

# SILICON HIGH SPEED POWER TRANSISTORS

## 2SA 1080

September 1979

### SILICON PNP RING EMITTER TRANSISTOR (RET)

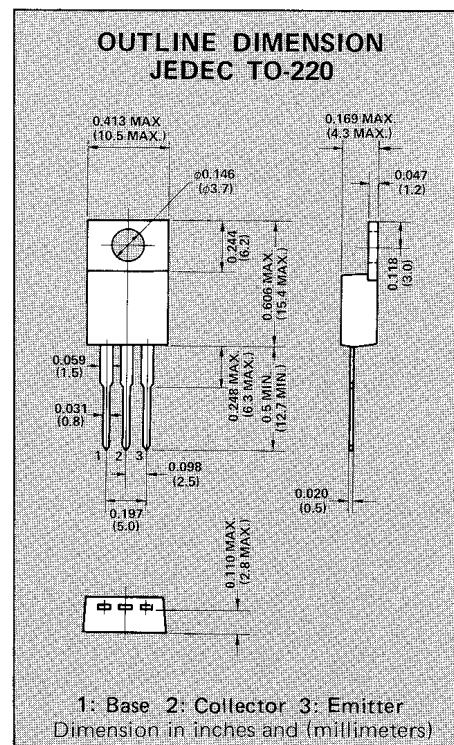
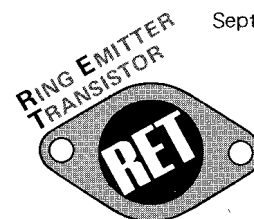
The 2SA 1080 is a silicon PNP M.C.-Head amplifier use transistor fabricated with Fujitsu's unique Ring Emitter Transistor (RET) technology. RET devices are constructed with multiple emitters connected through diffused balast resistors which provide uniform current density. This structure permits the design of M.C.-Head amplifier use transistors with exceptional frequency response along with excellent current gain linearity.

A NPN complement, 2SC 2530, is available.

- High  $f_T=30\text{MHz}$  (TYP.)
- Excellent Current Gain-Linearity

### ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector to Base Voltage	$V_{CBO}$	40	V
Emitter to Base Voltage	$V_{EBO}$	7	V
Collector to Emitter Voltage	$V_{CEO}$	40	V
Collector Current	$I_C$	0.5	A
Collector Power Dissipation ( $T_C = 25^\circ\text{C}$ )	$P_C$	20	W
Junction Temperature	$T_j$	+150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65~+150	$^\circ\text{C}$



### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 40\text{V}, I_E = 0$	—	—	100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 7\text{V}, I_C = 0$	—	—	100	nA
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 40\text{V}, I_B = 0$	—	—	500	nA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\text{nA}, I_E = 0$	40	—	—	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\text{nA}, I_C = 0$	7	—	—	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	40	—	—	V
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 10\text{mA} *$	100	—	350	—
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA} *$	—	0.025	0.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA} *$	—	0.65	1.0	V
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=10\text{MHz}$	—	30	—	MHz
Output Capacitance	$C_{ob}$	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$	—	65	—	pF

\* Pulsed: Pulse Width  $\leq 300\mu\text{s}$   
Duty Cycle  $\leq 6\%$