FUJITSU

SILICON HIGH SPEED POWER TRANSISTOR

2SA 1078

September 1979

SILICON PNP RING EMITTER TRANSISTOR (RET)

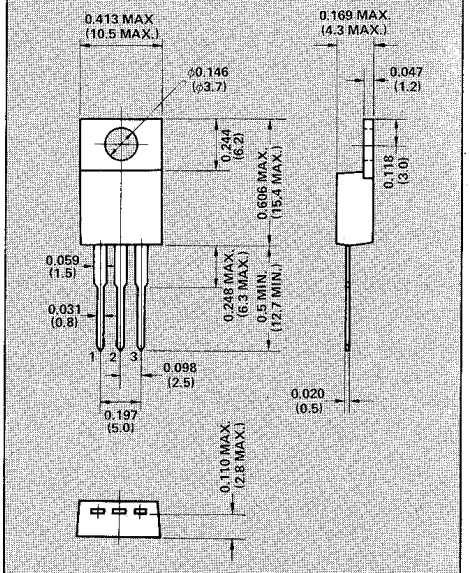
The 2SA1078 is a silicon PNP general purpose, medium power transistor fabricated with Fujitsu's unique Ring Emitter Transistor (RET) technology. RET devices are constructed with multiple emitters connected through diffused ballast resistors which provide uniform current density. This structure permits the design of medium power transistors with exceptional frequency response in high current applications.

The 2SA1078 is especially well-suited for High frequency power amplifiers, Audio power amplifiers and drivers.
A NPN complement, 2SC2528, is available.

- High f_T = 140 MHz (typ)
- Excellent Safe Operating Area
- Improved reverse Second-Breakdown Capability
- Excellent Current Gain Linearity

RING EMITTER TRANSISTOR RET

OUTLINE DIMENSION
JEDEC TO-220



1: Base 2: Collector 3: Emitter
Dimension in inches and (millimeters)

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	120	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector to Emitter Voltage	V_{CEO}	120	V
Collector Current	I_C	2	A
Collector Power Dissipation (T_C = 25°C)	P_C	25	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-65~+150	°C

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Collector Cutoff Current	I_{CBO}	V_{CB} = 120V, I_E = 0	–	–	1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	–	1	μA
Collector Cutoff Current	I_{CEO}	V_{CE} = 120V, I_B = 0	–	–	100	μA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 1μA, I_E = 0	120	–	–	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 1μA, I_C = 0	5	–	–	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	120	–	–	V
DC Current Gain	h_{FE1}	V_{CE} = 5V, I_C = 0.3A*	60	–	350	
DC Current Gain	h_{FE2}	V_{CE} = 5V, I_C = 0.7A*	50	–	–	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 0.7A, I_B = 0.07A*	–	0.45	1.0	V
Base to Emitter Voltage	V_{BE}	V_{CE} = 5V, I_C = 0.7A*	–	0.8	1.7	V
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=0.5A, f=10MHz	–	140	–	MHz
Output Capacitance	Cob	V_{CB}=20V, I_E=0, f=1MHz	–	100	–	pF

* Pulsed: Pulse Width ≦ 300μs
Duty Cycle ≦ 6%