

**MAXIMUM RATINGS**

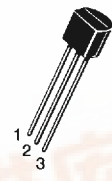
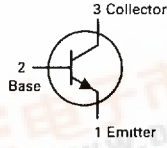
Rating	Symbol	MPS-A16	MPS-A17	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	40		Vdc
Emitter-Base Voltage	V <sub>EBO</sub>	12	15	Vdc
Collector Current — Continuous	I <sub>C</sub>	100		mAdc
Total Device Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	350 2.8		mW mW/°C
Total Device Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C	P <sub>D</sub>	1.0 8.0		Watt mW/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150		°C

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	357	°C/W
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	125	°C/W

**MPSA16  
MPSA17★**

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

**CHOPPER TRANSISTORS**

NPN SILICON

★This is a Motorola  
designated preferred device.

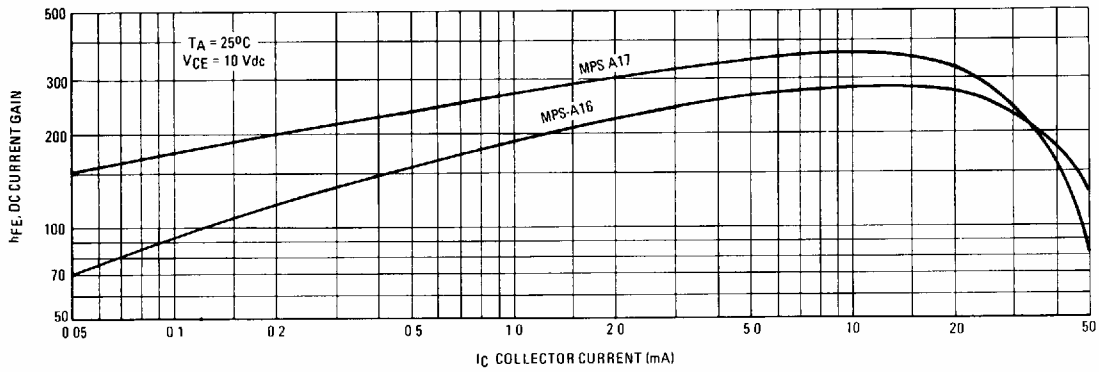
**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 1.0 mAdc, I <sub>B</sub> = 0)	V <sub>(BR)CEO</sub>	40	—	Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 0.1 mAdc, I <sub>C</sub> = 0)	V <sub>(BR)EBO</sub>	12 15	—	Vdc
Collector Cutoff Current (V <sub>CB</sub> = 30 Vdc, I <sub>E</sub> = 0)	I <sub>CBO</sub>	—	100	nAdc
Emitter Cutoff Current (V <sub>EB</sub> = 10 Vdc, I <sub>C</sub> = 0)	I <sub>EBO</sub>	—	100	nAdc
<b>ON CHARACTERISTICS</b>				
DC Current Gain (I <sub>C</sub> = 5.0 mAdc, V <sub>CE</sub> = 10 Vdc)	h <sub>FE</sub>	200	600	—
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 10 mAdc, I <sub>B</sub> = 1.0 mAdc)	V <sub>CE(sat)</sub>	—	0.25	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
Current-Gain — Bandwidth Product (I <sub>C</sub> = 5.0 mAdc, V <sub>CE</sub> = 10 Vdc, f = 100 MHz)	f <sub>T</sub>	100 80	—	MHz
Output Capacitance (V <sub>CB</sub> = 10 Vdc, I <sub>E</sub> = 0, f = 1.0 MHz)	C <sub>obo</sub>	—	4.0	pF

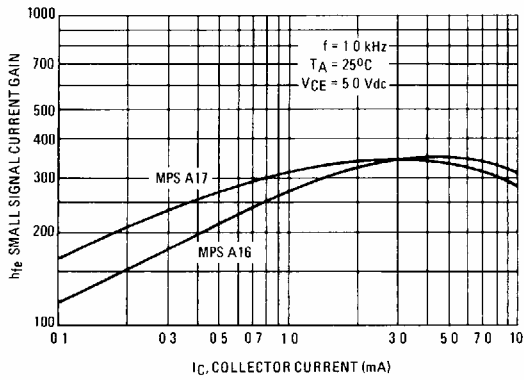


**MPSA16 MPSA17**

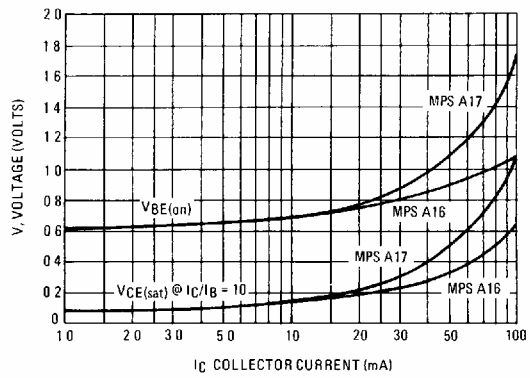
**FIGURE 1 – DC CURRENT GAIN**



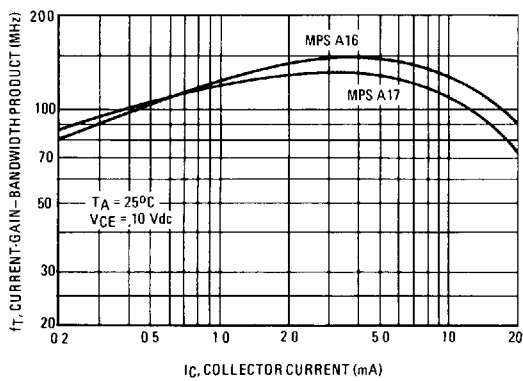
**FIGURE 2 – SMALL SIGNAL CURRENT GAIN**



**FIGURE 3 – SATURATION AND ON VOLTAGES**



**FIGURE 4 – CURRENT-GAIN-BANDWIDTH PRODUCT**



**FIGURE 5 – OUTPUT CAPACITANCE**

