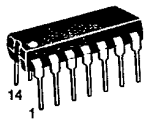
T-43-25

MPQ918

CASE 646-06, STYLE 1
TO-116



QUAD AMPLIFIER TRANSISTOR

NPN SILICON

Refer to MD918 for graphs.

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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	Four Transistors Equal Power	
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	500 4.0	900 7.2	mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	6.7 0.825	2.4 19.2	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 Effective, 4 Die	151 52	250 134	°C/W °C/W
Coupling Factors	Q1-Q4 or Q2-Q3 Q1-Q2 or Q3-Q4	34 2.0	70 26	% %

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 = 1 MHz)	C_{obo}	—	0.75	1.7	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 1 MHz)	C_{ibo}	—	1.1	2.0	pF
Noise Figure (I_C = 1.0 mAdc, V_{CE} = 6.0 Vdc, R_G = 400 Ohms, f = 60 MHz)	NF	—	4.0	6.0	dB

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