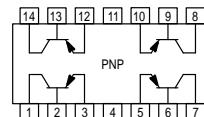
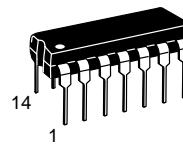


**Quad Memory Driver
Transistor**
PNP Silicon



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°C Derate above 25°C	P _D	750 5.98	1700 13.6	mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	1.25 10	3.2 25.6	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(1) Each Die Effective, 4 Die	100 39	167 73.5	°C/W °C/W
Coupling Factors Q1-Q4 or Q2-Q3 Q1-Q2 or Q3-Q4	46 5.0	56 10	% %

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ⁽²⁾ (I _C = -10 mAdc, I _B = 0)	V _{(BR)CEO}	-40	—	—	Vdc
Collector-Base Breakdown Voltage (I _C = -10 µAdc, I _E = 0)	V _{(BR)CBO}	-40	—	—	Vdc
Emitter-Base Breakdown Voltage (I _E = -10 µAdc, I _C = 0)	V _{(BR)EBO}	-5.0	—	—	Vdc
Collector Cutoff Current (V _{CB} = -30 Vdc, I _E = 0)	I _{CBO}	—	—	-100	nAdc
Emitter Cutoff Current (V _{EB} = -3.0 Vdc, I _C = 0)	I _{EBO}	—	—	-100	nAdc

1. R_{θJA} is measured with the device soldered into a typical printed circuit board.

2. Pulse Test: Pulse Width ≤ 300 µs; Duty Cycle ≤ 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 ($I_C = -150 \text{ mA}_\text{dc}$, $V_{CE} = -1.0 \text{ V}_\text{dc}$) ($I_C = -500 \text{ mA}_\text{dc}$, $V_{CE} = -2.0 \text{ V}_\text{dc}$) ($I_C = -1.0 \text{ Adc}$, $V_{CE} = -2.0 \text{ V}_\text{dc}$)	h_{FE}	35 30 20	70 65 35	— — —	—
Collector-Emitter Saturation Voltage ($I_C = -500 \text{ mA}_\text{dc}$, $I_B = -50 \text{ mA}_\text{dc}$) ($I_C = -1.0 \text{ Adc}$, $I_B = -100 \text{ mA}_\text{dc}$)	$V_{CE(\text{sat})}$	— —	-0.3 -0.6	-0.55 -0.9	V_dc
Base-Emitter Saturation Voltage ($I_C = -500 \text{ mA}_\text{dc}$, $I_B = -50 \text{ mA}_\text{dc}$) ($I_C = -1.0 \text{ Adc}$, $I_B = -100 \text{ mA}_\text{dc}$)	$V_{BE(\text{sat})}$	— —	-0.9 -1.0	-1.25 -1.4	V_dc

SMALL-SIGNAL CHARACTERISTICS

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

SWITCHING CHARACTERISTICS

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

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

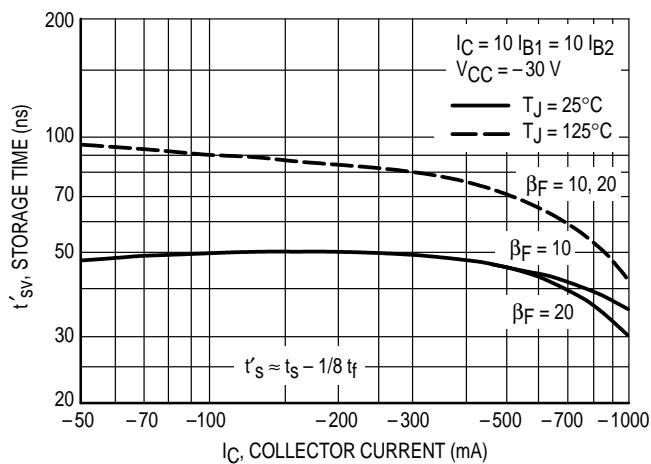


Figure 1. Storage Time Variation
with Temperature

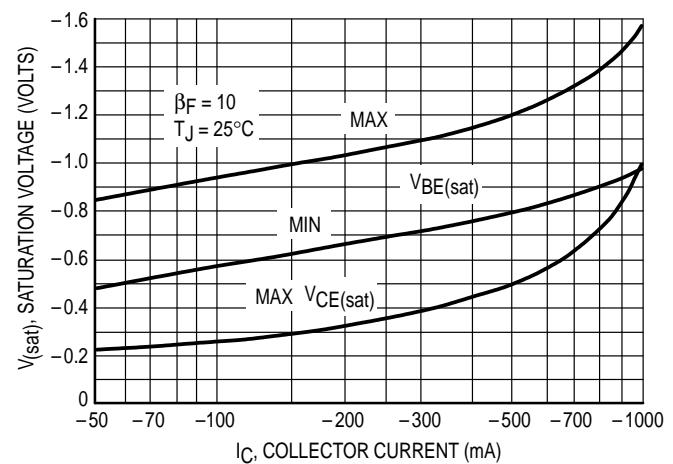


Figure 2. Limits of Saturation Voltage

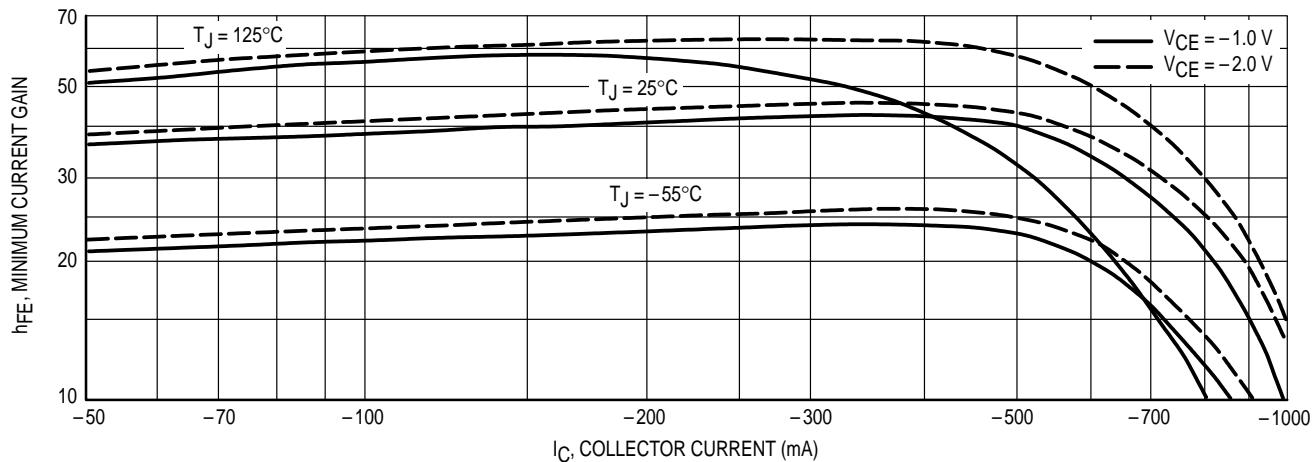
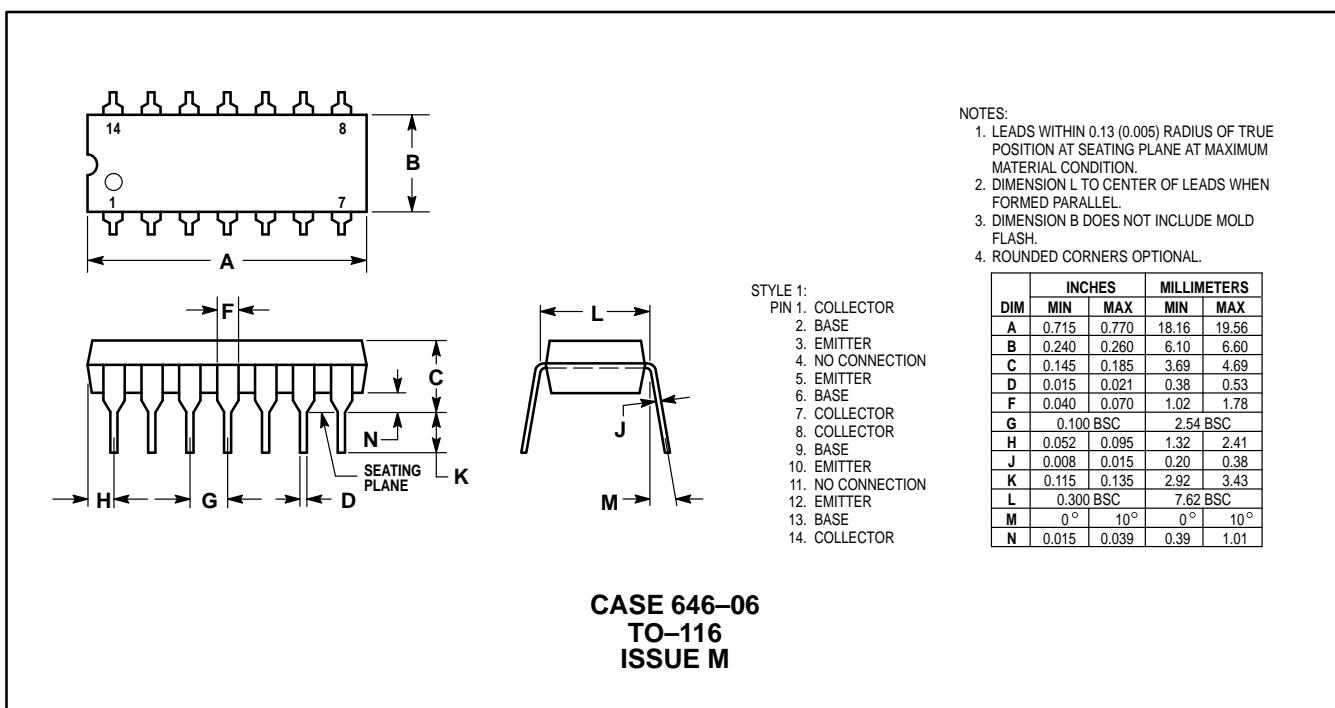


Figure 3. Minimum Current Gain Characteristics

PACKAGE DIMENSIONS



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