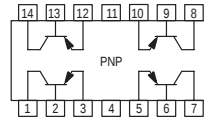


Quad Memory Driver Transistor

PNP Silicon



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	–1.0		Adc
		Each Transistor	Four Transistors Equal Power	
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ (1) Derate above 25°C	P_D	650 5.2	1500 12	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		$R_{\theta JC}$ Junction to Case	$R_{\theta JA}$ Junction to Ambient	Unit
Thermal Resistance	Each Die	100	193	$^\circ\text{C}/\text{W}$
	Effective, 4 Die	39	83.2	$^\circ\text{C}/\text{W}$
Coupling Factors	Q1–Q4 or Q2–Q3	45	55	%
	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

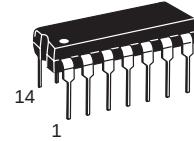
Collector–Emitter Breakdown Voltage ⁽²⁾ ($I_C = -10 \text{ mAdc}$, $I_E = 0$)	$V_{(BR)CEO}$	–40	—	—	Vdc
Collector–Base Breakdown Voltage ($I_C = -10 \mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	–40	—	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = -10 \mu\text{Adc}$, $I_C = 0$)	$V_{(BR)EBO}$	–5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = -30 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	—	–200	nAdc
Emitter Cutoff Current ($V_{EB} = -3.0 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	—	–200	nAdc

- Second Breakdown occurs at power levels greater than 2 times the power dissipation rating.
- Pulse Test: Pulse Width $\leq 300 \mu\text{s}$; Duty Cycle $\leq 2.0\%$.

Preferred devices are Motorola recommended choices for future use and best overall value.

MPQ3467

Motorola Preferred Device



CASE 646–06, STYLE 1
TO–116

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

Characteristic	Symbol	Min	Typ	Max	Unit
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ON CHARACTERISTICS

DC Current Gain ⁽²⁾ ($I_C = -500\text{ mAdc}$, $V_{CE} = -1.0\text{ Vdc}$)	h_{FE}	-20	—	—	—
Collector–Emitter Saturation Voltage ⁽²⁾ ($I_C = -500\text{ mAdc}$, $I_B = -50\text{ mAdc}$)	$V_{CE(sat)}$	—	-0.23	-0.5	Vdc
Base–Emitter Saturation Voltage ⁽²⁾ ($I_C = -500\text{ mAdc}$, $I_B = -50\text{ mAdc}$)	$V_{BE(sat)}$	—	-0.90	-1.2	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = -50\text{ mAdc}$, $V_{CE} = -10\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	125	190	—	MHz
Output Capacitance ($V_{CB} = -10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	10	25	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 ($I_C = -500\text{ mAdc}$, $I_{B1} = -50\text{ mAdc}$)	t_{on}	—	—	40	ns
Turn–Off Time ($I_C = -500\text{ mAdc}$, $I_{B1} = I_{B2} = -50\text{ mAdc}$)	t_{off}	—	—	90	ns

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

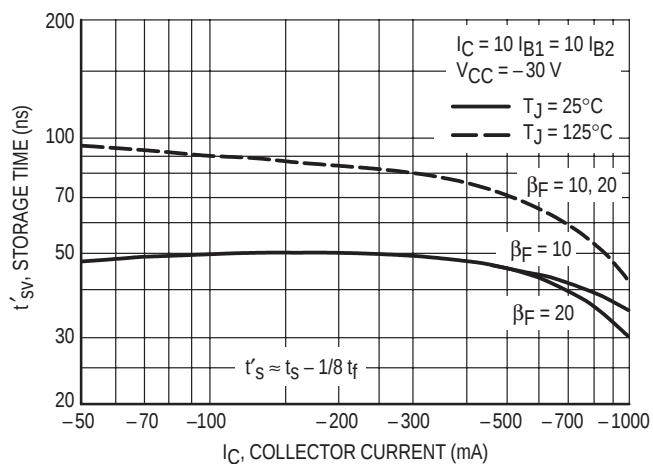


Figure 1. Storage Time Variation with Temperature

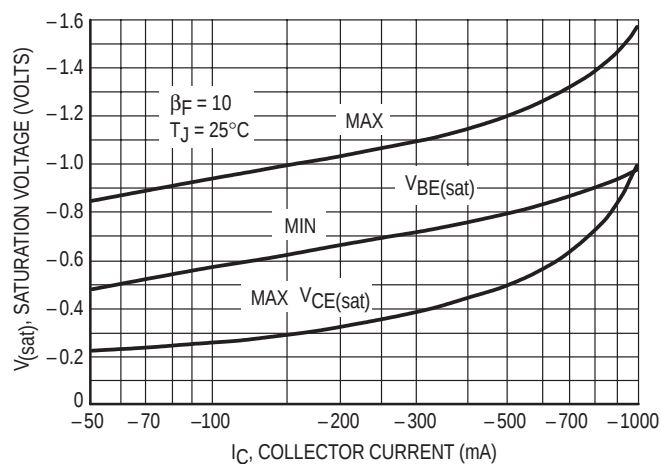


Figure 2. Limits of Saturation Voltage

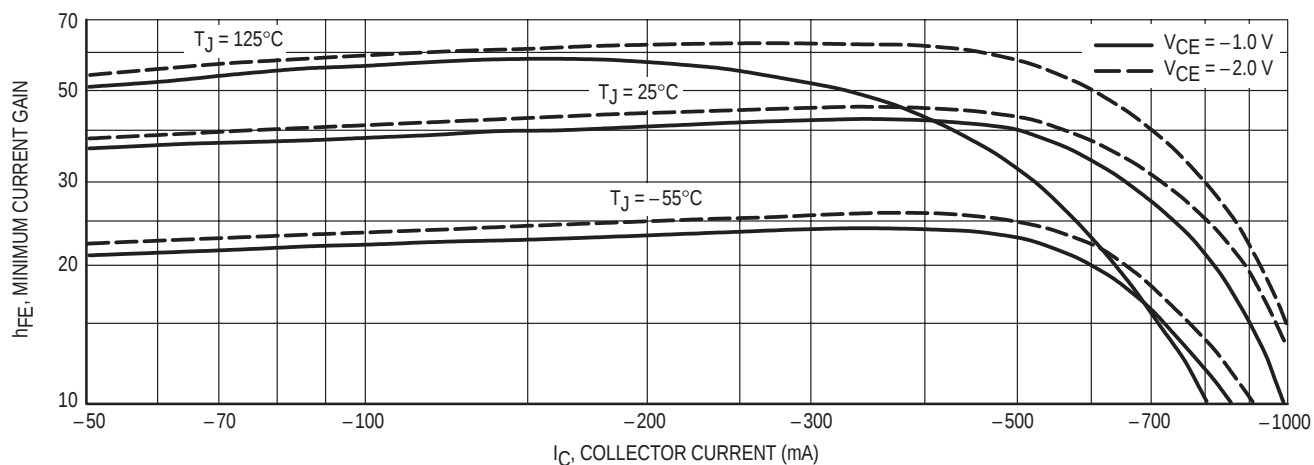


Figure 3. Minimum Current Gain Characteristics