

MAXIMUM RATINGS

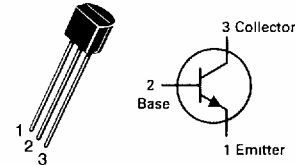
Rating	Symbol	MPS-A16	MPS-A17	Unit
Collector-Emitter Voltage	V_{CEO}	40		Vdc
Emitter-Base Voltage	V_{EBO}	12	15	Vdc
Collector Current — Continuous	I_C	100		mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350		mW
		2.8		mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0		Watt
		8.0		mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	$^\circ\text{C/W}$

MPSA16 MPSA17★

CASE 29-04, STYLE 1
TO-92 (TO-226AA)

**CHOPPER TRANSISTORS**

NPN SILICON

★This is a Motorola
designated preferred device.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage ($I_C = 1.0\text{ mAdc}, I_B = 0$)	$V_{(BR)CEO}$	40	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 0.1\text{ mAdc}, I_C = 0$)	$V_{(BR)EBO}$	12 15	— —	Vdc
				MPS-A16 MPS-A17
Collector Cutoff Current ($V_{CB} = 30\text{ Vdc}, I_E = 0$)	I_{CBO}	—	100	nAdc
Emitter Cutoff Current ($V_{EB} = 10\text{ Vdc}, I_C = 0$)	I_{EBO}	—	100	nAdc
ON CHARACTERISTICS				
DC Current Gain ($I_C = 5.0\text{ mAdc}, V_{CE} = 10\text{ Vdc}$)	h_{FE}	200	600	—
Collector-Emitter Saturation Voltage ($I_C = 10\text{ mAdc}, I_B = 1.0\text{ mAdc}$)	$V_{CE(sat)}$	—	0.25	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product ($I_C = 5.0\text{ mAdc}, V_{CE} = 10\text{ Vdc}, f = 100\text{ MHz}$)	f_T	100 80	— —	MHz
				MPS-A16 MPS-A17
Output Capacitance ($V_{CB} = 10\text{ Vdc}, I_E = 0, f = 1.0\text{ MHz}$)	C_{obo}	—	4.0	pF

FIGURE 1 – DC CURRENT GAIN

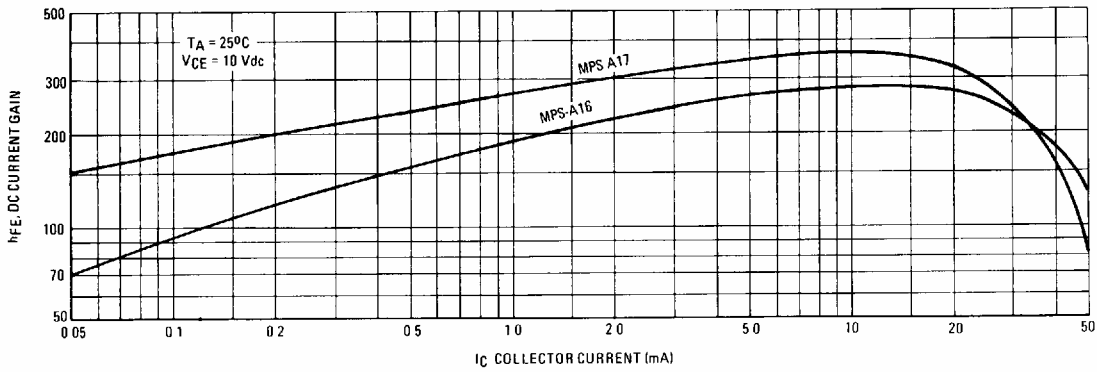


FIGURE 2 – SMALL SIGNAL CURRENT GAIN

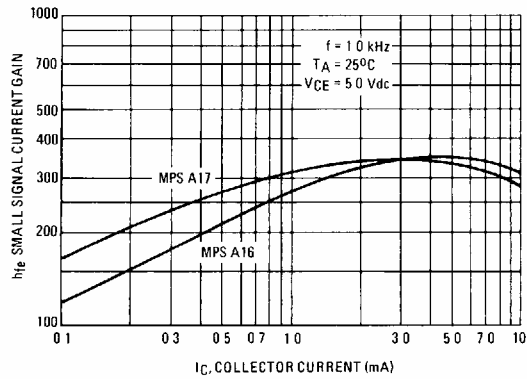


FIGURE 3 – SATURATION AND ON VOLTAGES

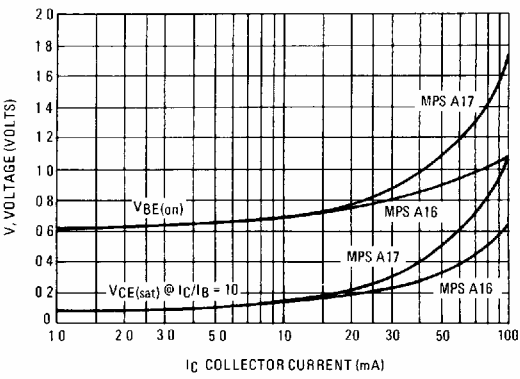


FIGURE 4 – CURRENT-GAIN-BANDWIDTH PRODUCT

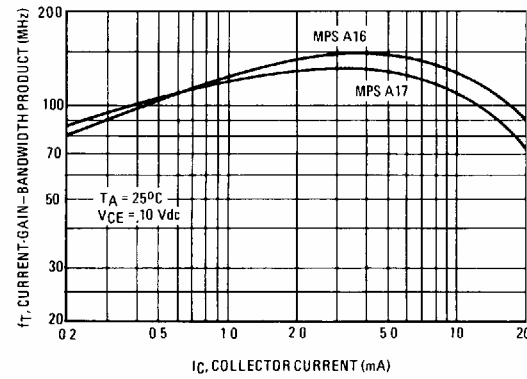


FIGURE 5 – OUTPUT CAPACITANCE

