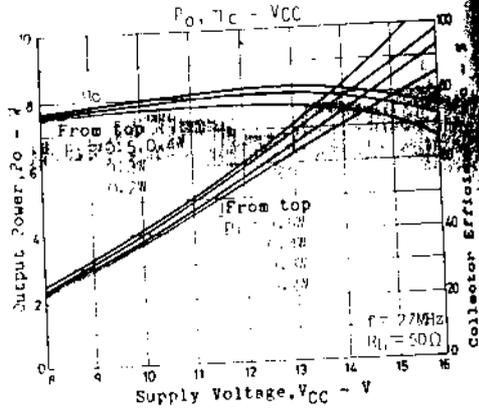
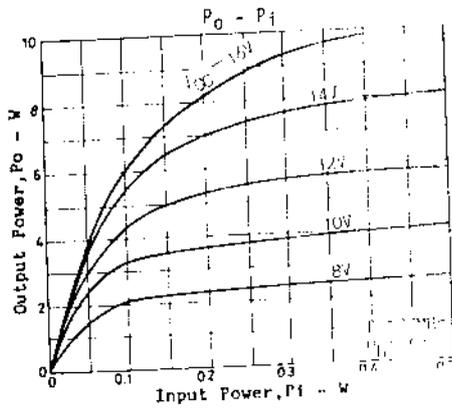
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2078 27MHz Output Power Test Circuit



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





Feature

- Hig
- Goo
- Sma

Absolut

- Colle
- Colle
- Emit
- Coll
- Coll
- Junc
- Stor

Electr

- Coll
- Emit
- C-B
- C-E
- E-B
- DC C
- Gair
- Reve
- C-B
- C-E
- Nois

•: The

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