MICRO ELECTRONICS

thru MPS6523

COMPLEMENTARY
SILICON TRANSISTORS

MPS6520, MPS6521 (NPN) and MPS6522, MPS6523 (PNP) are complementary silicon planar epitaxial transistors designed for general purpose amplifier applications and for complementary circuitry.

ABSOLUTE MAXIMUM RATINGS		MPS6520,1	MPS6522,3
Collector-Base Voltage	V_{CBO}	40V	25V
Collector-Emitter Voltage	V_{CEO}	25V	
Emitter-Base Voltage	V_{EBO}	4V	
Collector Current	I_C	100mA	
Total Power Dissipation @ T_A=25°C T_C=25°C	P_{tot}	350mW 1W	
Operating Junction & Storage Temperature	T_j, T_{stg}	-55 to +150°C	

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

PARAMETER		SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS	
Collector-Emitter Breakdown Voltage		BV_{CEO}	25		V	I_C=0.5mA	I_B=0
Emitter-Base Breakdown Voltage		BV_{EBO}	4		V	I_E=10μA	I_C=0
Collector Cutoff Current		I_{CBO}					
	MPS6520,1			50	nA	V_{CB}=30V	I_E=0
	MPS6520,1			1	μA	V_{CB}=30V	T_A=60°C
	MPS6522,3			50	nA	V_{CB}=20V	I_E=0
	MPS6522,3			1	μA	V_{CB}=20V	T_A=60°C
D.C. Current Gain	MPS6520,2 MPS6521,3	H_{FE}	100 150			I_C=100μA	V_{CE}=10V
	MPS6520,2 MPS6521,3		200 300			I_C=2mA	V_{CE}=10V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$		0.5	V	I_C=50mA	I_B=5mA

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ELECTRICAL CHARACTERISTICS (T_A=25°C)

PARAMETER	SYMBOL	TYP	MAX	UNIT	TEST CONDITIONS
Current Gain-Bandwidth Product	f_T			MHz	
MPS6520,1		390			I_C=2mA V_{CE}=10V
MPS6522,3		340			
MPS6520,1		480			I_C=10mA V_{CE}=10V
MPS6522,3		420			
Output Capacitance	Cob		3.5	pF	V_{CB}=10V I_E=0 f=1MHz
Noise Figure	NF	1.8	3	dB	I_C=10μA V_{CE}=5V R_S=10kΩ f=10Hz to 10kHz BB=15.7kHz

TYPICAL CHARACTERISTICS (T_A=25°C)