

MHQ6100,A

CASE 632-02, TYPE 2
TO-116

QUAD
COMPLEMENTARY PAIR
TRANSISTOR

NPN/PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	MHQ6100	MHQ6100A	Unit
Collector-Emitter Voltage	V_{CEO}	40	45	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 2N2919 for NPN graphs.
Refer to 2N3810 for PNP graphs.

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage(1) ($I_C = 10 \text{ mAdc}, I_B = 0$)	MHQ6100 MHQ6100A	$V_{(BR)CEO}$	40 45	— —	Vdc
Collector-Base Breakdown Voltage ($I_C = 10 \mu\text{Adc}, I_E = 0$)		$V_{(BR)CBO}$	60	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10 \mu\text{Adc}, I_C = 0$)		$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 50 \text{ Vdc}, I_E = 0$)		I_{CBO}	—	10	nAdc

ON CHARACTERISTICS

DC Current Gain(1) ($I_C = 100 \mu\text{Adc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ6100 MHQ6100A	h_{FE}	50 100	— —	—
($I_C = 500 \mu\text{Adc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ6100 MHQ6100A		75 150	— —	
($I_C = 1.0 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ6100 MHQ6100A		75 150	— —	
($I_C = 10 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$)	MHQ6100 MHQ6100A		60 125	— —	
Collector-Emitter Saturation Voltage ($I_C = 1.0 \text{ mAdc}, I_B = 0.1 \text{ mAdc}$)		$V_{CE(sat)}$	—	—	0.25 Vdc
Base-Emitter Saturation Voltage ($I_C = 1.0 \text{ mAdc}, I_B = 0.1 \text{ mAdc}$)		$V_{BE(sat)}$	—	—	0.8 Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ($I_C = 500 \mu\text{Adc}, V_{CE} = 5.0 \text{ Vdc}, f = 20 \text{ MHz}$)	NPN PNP	f_T	— —	175 130	— —	MHz
Output Capacitance ($V_{CB} = 5.0 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$)	NPN PNP	C_{obo}	— —	4.5 2.3	— —	pF
Input Capacitance ($V_{BE} = 0.5 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz}$)	NPN PNP	C_{ibo}	— —	6.0 5.5	— —	pF

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