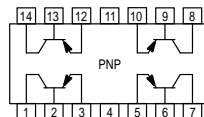
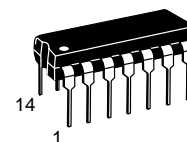


Quad Memory Driver Transistor

PNP Silicon



MPQ3762



CASE 646-06, STYLE 1
TO-116

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector–Emitter Voltage	V_{CEO}	–40		Vdc
Collector–Base Voltage	V_{CBO}	–40		Vdc
Emitter–Base Voltage	V_{EBO}	–5.0		Vdc
Collector Current — Continuous	I_C	–1.5		Adc
		Each Transistor	Four Transistors Equal Power	
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	750 5.98	1700 13.6	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.25 10	3.2 25.6	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic		Junction to Case	Junction to Ambient	Unit
Thermal Resistance ⁽¹⁾	Each Die	100	167	$^\circ\text{C}/\text{W}$
	Effective, 4 Die	39	73.5	$^\circ\text{C}/\text{W}$
Coupling Factors	Q1–Q4 or Q2–Q3	46	56	%
	Q1–Q2 or Q3–Q4	5.0	10	%

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 ⁽²⁾ ($I_C = -10 \text{ mAdc}$, $I_E = 0$)	$V_{(BR)CEO}$	–40	—	—	Vdc
Collector–Base Breakdown Voltage ($I_C = -10 \text{ } \mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	–40	—	—	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}	—	—	–100	nAdc
Emitter Cutoff Current ($V_{EB} = -3.0 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	—	–100	nAdc

- $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.
- Pulse Test: Pulse Width $\leq 300 \text{ } \mu\text{s}$; Duty Cycle $\leq 2.0\%$.

MPQ3762**ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS⁽²⁾					
DC Current Gain ($I_C = -150\text{ mAdc}$, $V_{CE} = -1.0\text{ Vdc}$) ($I_C = -500\text{ mAdc}$, $V_{CE} = -2.0\text{ Vdc}$) ($I_C = -1.0\text{ Adc}$, $V_{CE} = -2.0\text{ Vdc}$)	h_{FE}	35 30 20	70 65 35	— — —	—
Collector–Emitter Saturation Voltage ($I_C = -500\text{ mAdc}$, $I_B = -50\text{ mAdc}$) ($I_C = -1.0\text{ Adc}$, $I_B = -100\text{ mAdc}$)	$V_{CE(sat)}$	— —	–0.3 –0.6	–0.55 –0.9	Vdc
Base–Emitter Saturation Voltage ($I_C = -500\text{ mAdc}$, $I_B = -50\text{ mAdc}$) ($I_C = -1.0\text{ Adc}$, $I_B = -100\text{ mAdc}$)	$V_{BE(sat)}$	— —	–0.9 –1.0	–1.25 –1.4	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ⁽²⁾ ($I_C = -50\text{ mAdc}$, $V_{CE} = -10\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	150	275	—	MHz
Output Capacitance ($V_{CB} = -10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	9.0	15	pF
Input Capacitance ($V_{EB} = -0.5\text{ Vdc}$, $I_C = 0$, $f = 1.0\text{ MHz}$)	C_{ibo}	—	55	80	pF

SWITCHING CHARACTERISTICS

Turn–On Time ($V_{CC} = -30\text{ Vdc}$, $I_C = -1.0\text{ Adc}$, $I_{B1} = -100\text{ mAdc}$, $V_{BE(off)} = 2.0\text{ Vdc}$)	t_{on}	—	—	50	ns
Turn–Off Time ($V_{CC} = -30\text{ Vdc}$, $I_C = -1.0\text{ Adc}$, $I_{B1} = I_{B2} = -100\text{ mAdc}$)	t_{off}	—	—	120	ns

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

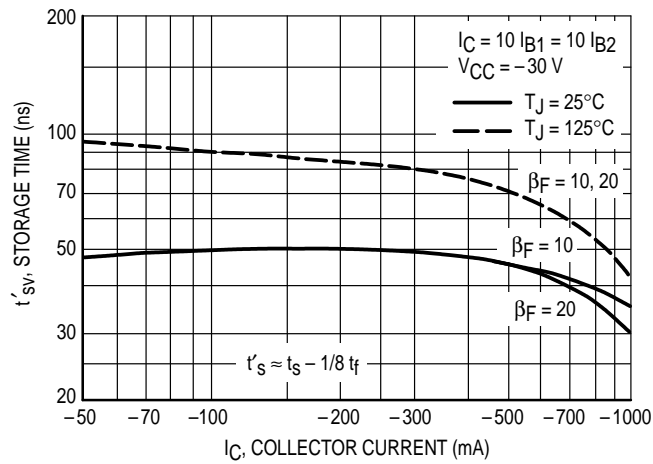


Figure 1. Storage Time Variation with Temperature

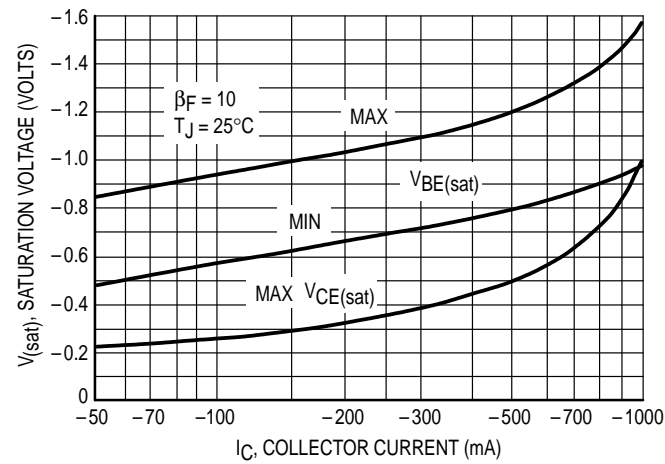


Figure 2. Limits of Saturation Voltage

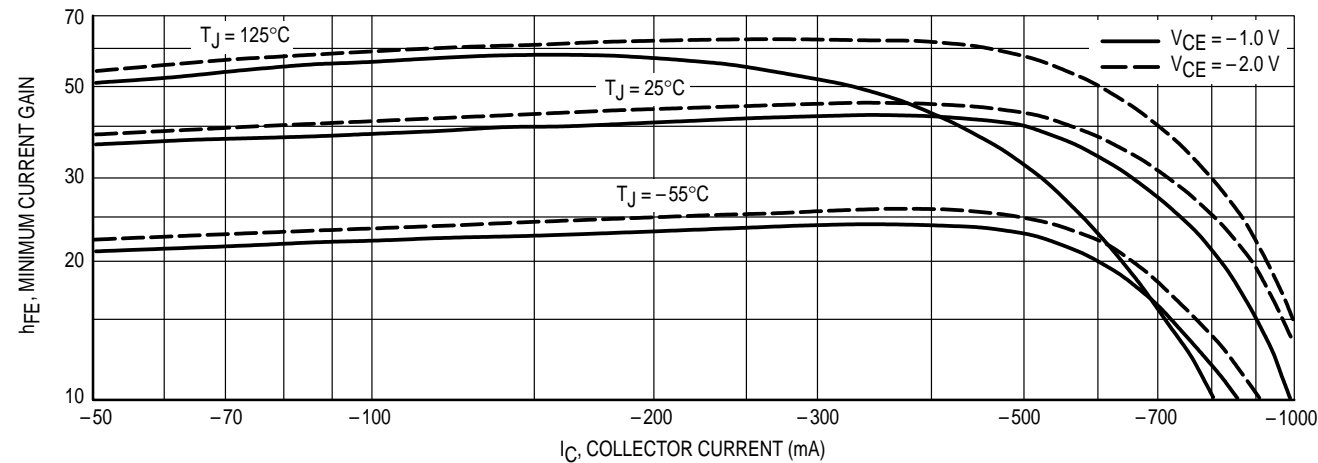
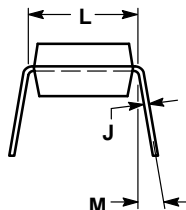
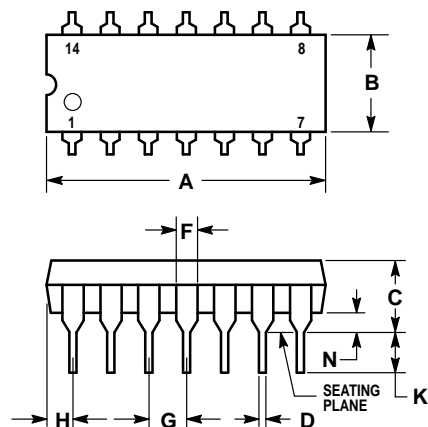


Figure 3. Minimum Current Gain Characteristics

PACKAGE DIMENSIONS



STYLE 1:


- PIN 1. COLLECTOR
 2. BASE
 3. EMITTER
 4. NO CONNECTION
 5. EMITTER
 6. BASE
 7. COLLECTOR
 8. COLLECTOR
 9. BASE
 10. EMITTER
 11. NO CONNECTION
 12. EMITTER
 13. BASE
 14. COLLECTOR

NOTES:

- LEADS WITHIN 0.13 (0.005) RADIUS OF TRUE POSITION AT SEATING PLANE AT MAXIMUM MATERIAL CONDITION.
- DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
- DIMENSION B DOES NOT INCLUDE MOLD FLASH.
- ROUNDED CORNERS OPTIONAL.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.715	0.770	18.16	19.56
B	0.240	0.260	6.10	6.60
C	0.145	0.185	3.69	4.69
D	0.015	0.021	0.38	0.53
F	0.040	0.070	1.02	1.78
G	0.100 BSC		2.54 BSC	
H	0.052	0.095	1.32	2.41
J	0.008	0.015	0.20	0.38
K	0.115	0.135	2.92	3.43
L	0.300 BSC		7.62 BSC	
M	0°	10°	0°	10°
N	0.015	0.039	0.39	1.01

**CASE 646-06
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 ISSUE M**

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