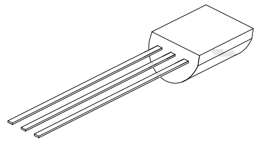
MPSH10A

NPN EPITAXIAL SILICON TRANSISTOR

RF TRANSISTOR



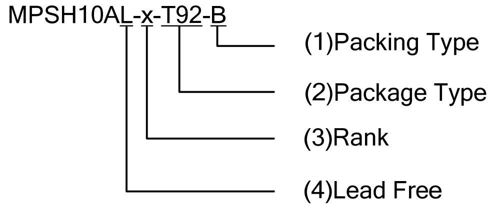
■ DESCRIPTION

The UTC **MPSH10A** is desinged for using as VHF and UHF oscillators and VHF Mixer in a tuner of a TV receiver.

■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
MPSH10A-x-T92-B	MPSH10AL-x-T92-B	MPSH10AG-x-T92-B	TO-92	B	E	C	Tape Box
MPSH10A-x-T92-K	MPSH10AL-x-T92-K	MPSH10AG-x-T92-K	TO-92	B	E	C	Bulk

Note: Pin assignment: E: EMITTER, C: COLLECTOR, B: BASE



(1) B: Tape Box, K: Bulk

(2) T92: TO-92

(3) x: refer to Classification of h_{FE}

(4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ ABSOLUTE MAXIMUM RATING (Ta=25°C,unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	3	V
Total Power Dissipation	Pc	350	mW
Collector Current	Ic	50	mA
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Note: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

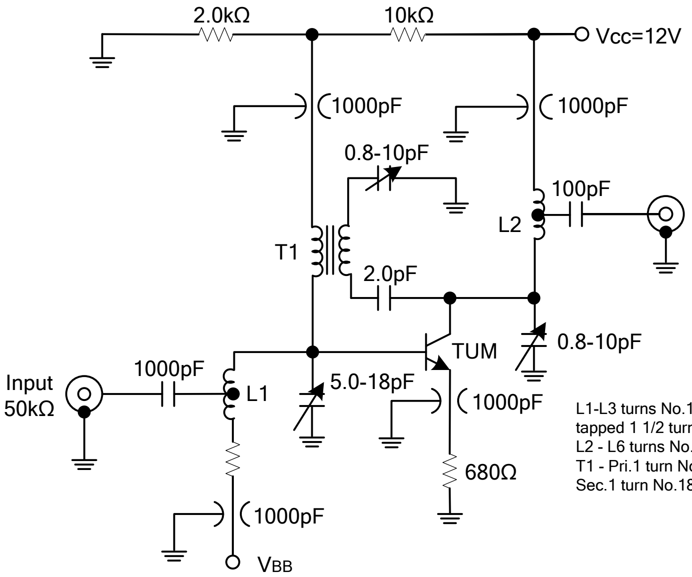
■ ELECTRICAL CHARACTERISTICS (Ta=25°C,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	Ic=100μA	30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	Ic=1mA	25			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA			3	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=25V			100	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=2V			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=4mA, I_B=400μA			500	mV
Base-Emitter On Voltage	$V_{BE(ON)}$	V_{CE}=10V, I_C=4mA			950	mV
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=4mA	60			
Output Capacitace	C_{OB}	V_{CB}=10V, f=1MHZ			0.7	pF
Current Gain Bandwidth Product	f_T	V_{CE}=10V, I_C=4mA, f=100MHZ	650			MHZ

■ CLASSIFICATION OF h_{FE}

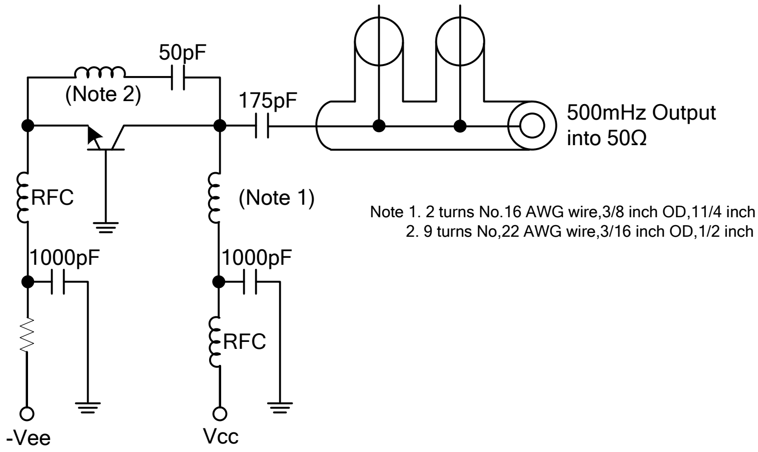
RANK	A	B	C
RANGE	60-100	90-130	120 -200

TEST CIRCUIT



L1-L3 turns No.16 wire,1/2 inch Lx 1/4 inch ID
tapped 1 1/2 turns from cold side
L2 - L6 turns No.14 wire,1 inch Lx inch ID
T1 - Pri.1 turn No.16 wire
Sec.1 turn No.18 wire

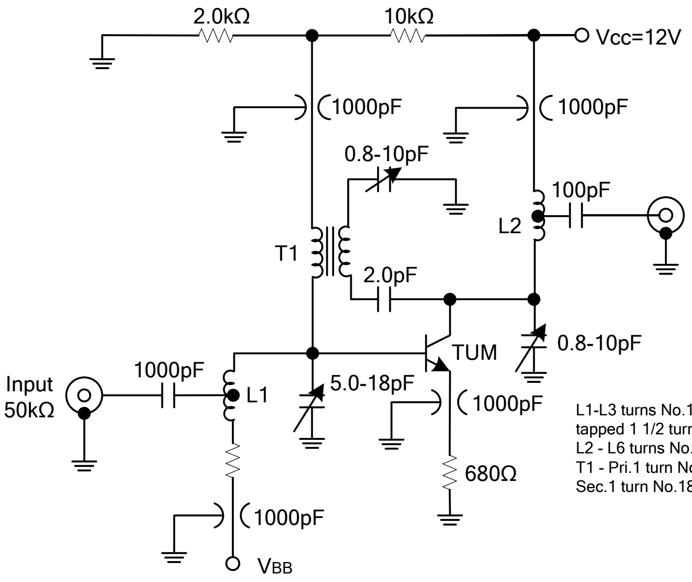
Figure 1. Neutralized 200 MHz PG and NF Circuit



Note 1. 2 turns No.16 AWG wire,3/8 inch OD,11/4 inch long
2. 9 turns No,22 AWG wire,3/16 inch OD,1/2 inch long

Figure 2. 500 MHz Oscillator Circuit

■ TEST CIRCUIT(Cont.)



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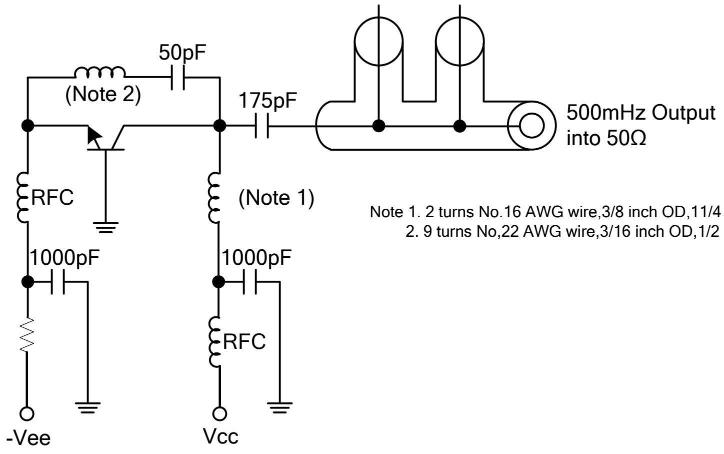

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