FUJITSU

SILICON HIGH SPEED POWER TRANSISTOR

2SA 1075
2SA 1076

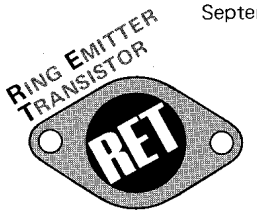
September 1979

SILICON PNP RING EMITTER TRANSISTOR (RET)

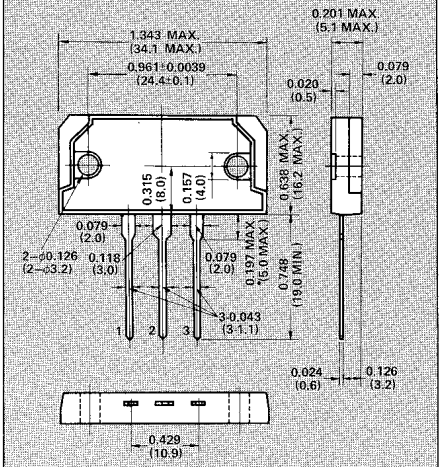
The 2SA 1075/2SA 1076 are silicon PNP general purpose, high power switching transistors fabricated with Fujitsu's unique Ring Emitter Transistor (RET) technology. RET devices are constructed with multiple emitters connected through diffused ballast resistors which provide uniform current density. This structure permits the design of high power transistors with exceptional switching characteristics and frequency response in high current applications.

The 2SA 1075/2SA 1076 are especially well-suited for High frequency power amplifiers, Audio power amplifiers, Switching regulators and DC-DC Converters. NPN complements, 2SC 2525/2SC 2526, are available.

- High f_T = 60 MHz (typ)
- Ultra fast switching speed
- Excellent Safe Operating Area
- Improved reverse Second-Breakdown Capability



OUTLINE DIMENSION
RM-60



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

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		2SA 1075	2SA 1076	
Collector to Base Voltage	V_{CBO}	120	160	V
Emitter to Base Voltage	V_{EBO}	7	7	V
Collector to Emitter Voltage	V_{CEO}	120	160	V
Collector Current	I_C	12	12	A
Collector Power Dissipation (T_C = 25°C)	P_C	120	120	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
			2SA 1075			2SA 1076			
			Min	Typ.	Max.	Min.	Typ.	max.	
Collector Cutoff Current	I_{CBO}	V_{CB} = 120V/160V, I_E = 0	—	—	50/—	—	—	—/50	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 7V, I_C = 0	—	—	50	—	—	50	μA
Collector Cutoff Current	I_{CEO}	V_{CE} = 120V/160V, R_{BE} = ∞	—	—	1/—	—	—	—/1	mA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 50μA, I_E = 0	120	—	—	160	—	—	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 50μA, I_C = 0	7	—	—	7	—	—	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	120	—	—	160	—	—	V
DC Current Gain	h_{FE1}	V_{CE} = 5V, I_C = 1A *	60	—	200	60	—	200	
DC Current Gain	h_{FE2}	V_{CE} = 5V, I_C = 7A *	40	—	—	40	—	—	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 5A, I_B = 0.5A *	—	0.9	1.8	—	0.9	1.8	V
Base to Emitter Voltage	V_{BE}	V_{CE} = 5V, I_C = 5A *	—	1.25	1.7	—	1.25	1.7	V
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_C = 1A, f = 10MHz	45	60	—	45	60	—	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	300	470	—	300	470	pF
Rise Time	t_r	I_C = 7.5A, R_L = 4Ω I_{B1} = −I_{B2} = 0.75A	—	0.15	—	—	0.15	—	μs
Storage Time	t_{stg}		—	0.5	—	—	0.5	—	μs
Fall Time	t_f		—	0.11	—	—	0.11	—	μs

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