MPQ7091
MPQ7092
MPQ7093

CASE 646-05, STYLE 1
TO-116

QUAD
AMPLIFIER TRANSISTOR

PNP SILICON

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Refer to MPQ7051 for graphs.

MAXIMUM RATINGS

Rating	Symbol	MPQ7091	MPQ7092	MPQ7093	Unit
Collector-Emitter Voltage	V_{CEO}	150	200	250	Vdc
Collector-Base Voltage	V_{CBO}	150	200	250	Vdc
Emitter-Base Voltage	V_{EBO}	5.0			Vdc
Collector Current — Continuous	I_C	500			mAdc
		Each Die	**Four Die Equal Power**		
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	750 5.98	1700 13.6		mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.25 10	3.2 25.6		Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150			°C

THERMAL CHARACTERISTICS

Characteristic		Junction to Case	Junction to Ambient	Unit
Thermal Resistance	Each Die	100	167	°C/W
	Effective, 4 Die	39	73.5	°C/W
Coupling Factors	Q1-Q4 or Q2-Q3	46	56	%
	Q1-Q2 or Q3-Q4	5.0	10	%

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 1.0 mAdc, I_B = 0)		$V_{(BR)CEO}$				Vdc
	MPQ7091		150	—	—	
	MPQ7092		200	—	—	
	MPQ7093		250	—	—	
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)		$V_{(BR)CBO}$				Vdc
	MPQ7091		150	—	—	
	MPQ7092		200	—	—	
	MPQ7093		250	—	—	
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)		$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current		I_{CBO}				nAdc
(V_{CB} = 120 Vdc, I_E = 0)	MPQ7091		—	—	250	
(V_{CB} = 150 Vdc, I_E = 0)	MPQ7092		—	—	250	
(V_{CB} = 180 Vdc, I_E = 0)	MPQ7093		—	—	250	
Emitter Cutoff Current (V_{BE} = 3.0 Vdc, I_C = 0)		I_{EBO}	—	—	100	nAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc)		h_{FE}	25	40	—	—
(I_C = 10 mAdc, V_{CE} = 10 Vdc)			35	55	—	
(I_C = 30 mAdc, V_{CE} = 10 Vdc)			25	50	—	
Collector-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		$V_{CE(sat)}$	—	0.3	0.5	Vdc
Base-Emitter Saturation Voltage (I_C = 20 mAdc, I_B = 2.0 mAdc)		$V_{BE(sat)}$	—	0.7	0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain — Bandwidth Product (I_C = 10 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)		f_T	50	70	—	MHz
Output Capacitance (V_{CB} = 20 Vdc, I_E = 0, f = 1.0 MHz)		C_{obo}	—	3.0	5.0	pF
Input Capacitance (V_{EB} = 3.0 Vdc, I_C = 0, f = 1.0 MHz)		C_{ibo}	—	60	75	pF

MQ982 For Specifications, See MD982 Data.