MPS6512 thru MPS6515/MPS6516 thru MPS6519 (continued)

MPS6512 thru MPS6515 (NPN)

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 0.5 mAdc, I_B = 0)	MPS6512, MPS6513 MPS6514, MPS6515	BV_{CEO}	30 25	- -	- -	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		BV_{EBO}	4.0	-	-	Vdc
Collector Cutoff Current (V_{CB} = 30 Vdc, I_E = 0) (V_{CB} = 30 Vdc, I_E = 0, T_A = 60°C)		I_{CBO}	- -	- -	0.05 1.0	μAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 2.0 mAdc, V_{CE} = 10 Vdc)	MPS6512 MPS6513 MPS6514 MPS6515	h_{FE}	50 90 150 250	- - - -	100 180 300 500	-
(I_C = 100 mAdc, V_{CE} = 10 Vdc)(1)	MPS6512 MPS6513 MPS6514 MPS6515		30 60 90 150	- - - -	- - - -	
Collector-Emitter Saturation Voltage (I_C = 50 mAdc, I_B = 5.0 mAdc)		$V_{CE(sat)}$	-	-	0.5	Vdc
DYNAMIC CHARACTERISTICS						
Current-Gain—Bandwidth Product (I_C = 2.0 mAdc, V_{CE} = 10 Vdc)	MPS6512, MPS6513 MPS6514, MPS6515	f_T	- -	250 390	- -	MHz
(I_C = 10 mAdc, V_{CE} = 10 Vdc)	MPS6512, MPS6513 MPS6514, MPS6515		- -	330 480	- -	
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	-	-	3.5	pF
Noise Figure (I_C = 10 μAdc, V_{CE} = 5.0 Vdc, R_S = 10 k ohms, Power Bandwidth = 15.7 kHz, 3.0 dB points @ 10 Hz and 10 kHz)		NF	-	2.0	-	dB

* Pulse Test: Pulse Width ≤ 30 μs, Duty Cycle ≤ 2.0%.

MPS6516 thru MPS6519 (PNP)

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 0.5 mAdc, I_B = 0)	MPS6516 thru MPS6518 MPS6519	BV_{CEO}	40 25	- -	- -	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		BV_{EBO}	4.0	-	-	Vdc
Collector Cutoff Current (V_{CB} = 30 Vdc, I_E = 0)	MPS6516 thru MPS6518	I_{CBO}	-	-	0.05	μAdc
(V_{CB} = 20 Vdc, I_E = 0)	MPS6519		-	-	0.05	
(V_{CB} = 30 Vdc, I_E = 0, T_A = 60°C)	MPS6516 thru MPS6518		-	-	1.0	
(V_{CB} = 20 Vdc, I_E = 0, T_A = 60°C)	MPS6519		-	-	1.0	
ON CHARACTERISTICS						
DC Current Gain (I_C = 2.0 mAdc, V_{CE} = 10 Vdc)	MPS6516 MPS6517 MPS6518 MPS6519	h_{FE}	50 90 150 250	- - - -	100 180 300 500	-
(I_C = 100 mAdc, V_{CE} = 10 Vdc)(1)	MPS6516 MPS6517 MPS6518 MPS6519		30 60 90 150	- - - -	- - - -	
Collector-Emitter Saturation Voltage (I_C = 50 mAdc, I_B = 5.0 mAdc)		$V_{CE(sat)}$	-	-	0.5	Vdc
DYNAMIC CHARACTERISTICS						
Current-Gain—Bandwidth Product (I_C = 2.0 mAdc, V_{CE} = 10 Vdc)	MPS6516, MPS6517 MPS6518, MPS6519	f_T	- -	200 340	- -	MHz
(I_C = 10 mAdc, V_{CE} = 10 Vdc)	MPS6516, MPS6517 MPS6518, MPS6519		- -	270 420	- -	
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	-	-	4.0	pF
Noise Figure (I_C = 10 μAdc, V_{CE} = 5.0 Vdc, R_S = 10 k ohms, Power Bandwidth = 15.7 kHz, 3.0 dB points @ 10 Hz and 10 kHz)		NF	-	2.0	-	dB

(1) Pulse Test: Pulse Width ≤ 30 μs, Duty Cycle ≤ 2.0%.