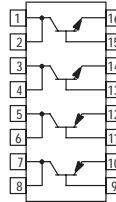


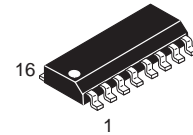
Quad MPU Clock Buffer Transistor

NPN/PNP Silicon



MMPQ6842

Voltage and current are negative for PNP transistors



CASE 751B-05, STYLE 4
SO-16

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector–Emitter Voltage	V_{CEO}	30		Vdc
Collector–Base Voltage	V_{CB}	30		Vdc
Emitter–Base Voltage	V_{EB}	4.0		Vdc
Collector Current — Continuous	I_C	200		mAdc
		Each Transistor	Four Transistors Equal Power	
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.4	0.72	Watts
		3.2	6.4	mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	0.66	1.92	Watts
		5.3	15.4	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150		$^\circ\text{C}$

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⁾ ($I_C = 10 \text{ mAdc}, I_E = 0$)	$V_{(BR)CEO}$	30	—	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 10 \mu\text{Adc}, I_E = 0$)	$V_{(BR)CBO}$	30	—	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10 \mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	4.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 20 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	—	50	nAdc
Emitter Cutoff Current ($V_{EB} = 3.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	—	50	nAdc

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

MMPQ6842**ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS(1)					
DC Current Gain ($I_C = 0.5 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$) ($I_C = 1.0 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$) ($I_C = 10 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$)	h_{FE}	30 50 70	— — —	— — —	—
Collector–Emitter Saturation Voltage ($I_C = 0.5 \text{ mAdc}$, $I_B = 0.05 \text{ mAdc}$, $0^\circ\text{C} \leq T \leq 70^\circ\text{C}$)	$V_{CE(\text{sat})}$	—	0.05	0.15	Vdc
Base–Emitter Saturation Voltage ($I_C = 0.5 \text{ mAdc}$, $I_B = 0.05 \text{ mAdc}$)	$V_{BE(\text{sat})}$	—	0.65	0.9	Vdc

DYNAMIC CHARACTERISTICS

Current–Gain — Bandwidth Product ⁽¹⁾ ($I_C = 10 \text{ mAdc}$, $V_{CE} = 20 \text{ Vdc}$, $f = 100 \text{ MHz}$)	f_T	200	350	—	MHz
Output Capacitance ($V_{CB} = 5.0 \text{ Vdc}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	C_{ob}	—	3.0	4.5	pF
Input Capacitance ($V_{EB} = 0.5 \text{ Vdc}$, $I_C = 0$, $f = 1.0 \text{ MHz}$)	C_{ib}	—	5.0	10	pF
		—	4.0	8.0	
	PNP				
	NPN				

SWITCHING CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V_{CC} = 5.0 \text{ Vdc}$)

Propagation Delay Time (50% Points TP1 to TP3) (50% Points TP2 to TP4)	t_{PLH} t_{PHL}	— —	15 6.0	25 15	ns
Rise Time (0.3 V to 4.7 V, TP3 or TP4)	t_r	5.0	25	35	ns
Fall Time (4.7 V to 0.3 V, TP3 or TP4)	t_f	5.0	10	20	ns

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