

MPS5179

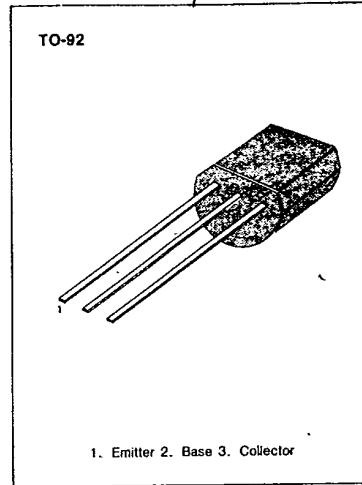
NPN EPITAXIAL SILICON TRANSISTOR

T-31-15

HIGH FREQUENCY TRANSISTOR

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V _{CB0}	20	V
Collector-Emitter Voltage	V _{CEO}	12	V
Emitter-Base Voltage	V _{EB0}	2.5	V
Collector Current	I _C	50	mA
Collector Dissipation (T _a =25°C)	P _C	200	mW
Derate above 25°C		1.14	mW/°C
Collector Dissipation (T _c =25°C)	P _C	300	mW
Derate above 25°C		1.71	mW/°C
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55~150	°C



ELECTRICAL CHARACTERISTICS (T_a = 25°C)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	V _{CEO (SUS)}	I _C =3mA, I _B =0	12		V
Collector Base Breakdown Voltage	BV _{CB0}	I _C =0.001mA, I _E =0	20		V
Emitter Base Breakdown Voltage	BV _{EB0}	I _E =0.01mA, I _C =0	2.5		V
Collector Cutoff Current	I _{CB0}	V _{CB} =15V, I _E =0		0.02	μA
		V _{CB} =15V, I _E =0, T _a =150°C		1	μA
DC Current Gain	h _{FE}	V _{CE} =1V, I _C =3mA	25	250	
Collector-Emitter Saturation Voltage	V _{CE (sat)}	I _C =10mA, I _B =1mA		0.4	V
Base-Emitter Saturation Voltage	V _{BE (sat)}	I _C =10mA, I _B =1mA		1	V
Current Gain Bandwidth Product	f _T	V _{CE} =6V, I _C =5mA, f=100MHz	900	2000	MHz
Collector Base Capacitance	C _{cb}	V _{CB} =10V, I _E =0, f=0.1 to 1MHz		1	pF
Small Signal Current Gain	h _{fe}	V _{CE} =6V, I _C =2mA, f=1KHz	25	300	
Collector Base Time Constant	C _{c-rbb}	V _{CB} =6V, I _E =2mA, f=31.9MHz	3	14	ps
Noise Figure	NF	V _{CE} =6V, I _C =1.5mA, f=200MHz		4.5	dB
		R _S =50Ω			
Common Emitter Amplifier Power Gain	G _{pe}	V _{CE} =6V, I _C =5mA, f=200MHz	15		dB