

MHQ3798 MHQ3799

CASE 632-02, STYLE 1
TO-116

QUAD
AMPLIFIER TRANSISTOR

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	MHQ3798	MHQ3799	Unit
Collector-Emitter Voltage	V_{CE0}	40	60	Vdc
Collector-Base Voltage	V_{CBO}	60		Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	50		mAdc
		Each Transistor	Total Device	
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.5 2.86	1.5 8.58	Watts mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 5.71	3.5 20	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$

Refer to 2N3810 for graphs.

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage(1) ($I_C = 10 \text{ mAdc}, I_B = 0$)	$V_{(BR)CEO}$	40 60	— —	— —	Vdc
	MHQ3798 MHQ3799				
Collector-Base Breakdown Voltage ($I_C = 10 \text{ mAdc}, I_E = 0$)	$V_{(BR)CBO}$	60	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10 \text{ mAdc}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 50 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	—	10	nAdc
Emitter Cutoff Current ($V_{BE} = 3.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	—	20	nAdc

ON CHARACTERISTICS

DC Current Gain(1) ($I_C = 10 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ3798 MHQ3799	h_{FE}	100 225	— —	— —	—
($I_C = 100 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ3798 MHQ3799		150 300	— —	— —	
($I_C = 500 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ3798 MHQ3799		150 300	— —	— —	
($I_C = 10 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ3798 MHQ3799		125 250	— —	— —	
Collector-Emitter Saturation Voltage ($I_C = 100 \text{ mAdc}, I_B = 10 \text{ mAdc}$) ($I_C = 1.0 \text{ mAdc}, I_B = 100 \text{ mAdc}$)		$V_{CE(sat)}$	— —	— —	0.2 0.25	Vdc
Base-Emitter Saturation Voltage ($I_C = 100 \text{ mAdc}, I_B = 10 \text{ mAdc}$) ($I_C = 1.0 \text{ mAdc}, I_B = 100 \text{ mAdc}$)		$V_{BE(sat)}$	— —	— —	0.7 0.8	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ($I_C = 1.0 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}, f = 100 \text{ MHz}$)		f_T	—	130	—	MHz
Output Capacitance ($V_{CB} = 5.0 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$)		C_{obo}	—	2.3	—	pF
Input Capacitance ($V_{BE} = 0.5 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz}$)		C_{ibo}	—	5.5	—	pF
Noise Figure ($I_C = 100 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, R_S = 3.0 \text{ kohms}, f = 10 \text{ Hz to } 15.7 \text{ kHz}$)	MHQ3798 MHQ3799	NF	— —	2.5 1.5	— —	dB

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