

Ordering number:EN3553

NPN Epitaxial Planar Silicon Transistor



**2SC4433**

**HF Amplifier Applications**

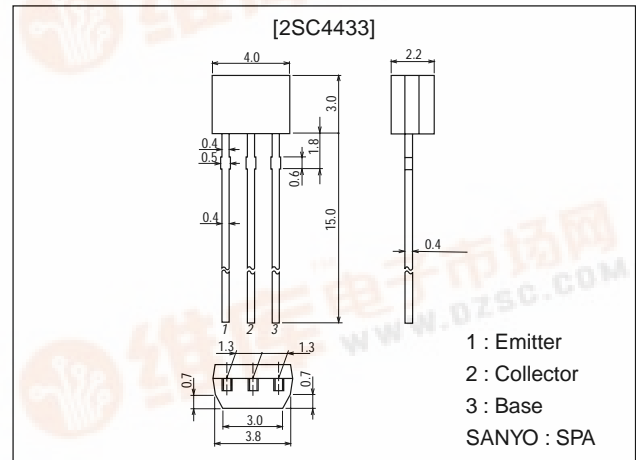
**Features**

- High power gain : PG=28dB typ (f=100MHz).
- High cutoff frequency :  $f_T=750\text{MHz}$  typ.
- Small  $C_{ob}$ ,  $C_{re}$ .

**Package Dimensions**

unit:mm

2033A



**Specifications**

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		40	V
Collector-to-Emitter Voltage	$V_{CEO}$		18	V
Emitter-to-Base Voltage	$V_{EBO}$		3	V
Collector Current	$I_C$		50	mA
Collector Dissipation	$P_C$		300	mW
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	$I_{CBO}$	$V_{CB}=18\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=2\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=5\text{mA}$	60*		320*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=5\text{mA}$		750		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		1.0	1.5	pF
Reverse transfer Capacitance	$C_{re}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		0.65		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.2	V
Base-to-Collector Time Constant	$r_{bb}C_C$	$V_{CE}=10\text{V}, I_C=5\text{mA}, f=31.9\text{MHz}$			25	ps
Power Gain	PG	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$		26		dB

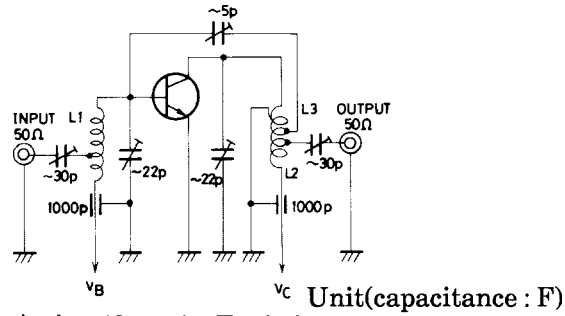
\* : The 2SC4433 is classified by 5mA  $h_{FE}$  as follows :

60	D	120	100	E	200	160	F	320
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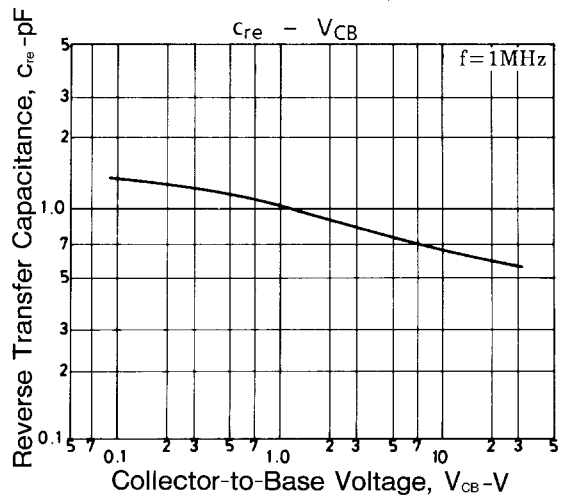
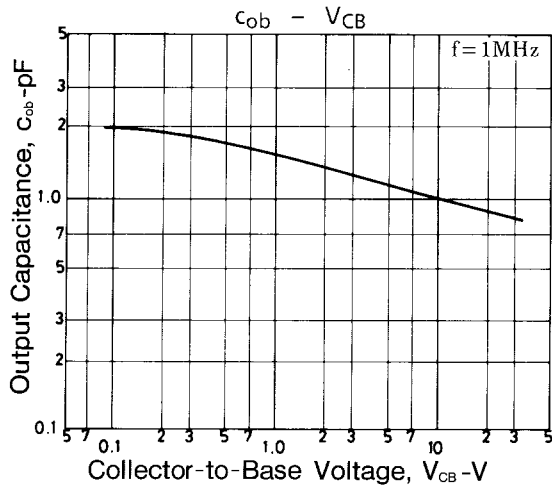
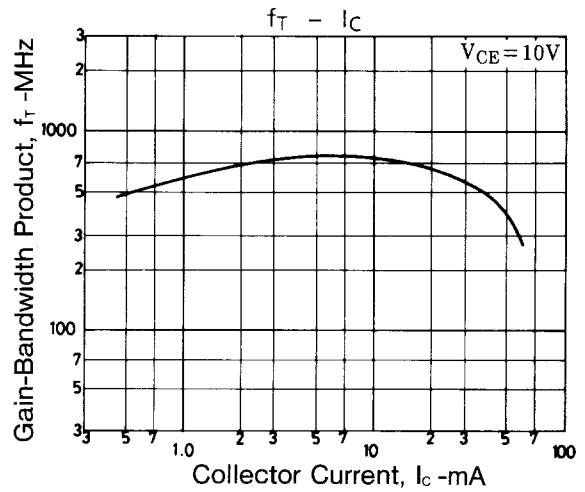
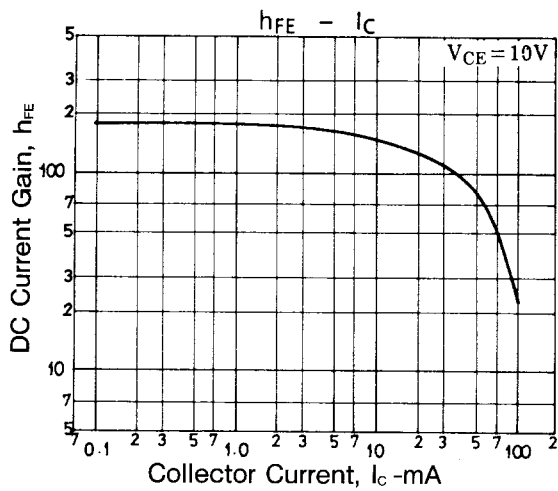
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## 2SC4433

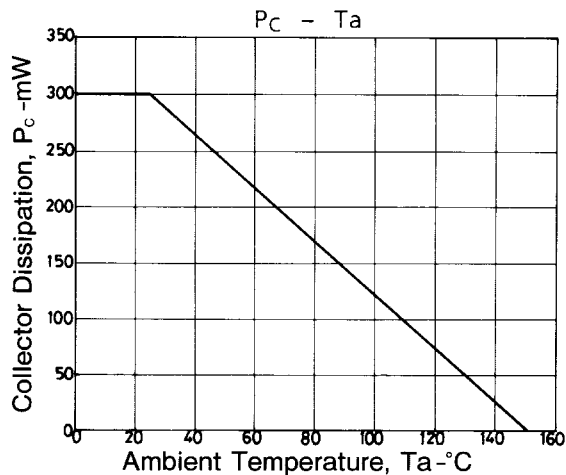
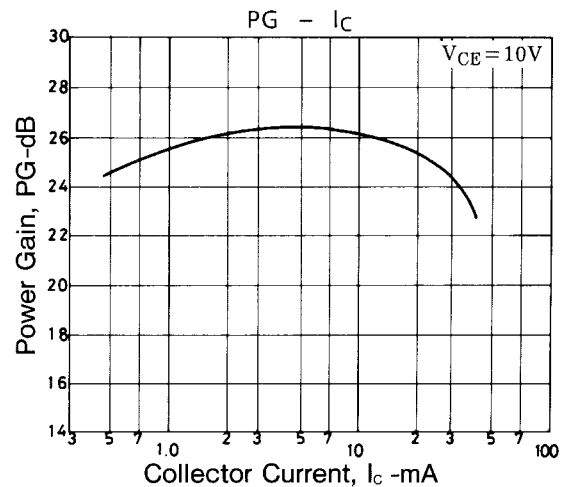
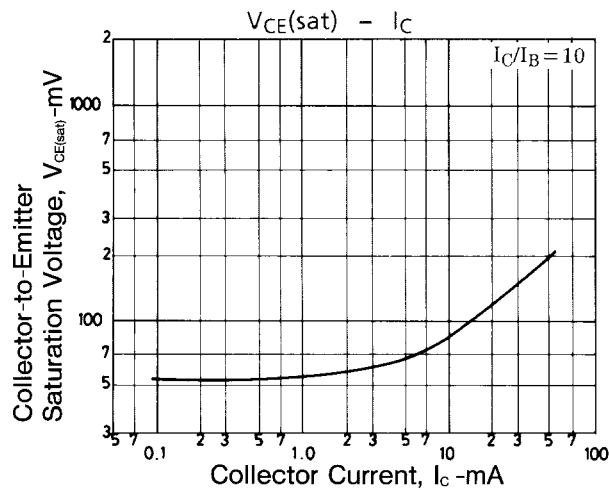
### PG Test Circuit



- L<sub>1</sub> : 1mmϕ plated wire, 10mmϕ 5T, pitch 15mm, tap: 2T from base side
- L<sub>2</sub> : 1mmϕ plated wire, 10mmϕ 7T, pitch 10mm, tap: 2T from V<sub>c</sub> side
- L<sub>3</sub> : 1mmϕ enamel wire, 10mmϕ 3T pitch 10mm



## 2SC4432



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