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NPN Epitaxial Planar Silicon Transistor

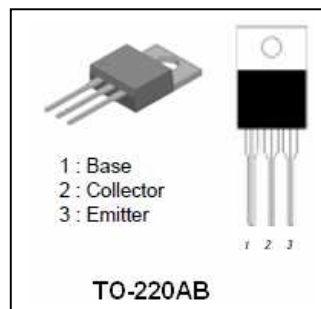
Application:

High frequency power amplifier

High Gain: $G_p \geq 12\text{dB}$

@ $V_{cc}=12\text{V}$, $f=27\text{MHz}$ $P_o=4\text{W}$

Package: TO-220AB



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

Item	Symbol	Ratings	Unit
Collector-to-Base Voltage	VCBO	80	V
Collector-to-Emitter Voltage	VCEO	35	V
Emitter-to-Base Voltage	VEBO	5	V
Collector Current	IC	3	A
Collector Current (Pulse)	ICP	5	A
	PC	1.2	W
		10	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55---125	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Item	Symbol	Test conditions	Ratings			Unit
			Min	Typ	Max	
Collector to base voltage	V(BR)CBO	$I_C=100\mu\text{A}$, $I_B=0$	80			V
Collector to emitter voltage	V(BR)CEO	$I_C=1\text{mA}$, $I_B=0$	35			V
Collector cutoff current	ICBO	$V_{CB}=40\text{V}$, $I_E=0$			10	μA
Emitter cutoff current	IEBO	$V_{EB}=4\text{V}$, $I_C=0$			10	μA
Collector to emitter saturation voltage	VCE(sat)	$I_C=1\text{A}$, $I_B=0.1\text{A}$		0.16	0.6	V
DC current transfer ratio	hFE	$V_{CE}=5\text{V}$, $I_C=0.5\text{A}$	40		200	*
Gain bandwidth product	fT	$V_{CE}=10\text{V}$, $I_C=0.1\text{A}$		150		MHz
Output capacitance	Cob	$V_{CB}=10\text{V}$, $f=1\text{MHz}$		45	60	pF
Output power	Po	$V_{CC}=12\text{V}$, $f=27\text{MHz}$	4.0			W
Power efficiency		$P_i=0.2\text{W}$	60			%

The 2SC2078 are classified by hFE as follows :

C: 40 to 80	D: 80 to 120	E: 100 to 200
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