

MHQ2906 MHQ2907 MPQ2906* MPQ2907*

**MHQ2906, MHQ2907
CASE 632-02, STYLE 1**

**MPQ2906
MPQ2907
CASE 646-05, STYLE 1
TO-116**

**QUAD
GENERAL PURPOSE
TRANSISTOR**

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V_{CE0}	40		Vdc
Collector-Base Voltage	V_{CBO}	60		Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	600		mAdc
		Each Transistor	Total Device	
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.65	1.9	Watts
		3.72	10.88	mW/ $^\circ\text{C}$
		6.5	19	
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200 -55 to +125		$^\circ\text{C}$
		MHQ2906, MHQ2907, MPQ29006, MPQ2907		

Refer to MD2904 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	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 10 \text{ } \mu\text{Adc}, I_E = 0$)	$V_{(BR)CBO}$	60	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10 \text{ } \mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 30 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	—	50	nAdc
Emitter Cutoff Current ($V_{CB} = 3.0 \text{ Vdc}, I_E = 0$)	I_{EBO}	—	—	50	nAdc
ON CHARACTERISTICS					
DC Current Gain(1) ($I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)	h_{FE}	MHQ2906, MPQ2906 MHQ2907, MPQ2907		35 75	— —
($I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)		MHQ2906, MPQ2906 MHQ2907, MPQ2907		40 100	— —
($I_C = 300 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)		MHQ2906, MPQ2906 MHQ2907, MPQ2907		30 50	— —
Collector-Emitter Saturation Voltage(1) ($I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$) ($I_C = 300 \text{ mAdc}, I_B = 30 \text{ mAdc}$)	$V_{CE(sat)}$	— —	— —	0.4 1.6	Vdc
Base-Emitter Saturation Voltage(1) ($I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$) ($I_C = 300 \text{ mAdc}, I_B = 30 \text{ mAdc}$)	$V_{BE(sat)}$	— —	— —	1.3 2.6	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product ($I_C = 50 \text{ mAdc}, V_{CE} = 20 \text{ Vdc}, f = 100 \text{ MHz}$)	f_T	200	350	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$)	C_{obo}	—	6.0	8.0	pF
Input Capacitance ($V_{BE} = 2.0 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz}$)	C_{ibo}	—	20	30	pF
SWITCHING CHARACTERISTICS					
Turn-On Time ($V_{CC} = 30 \text{ Vdc}, I_C = 150 \text{ mAdc}, I_{B1} = 15 \text{ mAdc}$)	t_{on}	—	30	—	ns
Turn-Off Time ($V_{CC} = 6.0 \text{ Vdc}, I_C = 150 \text{ mAdc}, I_{B1} = I_{B2} = 15 \text{ mAdc}$)	t_{off}	—	100	—	ns

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

*MPQ2906A and MPQ2907A also available.

FIGURE 1 – DELAY AND RISE
TIME TEST CIRCUIT

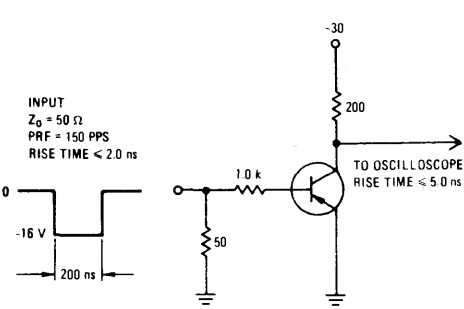


FIGURE 2 – STORAGE AND FALL
TIME TEST CIRCUIT

