

MAXIMUM RATINGS

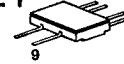
Rating	Symbol	Value		Unit		
Collector-Emitter Voltage	V _{CEO}	30		V _{dc}		
Collector-Base Voltage	V _{CBO}	50		V _{dc}		
Emitter-Base Voltage	V _{EBO}	5.0		V _{dc}		
Collector Current — Continuous	I _C	600		mA _{dc}		
		One Die	All Die			
Total Device Dissipation @ T _A = 25°C MD7001 MD7001F MQ7001 Derate above 25°C MD7001 MD7001F MQ7001	P _D	600	650	mW		
		350	400	mW/°C		
		400	600			
		3.42	3.7			
		2.0	2.28			
		2.28	3.42			
		Total Device Dissipation @ T _C = 25°C MD7001 MD7001F MQ7001 Derate above 25°C MD7001 MD7001F MQ7001	P _D		2.1	3.8
				1.25	2.5	mW/°C
1.0	4.0					
12	17.2					
7.15	14.3					
5.71	22.8					
Operating and Storage Junction Temperature Range				T _J , T _{stg}	−65 to +200	

THERMAL CHARACTERISTICS

Characteristic	Symbol	One Die	All Die Equal Power	Unit
Thermal Resistance, Junction to Case MD7001 MD7001F MQ7001	$R_{\theta JC}$	83.3 140 175	58.3 70 43.8	$^{\circ}\text{C/W}$
Thermal Resistance, Junction to Ambient MD7001 MD7001F MQ7001	$R_{\theta JA}(1)$	292 500 438	270 438 292	$^{\circ}\text{C/W}$
		Junction to Ambient	Junction to Case	
Coupling Factor MD7001 MD7001F MQ7001 (Q1-Q2) MQ7001 (Q1-Q3 or Q1-Q4)		85 75 57 55	40 0 0 0	%

(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) ($I_C = 10\text{ mA dc}, I_B = 0$)	$V_{(BR)CEO}$	30	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 10\text{ }\mu\text{A dc}, I_E = 0$)	$V_{(BR)CBO}$	50	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A dc}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 40\text{ Vdc}, I_E = 0$)	I_{CBO}	—	—	100	nA dc
ON CHARACTERISTICS(2)					
DC Current Gain ($I_C = 1.0\text{ mA dc}, V_{CE} = 10\text{ Vdc}$) ($I_C = 150\text{ mA dc}, V_{CE} = 10\text{ Vdc}$) ($I_C = 300\text{ mA dc}, V_{CE} = 10\text{ Vdc}$)	h_{FE}	40	50	—	—
		70	90	—	
		30	60	—	
		—	—	—	
Collector-Emitter Saturation Voltage ($I_C = 150\text{ mA dc}, I_B = 15\text{ mA dc}$)	$V_{CE(sat)}$	—	0.25	0.4	Vdc

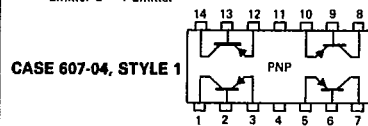
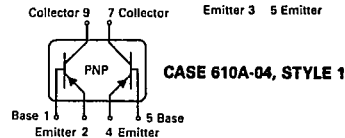
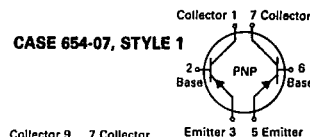
MD7001, F
MQ7001MD7001
CASE 654-07, STYLE 1
DUALMD7001F
CASE 610A-04, STYLE 1
DUALMQ7001
CASE 607-04, STYLE 1
QUAD

AMPLIFIER TRANSISTORS

PNP SILICON

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PIN CONNECTION DIAGRAMS



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 ($I_C = 150\text{ mAdc}$, $I_B = 15\text{ mAdc}$)	$V_{BE(sat)}$	—	0.88	1.3	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product(2) ($I_C = 20\text{ mAdc}$, $V_{CE} = 20\text{ Vdc}$, $f = 100\text{ MHz}$)	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 $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$.