
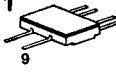



MAXIMUM RATINGS

Rating	Symbol	Value	Unit		
Collector-Emitter Voltage	V _{CEO}	30	Vdc		
Collector-Base Voltage	V _{CBO}	50	Vdc		
Emitter-Base Voltage	V _{EBO}	5.0	Vdc		
Collector Current — Continuous	I _C	600	mAdc		
		One Die	All Die		
Total Device Dissipation @ T _A = 25°C	P _D	600	650	mW	
		350	400		
		400	600		
		Derate above 25°C			mW/°C
		3.42	3.7		
2.0	2.28				
Total Device Dissipation @ T _C = 25°C	P _D	2.1	3.8	Watts	
		1.25	2.5		
		1.0	4.0		
		Derate above 25°C			mW/°C
		12	17.2		
7.15	14.3				
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-65 to +200	°C		

MD7001, F
MQ7001

MD7001
CASE 654-07, STYLE 1
DUAL 

MD7001F
CASE 610A-04, STYLE 1
DUAL 

MQ7001
CASE 607-04, STYLE 1
QUAD 

AMPLIFIER TRANSISTORS

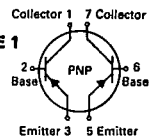
PNP SILICON

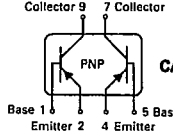
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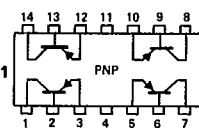
THERMAL CHARACTERISTICS

Characteristic	Symbol	One Die	All Die Equal Power	Unit	
Thermal Resistance, Junction to Case	R _{θJC}	83.3	58.3	°C/W	
		140	70		
		175	43.8		
		Thermal Resistance, Junction to Ambient			°C/W
R _{θJA} (1)	292	270			
500	438				
438	292				
		Junction to Ambient	Junction to Case		
Coupling Factor		85	40	%	
		75	0		
		57	0		
		(Q1-Q2)			0
		(Q1-Q3 or Q1-Q4)			

PIN CONNECTION DIAGRAMS

CASE 654-07, STYLE 1 

CASE 610A-04, STYLE 1 

CASE 607-04, STYLE 1 

(1) R_{θJA} is measured with the device soldered into a typical printed circuit board.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit	
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage(2) (I _C = 10 mAdc, I _B = 0)	V _{(BR)CEO}	30	—	—	Vdc	
Collector-Base Breakdown Voltage (I _C = 10 μAdc, I _E = 0)	V _{(BR)CBO}	50	—	—	Vdc	
Emitter-Base Breakdown Voltage (I _E = 10 μAdc, I _C = 0)	V _{(BR)EBO}	5.0	—	—	Vdc	
Collector Cutoff Current (V _{CB} = 40 Vdc, I _E = 0)	I _{CBO}	—	—	100	nAdc	
ON CHARACTERISTICS(2)						
DC Current Gain (I _C = 1.0 mAdc, V _{CE} = 10 Vdc) (I _C = 150 mAdc, V _{CE} = 10 Vdc) (I _C = 300 mAdc, V _{CE} = 10 Vdc)	h _{FE}	40	50	—	—	
		70	90	—		
		30	60	—		
		Collector-Emitter Saturation Voltage (I _C = 150 mAdc, I _B = 15 mAdc)		V _{CE(sat)}		—

T-29-27

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

Characteristic	Symbol	Min	Typ	Max	Unit
Base-Emitter Saturation Voltage ($I_C = 150 \text{ mA dc}$, $I_B = 15 \text{ mA dc}$)	$V_{BE(\text{sat})}$	—	0.88	1.3	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product(2) ($I_C = 20 \text{ mA dc}$, $V_{CE} = 20 \text{ Vdc}$, $f = 100 \text{ MHz}$)	f_T	200	320	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 100 \text{ kHz}$)	C_{obo}	—	5.8	8.0	pF
Input Capacitance ($V_{BE} = 2.0 \text{ Vdc}$, $I_C = 0$, $f = 100 \text{ kHz}$)	C_{ibo}	—	16	30	pF

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