

# FUJITSU MICROELECTRONICS

3749762 FUJITSU MICROELECTRONICS

## 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 ( $T_A = 25^\circ\text{C}$ )

Rating	Symbol	Condition	Value	Unit
Storage Temperature Range	$T_{stg}$		$-55 \sim +150$	$^\circ\text{C}$
Junction Temperature	$T_J$		+150	$^\circ\text{C}$
Collector-Base Voltage	$V_{CBO}$		150	V
Emitter-Base Voltage	$V_{EBO}$		7	V
Collector-Emitter Voltage	$V_{CEO}$		100	V
Collector Current-Continuous	$I_C$		5	A
Collector Current-Peak	$I_{CP}$	$P_W \leq 10 \text{ ms}$ , $D.R. \leq 50\%$	8	A
Base Current	$I_B$		0.5	A
Collector Power Dissipation	$P_C$	$T_A = 25^\circ\text{C}$	1.5	W
	$P_C$	$T_C = 25^\circ\text{C}$	30	W



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

Characteristic	Symbol	Test Condition	Limit			Unit
			Min.	Typ.	Max.	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 100 \text{ V}, I_E = 0$	—	—	1	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE} = 2 \text{ V}, I_C = 3 \text{ A}^*$	2000	4000	15000	—
	$h_{FE2}$	$V_{CE} = 2 \text{ V}, I_C = 5 \text{ A}^*$	500	—	—	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 3 \text{ A}, I_B = 3 \text{ mA}^*$	—	1.2	1.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		—	1.6	2.0	V
Turn On Time	$t_{on}$	$I_C = 3 \text{ A}, I_{B1} = -I_{B2} = 3 \text{ mA}$ $R_L = 16.7 \Omega, V_{CC} \div 50 \text{ V}$ Test Circuit	—	0.5	—	$\mu\text{s}$
Storage Time	$t_{stg}$		—	1.0	—	$\mu\text{s}$
Fall Time	$t_f$		—	1.0	—	$\mu\text{s}$

\* Pulsed  $P_W \leq 350 \mu\text{s}$ ,  
Duty Ratio  $\leq 2\%$

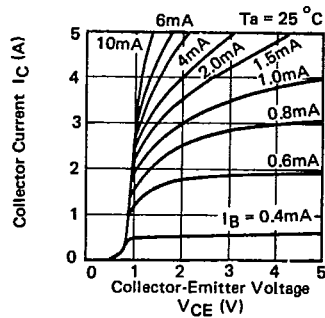
**PACKAGE TYPE:** TO-220. See page 5-23 for dimensions.

3749762 FUJITSU MICROELECTRONICS  
2SD560

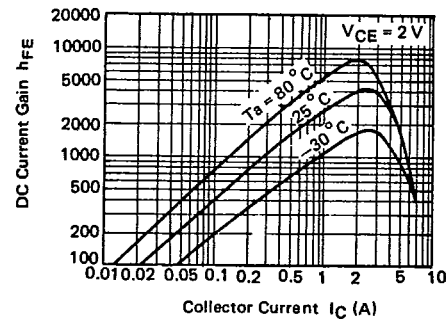
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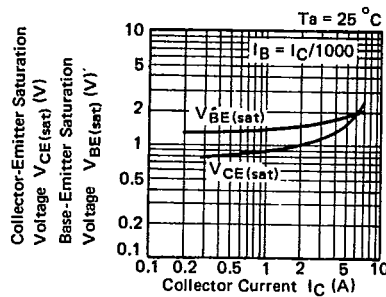
## OUTPUT CHARACTERISTICS



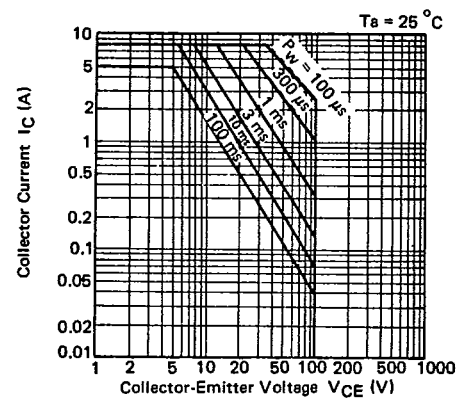
## DC CURRENT GAIN



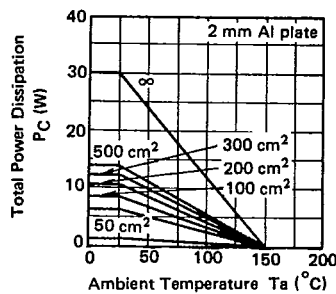
## SATURATION VOLTAGE



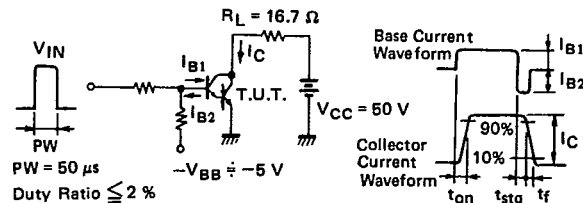
## SAFE OPERATING AREA



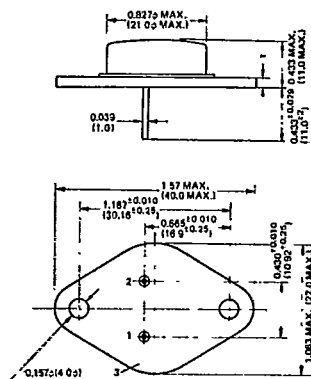
## TOTAL POWER DISSIPATION



## SWITCHING TIME TEST CIRCUIT

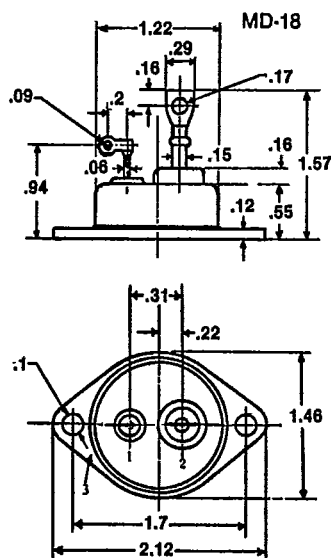


**JEDEC TO-3**

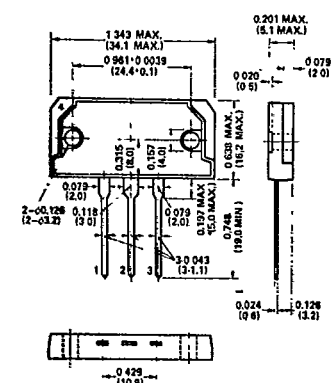


1: Base 2: Emitter 3: Collector (Case)  
Dimension in inches and (millimeters)

## MD-18

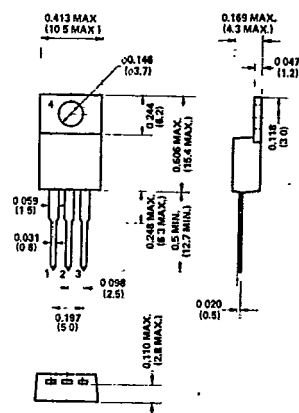


**1: Base 2: Emitter 3: Collector**

**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)