

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage MD8001 MD8002 MD8003	V_{CE0}	40 50 60		Vdc
Collector Current — Continuous	I_C	30		mAdc
		One Die	Both Die Equal Power	
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	575 3.29	625 3.67	mW mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.8 10.3	2.5 14.3	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	One Die Max	Both Die Equal Power Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	97	70	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}(1)$	304	280	°C/W
		Junction to Ambient	Junction to Case	
Coupling Factor		84	44	%

(1) $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.

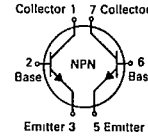
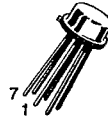
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage(2) ($I_C = 10 \text{ mAdc}, I_E = 0$)	$V_{(BR)CEO}$	40 50 60	— — —	— — —	Vdc
Collector Cutoff Current ($V_{CB} = 40 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	—	50	nAdc
Emitter Cutoff Current ($V_{EB} = 4.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	—	50	nAdc
ON CHARACTERISTICS					
DC Current Gain ($I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)	h_{FE}	100	200	—	—
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product(2) ($I_C = 5.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 100 \text{ MHz}$)	f_T	—	260	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$)	C_{obo}	—	2.6	—	pF
Input Capacitance ($V_{BE} = 2.0 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz}$)	C_{ibo}	—	2.3	—	pF
MATCHING CHARACTERISTICS					
Base-Emitter Voltage Differential ($I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)	$ V_{BE1} - V_{BE2} $	—	—	15	mVdc

(2) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

**MD8001
thru
MD8003**

CASE 654-07, STYLE 1



**DUAL
AMPLIFIER TRANSISTORS**

NPN SILICON

Refer to 2N2920 for graphs.