

# FUJITSU MICROELECTRONICS

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## SILICON NPN EPITAXIAL DARLINGTON TRANSISTOR 5 AMP, 100 VOLT

2SD560

37C 01864

7-33-09 D

### DESCRIPTION

The 2SD560 is a low cost Darlington array which is perfectly suited for increasing TTL levels to drive print hammers, solenoids or motors.



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C)

Rating	Symbol	Condition	Value	Unit
Storage Temperature Range	T <sub>stg</sub>		-55 ~ +150	°C
Junction Temperature	T <sub>J</sub>		+150	°C
Collector-Base Voltage	V <sub>CB0</sub>		150	V
Emitter-Base Voltage	V <sub>EBO</sub>		7	V
Collector-Emitter Voltage	V <sub>CEO</sub>		100	V
Collector Current-Continuous	I <sub>C</sub>		5	A
Collector Current-Peak	I <sub>CP</sub>	P <sub>w</sub> ≤ 10 ms, D.R. ≤ 50 %	8	A
Base Current	I <sub>B</sub>		0.5	A
Collector Power Dissipation	P <sub>C</sub>	T <sub>a</sub> = 25 °C	1.5	W
	P <sub>C</sub>	T <sub>c</sub> = 25 °C	30	W

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)

Characteristic	Symbol	Test Condition	Limit			Unit
			Min.	Typ.	Max.	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 100 V, I <sub>E</sub> = 0	—	—	1	μA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> 3 A*	2000	4000	15000	—
	h <sub>FE2</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 5 A*	500	—	—	—
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 3 A, I <sub>B</sub> = 3 mA*	—	1.2	1.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>		—	1.6	2.0	V
Turn On Time	t <sub>on</sub>	I <sub>C</sub> = 3 A, I <sub>B1</sub> = -I <sub>B2</sub> = 3 mA R <sub>L</sub> = 16.7 Ω, V <sub>CC</sub> = 50 V Test Circuit	—	0.5	—	μs
Storage Time	t <sub>stg</sub>		—	1.0	—	μs
Fall Time	t <sub>f</sub>		—	1.0	—	μs

\* Pulsed P<sub>w</sub> ≤ 350 μs,  
Duty Ratio ≤ 2 %

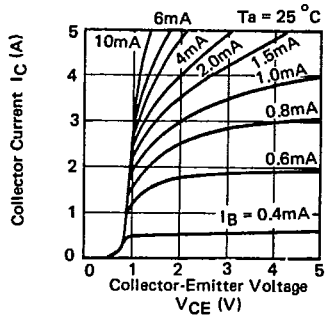
**PACKAGE TYPE:** TO-220. See page 5-23 for dimensions.

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2SD560

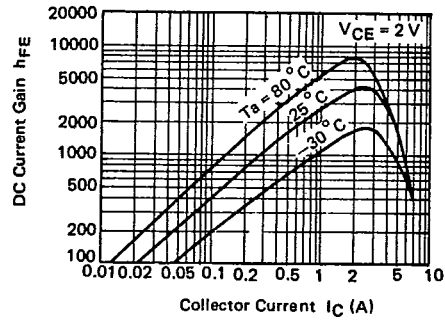
37C 01865

T-33-09 D

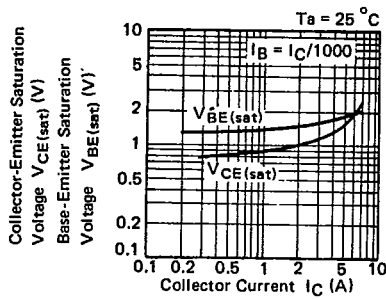
**OUTPUT CHARACTERISTICS**



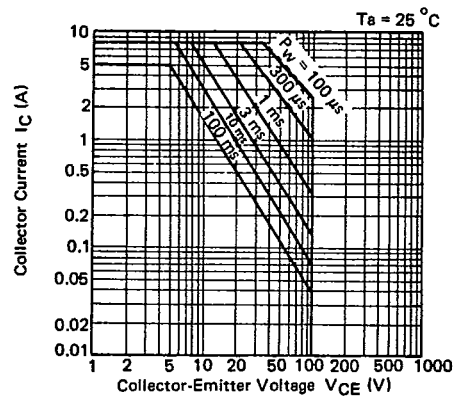
**DC CURRENT GAIN**



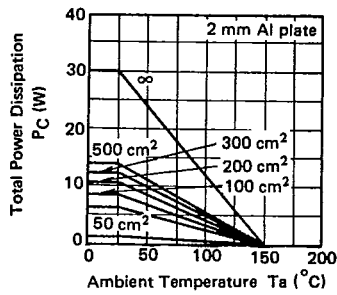
**SATURATION VOLTAGE**



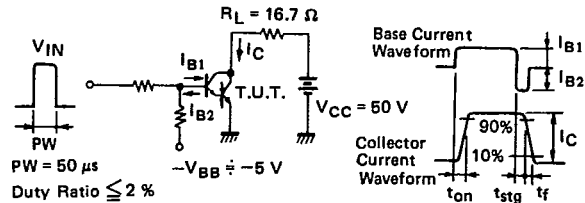
**SAFE OPERATING AREA**



**TOTAL POWER DISSIPATION**



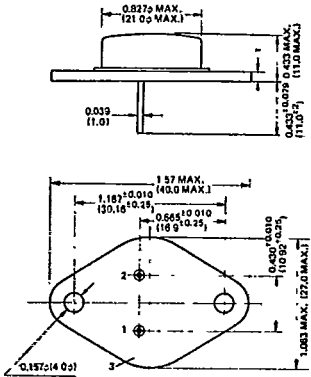
**SWITCHING TIME TEST CIRCUIT**



T-90-20

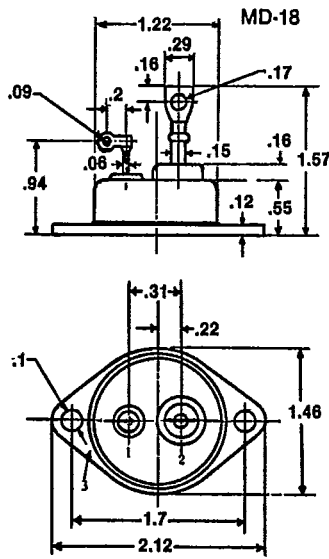
TRANSISTOR PACKAGING INFORMATION

JEDEC TO-3



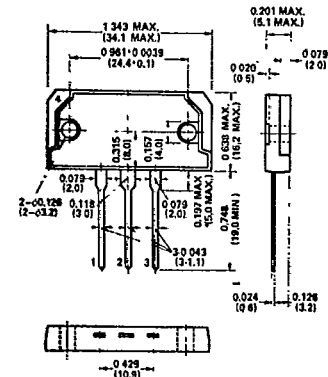
1: Base 2: Emitter 3: Collector (Case)  
 Dimension in inches and (millimeters)

MD-18



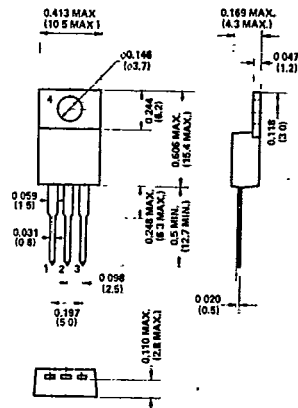
1: Base 2: Emitter 3: Collector

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)