

SILICON RING EMITTER
DARLINGTON TRANSISTORS 10 AMP, 100 VOLT



ABSOLUTE MAXIMUM RATINGS

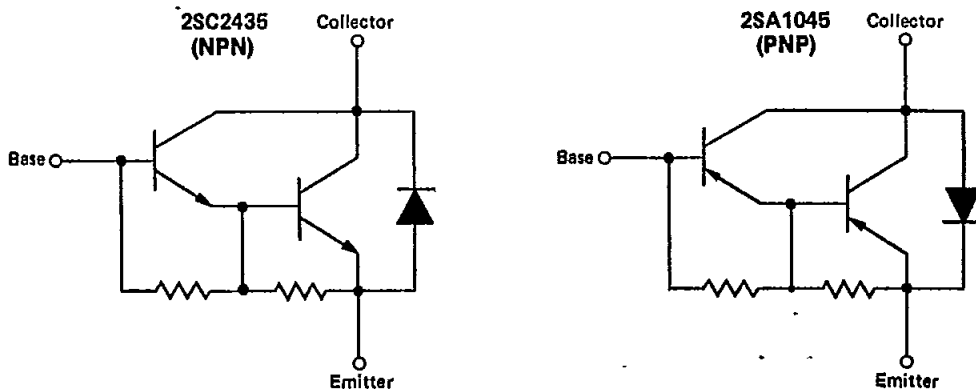
Rating	Symbol	2SC2435/2SA1045	Unit
Collector to Base Voltage	V_{CBO}	100	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector to Emitter Voltage	V_{CEO}	100	V
Collector Current	I_C	10	A
Base Current	I_B	0.4	A
Collector Power Dissipation ($T_C = 25^\circ\text{C}$)	P_C	100	W
Junction Temperature	T_j	+175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 ~ +175	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$	—	—	50	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	—	—	5	mA
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_L = 50\mu\text{A}, I_E = 0$	100	—	—	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5\text{mA}, I_C = 0$	5	—	—	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, R_{BE} = \infty$	100	—	—	V
DC Current Gain	h_{FE1}	$V_{CE} = 3\text{V}, I_C = 2\text{A}^*$	1000	4000	20000	
DC Current Gain	h_{FE2}	$V_{CE} = 3\text{V}, I_C = 10\text{A}^*$	100	—	—	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 10\text{mA}^*$	—	1.5	2.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$		—	2.0	3.0	V
Rise Time	t_r	$I_C = 7.5\text{A}, R_L = 4\Omega$	—	0.4	—	μs
Storage Time	t_{stg}	$I_B = -I_C = 30\text{mA}$	—	1.5	—	μs
Fall Time	t_f		—	0.4	—	μs

* Pulsed: Pulse Width $\leq 300\mu\text{s}$. Duty cycle $\leq 6\%$.

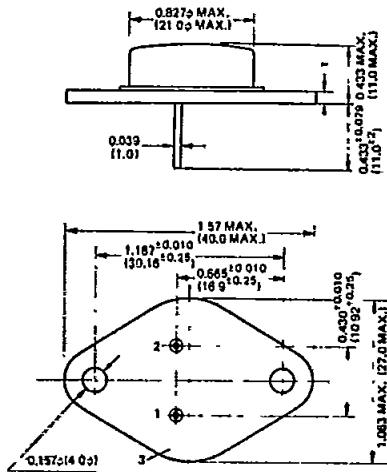
DARLINGTON CIRCUIT SCHEMATICS



PACKAGE TYPE: TO-3. See page 5-23 for dimensions.

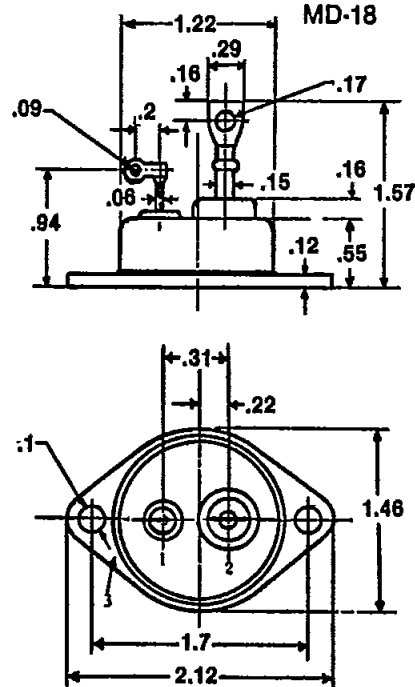
TRANSISTOR PACKAGING INFORMATION

JEDEC TO-3



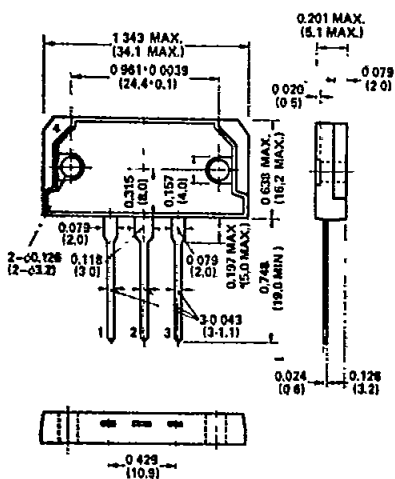
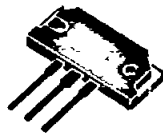
1: Base 2: Emitter 3: Collector (Case)
Dimension in inches and (millimeters)

MD-18



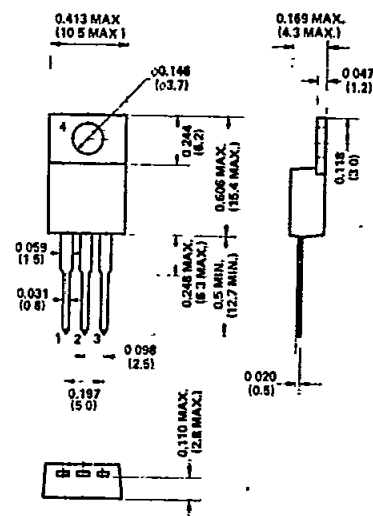
1: Base 2: Emitter 3: Collector

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)