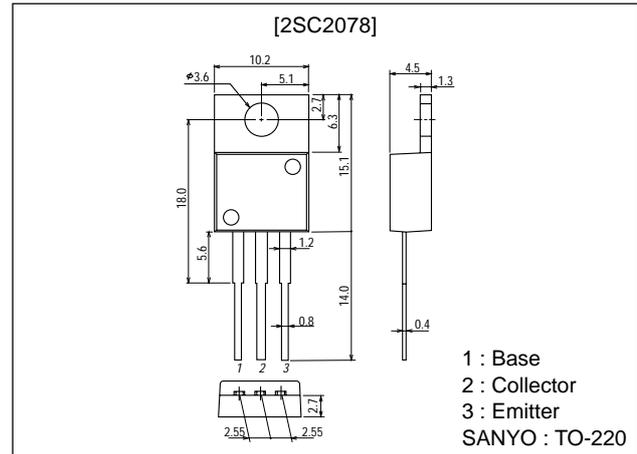


**2SC2078****27MHz RF Power Amplifier Applications****Package Dimensions**

unit:mm

2010C

**Specifications****Absolute Maximum Ratings** at  $T_a = 25^\circ\text{C}$ 

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  $T_a = 25^\circ\text{C}$ 

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

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

Continued on next page.

Rank	B	C	D	E
$h_{FE}$	25 to 50	40 to 80	60 to 120	100 to 200

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**SANYO Electric Co., Ltd. Semiconductor Company**

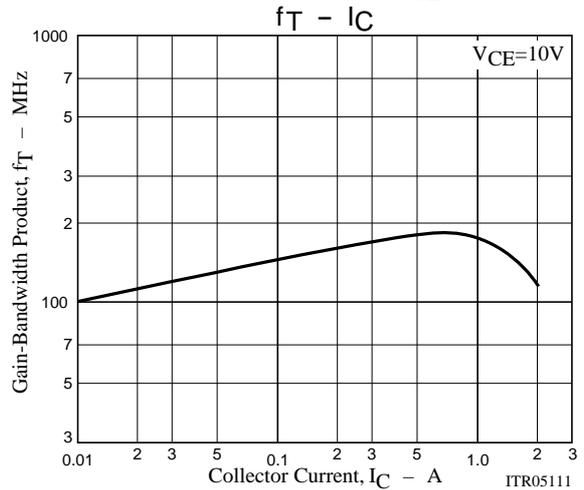
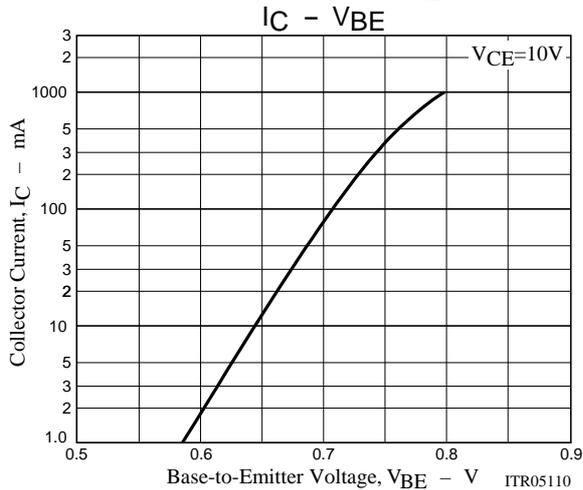
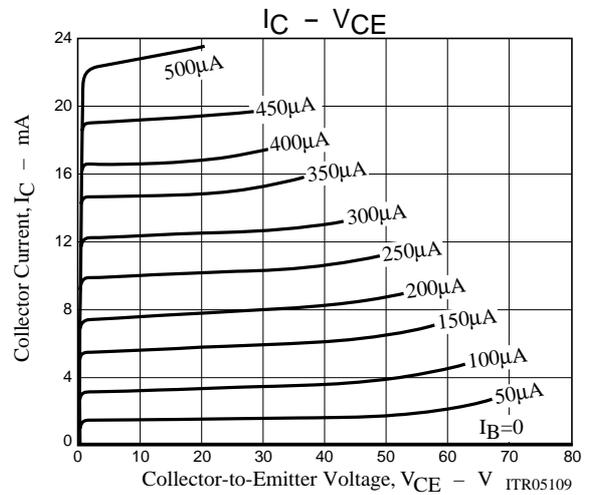
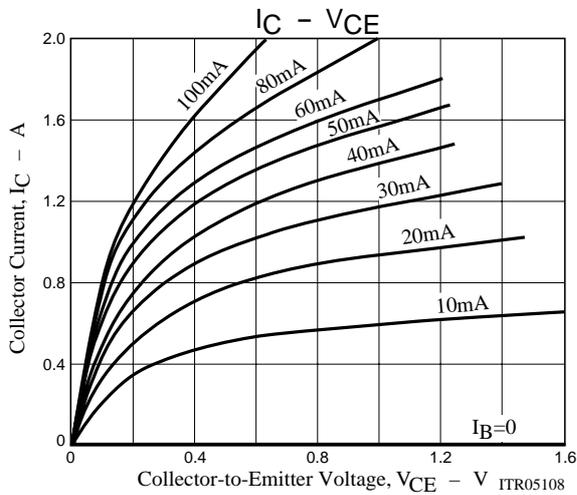
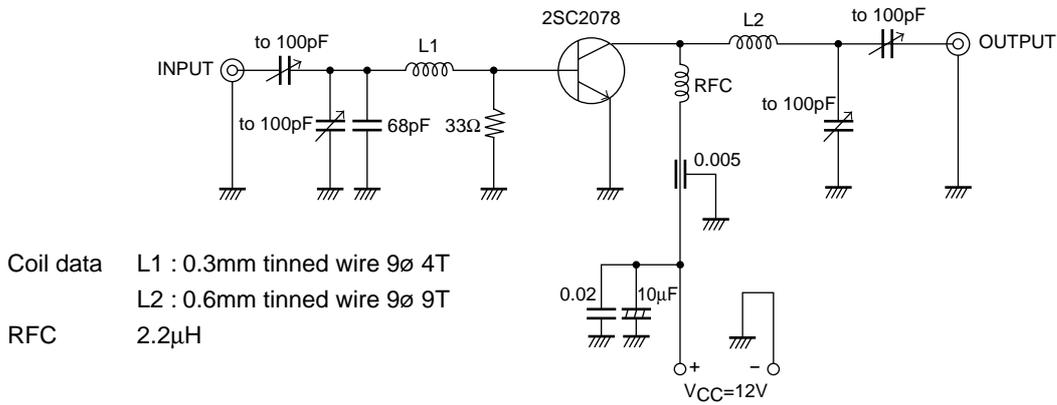
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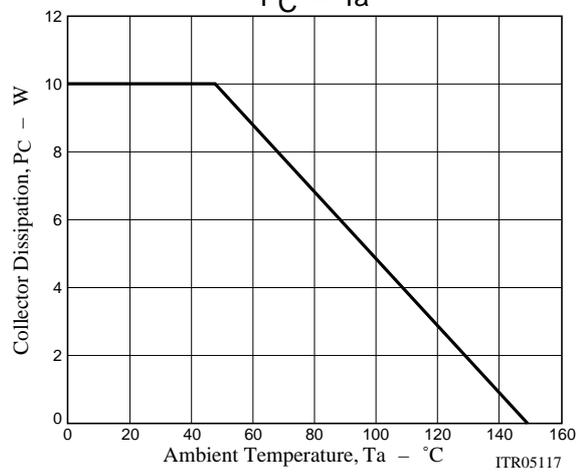
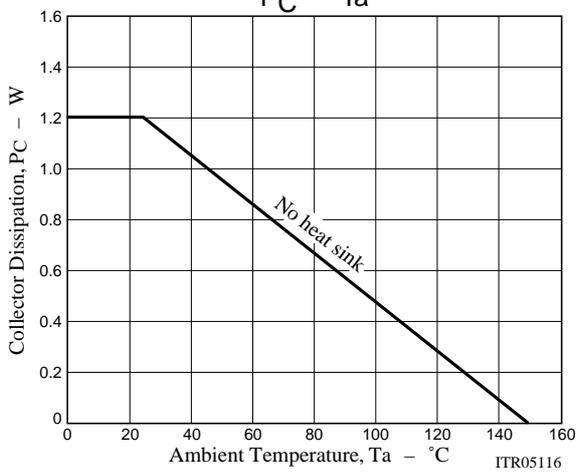
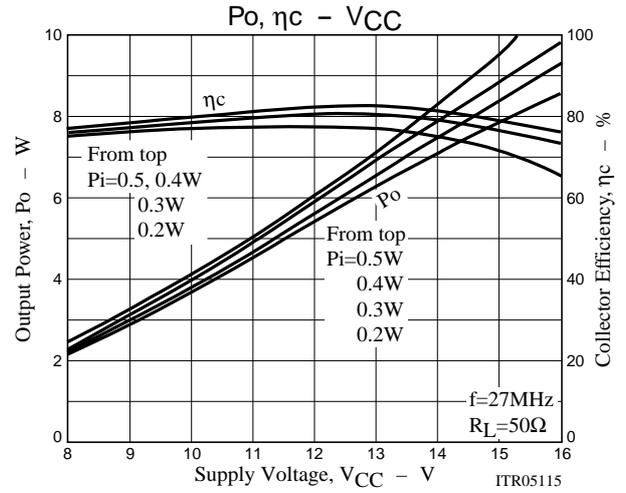
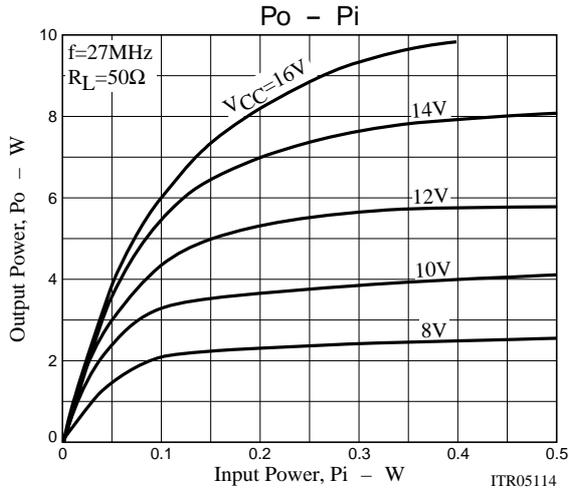
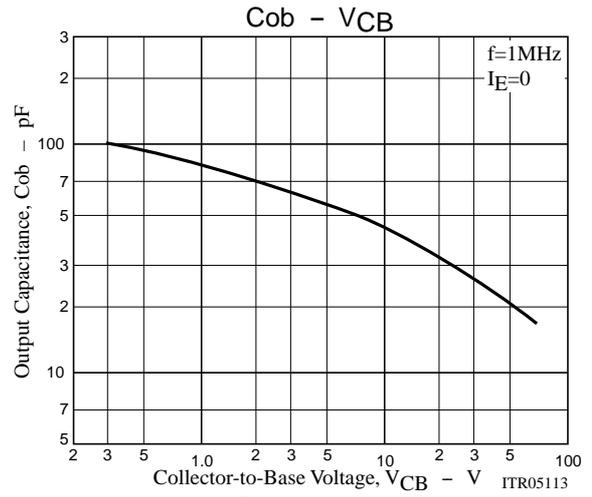
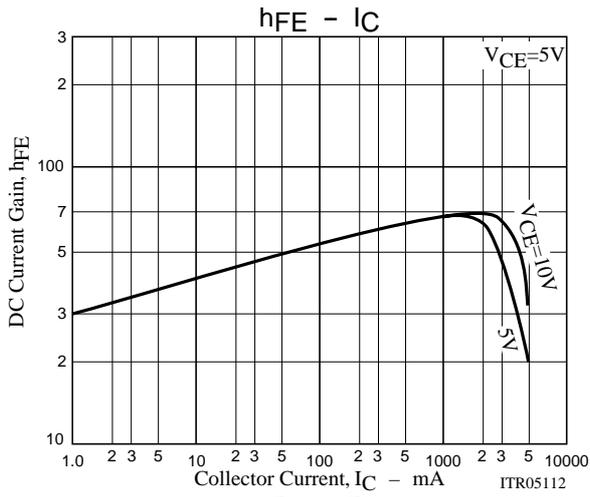
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=0.1A$		0.15	0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=0.1A$		0.9	1.2	V
Collector-to-Base Saturation 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



# 2SC2078



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