MHQ918

CASE 632-02, STYLE 1
TO-116

QUAD
AMPLIFIER TRANSISTOR

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V_{CEO}	15		Vdc
Collector-Base Voltage	V_{CBO}	30		Vdc
Emitter-Base Voltage	V_{EBO}	3.0		Vdc
Collector Current — Continuous	I_C	50		mAdc
		Each Transistor	Total Device	
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.65 3.72	1.9 10.88	Watts mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.3 7.43	4.6 26.3	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

Refer to MD918 for graphs.

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage(1) (I_C = 3.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	15	—	—	Vdc
Collector-Base Breakdown Voltage (I_C = 1.0 μAdc, I_E = 0)	$V_{(BR)CBO}$	30	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)	$V_{(BR)EBO}$	3.0	—	—	Vdc
Collector Cutoff Current (V_{CB} = 15 Vdc, I_E = 0)	I_{CBO}	—	—	10	nAdc
ON CHARACTERISTICS(1)					
DC Current Gain (I_C = 0.1 mAdc, V_{CE} = 1.0 Vdc) (I_C = 3.0 mAdc, V_{CE} = 1.0 Vdc) (I_C = 10 mAdc, V_{CE} = 1.0 Vdc)	h_{FE}	 — 20 —	 110 80 50	 — — —	—
Collector-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1.0 mAdc)	$V_{CE(sat)}$	—	0.11	0.4	Vdc
Base-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1.0 mAdc)	$V_{BE(sat)}$	—	0.84	1.0	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product (I_C = 4.0 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	f_T	600	850	—	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 140 kHz)	C_{obo}	—	0.75	2.0	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 140 kHz)	C_{ibo}	—	1.4	2.5	pF
Noise Figure (I_C = 1.0 mAdc, V_{CE} = 6.0 Vdc, R_S = 400 Ohms, f = 60 MHz)	NF	—	4.0	6.0	dB

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.