

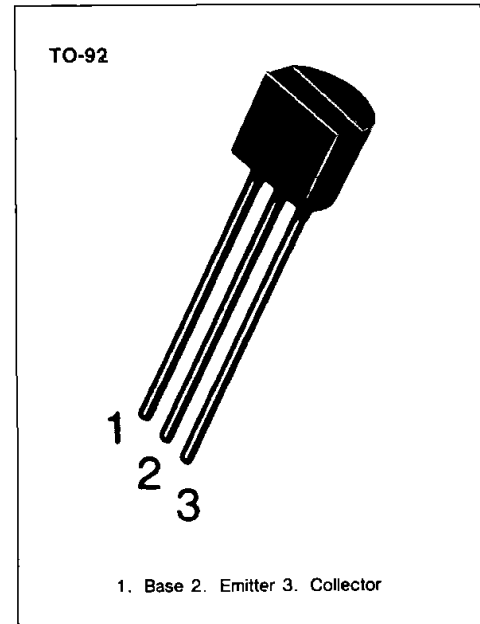
Transistors

MPSA24

VHF TRANSISTOR

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	100	mA
Collector Dissipation ($T_a=25^\circ\text{C}$)	P_C	350	mW
Derate above 25°C		2.8	mW/ $^\circ\text{C}$
Junction Temperature	T_j	135	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ 135	$^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{th(j-a)}$	357	$^\circ\text{C/W}$

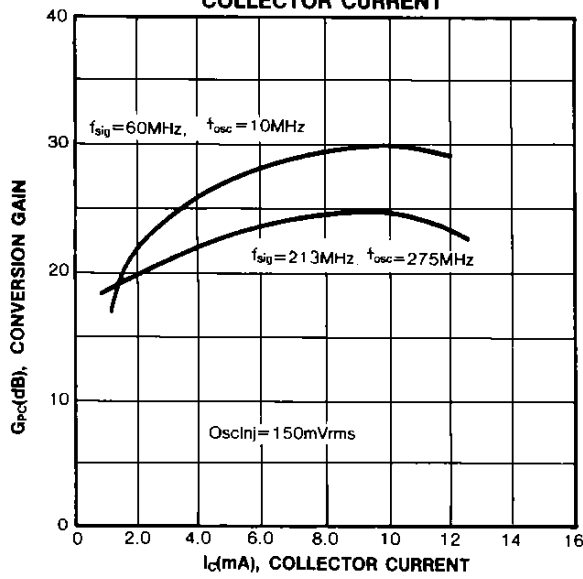


ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

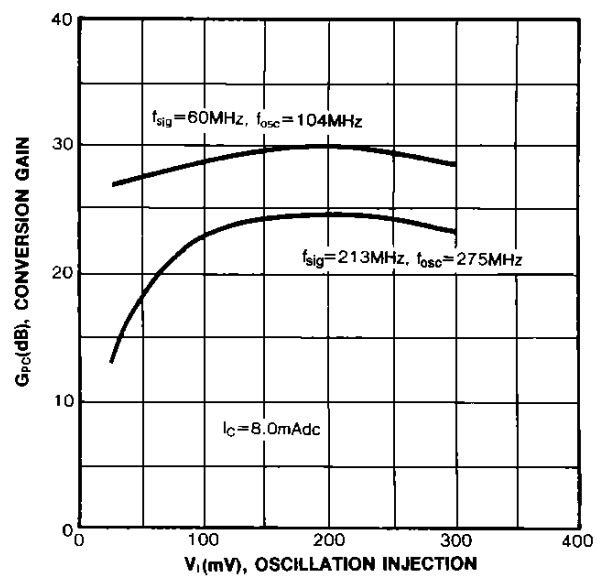
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	40			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}$, $I_B=0$	30			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}$, $I_C=0$	4.0			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=15\text{V}$, $I_E=0$			50	nA
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}$, $I_C=8\text{mA}$	30			
Current Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=8\text{mA}$ $f=100\text{MHz}$	400	620		MHz
Collector-Base Capacitance	C_{cb}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		0.25	0.36	pF
Conversion Gain (213 to 45 MHz)	G_{CE}	$V_{CC}=20\text{V}$, $I_C=8\text{mA}$ Oscillator injection=150mV	19	24		dB
Conversion Gain (60 to 45 MHz)	G_{CE}	$V_{CC}=20\text{V}$, $I_C=8\text{mA}$ Oscillator injection=150mV	24	29		dB

CONVERSION GAIN CHARACTERISTICS ($V_{CC} = 20V$, $R_s = R_L = 50\Omega$, $f_{if} = 44MHz$, B.W = 6MHz)

CONVERSION GAIN versus COLLECTOR CURRENT

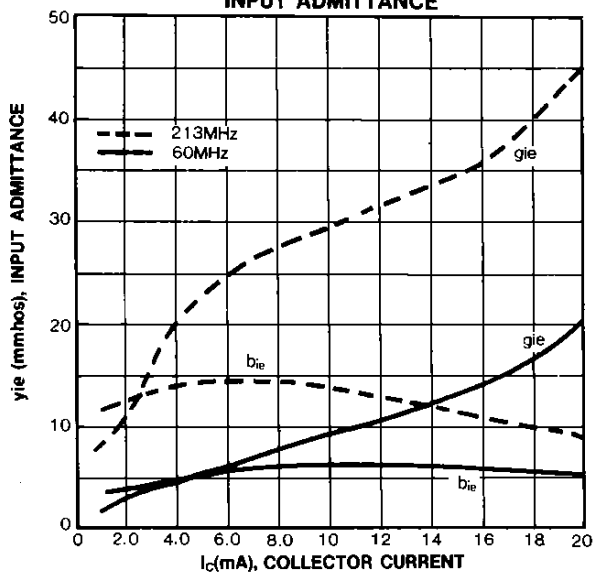


CONVERSION GAIN versus INJECTION LEVEL

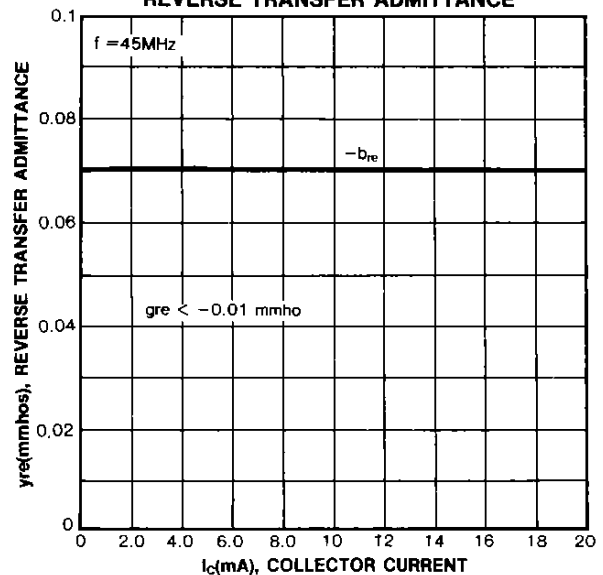


COMMON-BASE y PARAMETERS ($V_{CE} = 15V$, $T_a = 25^\circ C$)

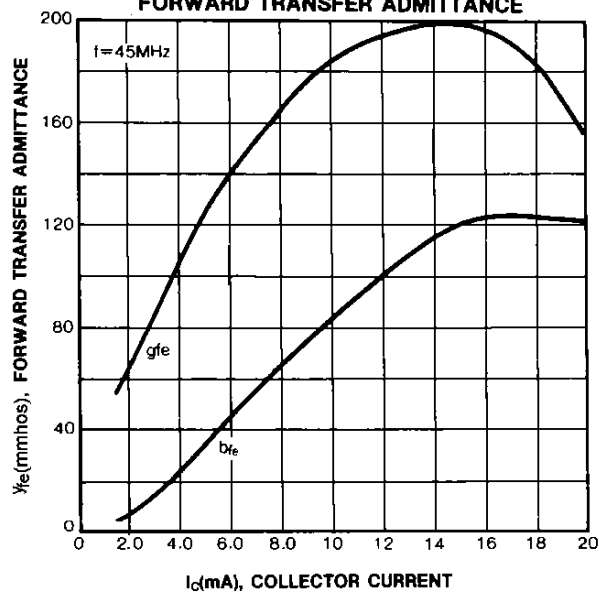
INPUT ADMITTANCE



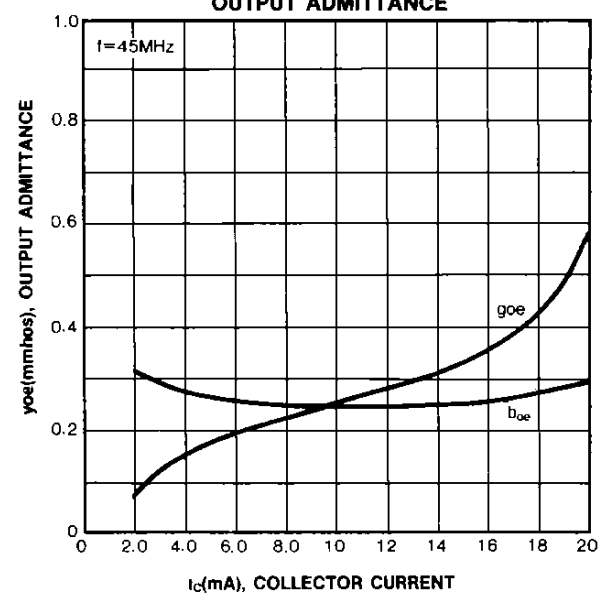
REVERSE TRANSFER ADMITTANCE



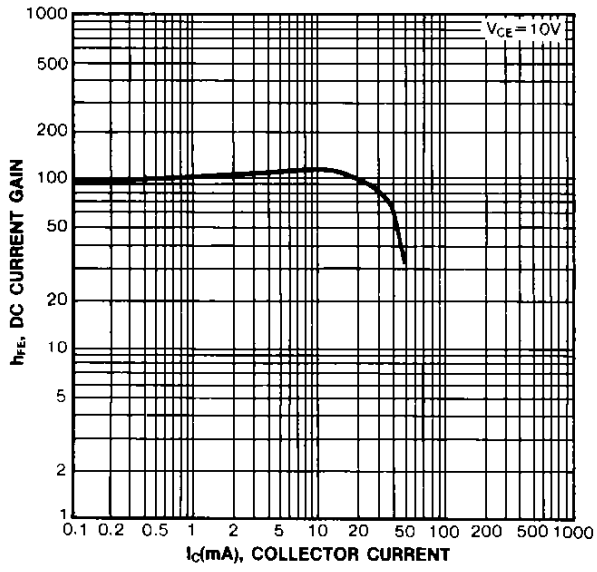
FORWARD TRANSFER ADMITTANCE



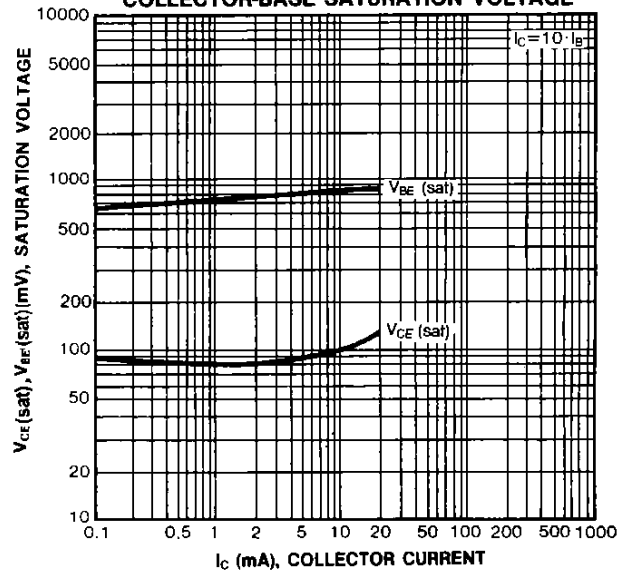
OUTPUT ADMITTANCE



DC CURRENT GAIN



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-BASE SATURATION VOLTAGE



CURRENT GAIN BANDWIDTH PRODUCT

