FUJITSU MICROELECTRONICS

2SA1075 2SA1076

SILICON PNP RING EMITTER TRANSISTORS 12 AMP, 120 & 160 VOLT

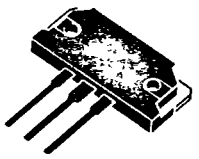
DESCRIPTION

The 2SA1075/2SA1076 are well-suited for high frequency power amplifiers, audio power amplifiers, switching regulators and DC-DC converters.

NPN complements, 2SC2525/2SC2526, are available.

FEATURES

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



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

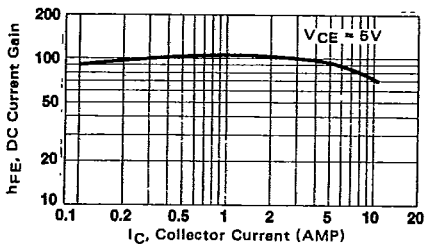
* Pulsed: Pulse width ≤ 300μs Duty cycle ≤ 6% 0%

PACKAGE TYPE: RM-60. See page 5-23 for dimensions.

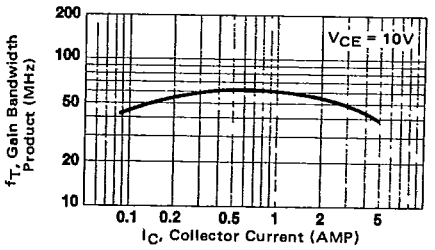
2SA1075/2SA1076

T-33-23

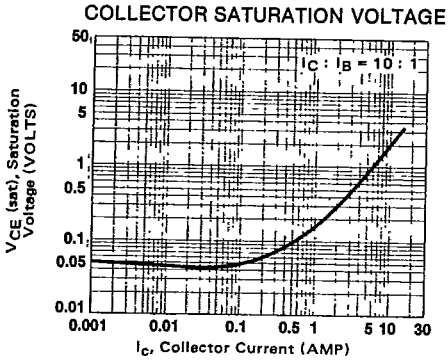
DC CURRENT GAIN



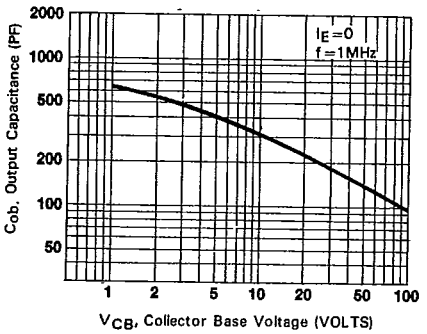
GAIN BANDWIDTH PRODUCT



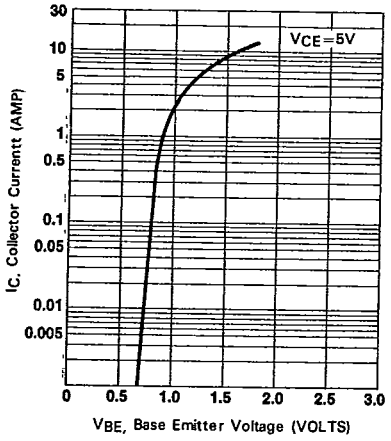
COLLECTOR SATURATION VOLTAGE



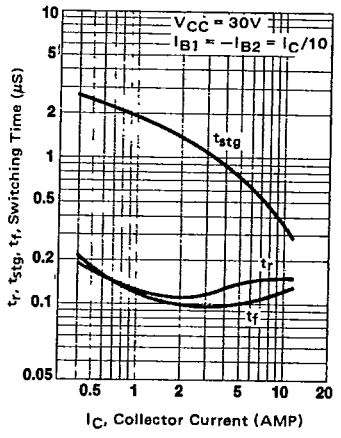
OUTPUT CAPACITANCE



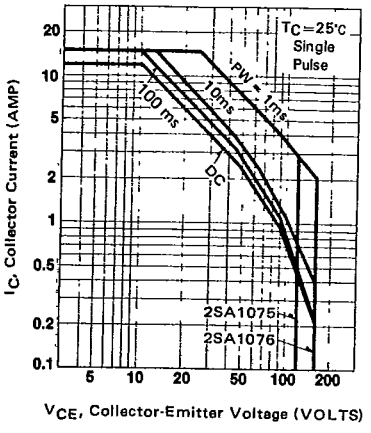
TRANSFER CHARACTERISTICS



SWITCHING TIME

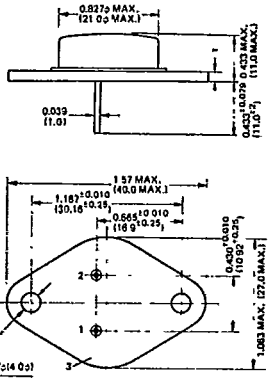


SAFE OPERATING AREAS



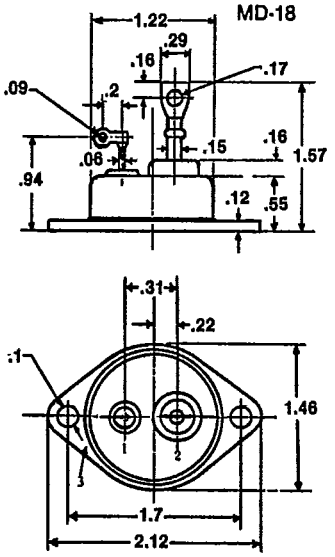
TRANSISTOR PACKAGING INFORMATION

JEDEC TO-3



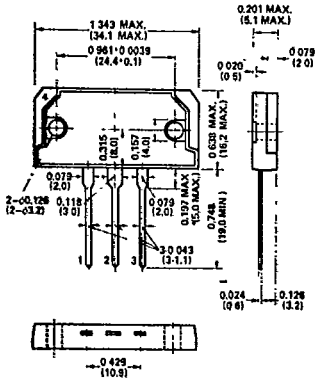
1: Base 2: Emitter 3: Collector (Case)
Dimension in inches and (millimeters)

MD-18



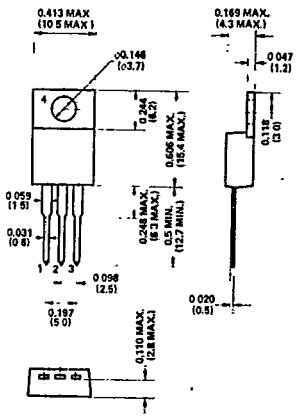
1: Base 2: Emitter 3: Collector

RM-60



1: Base 2: Collector 3: Emitter 4: Fin (Collector)
Dimension in inches and (millimeters)

JEDEC TO-220



1: Base 2: Collector 3: Emitter 4: Fin (Collector)
Dimension in inches and (millimeters)