

DESCRIPTION

M5215L and M5215TL are semiconductor integrated circuits designed for FM IF amplifiers. These ICs contain differential-type amplifiers with excellent high-frequency characteristics, therefore, they are best suitable for IF amplifiers in FM stereo tuners, FM car radios, or cassette tape recoders with radio.

FEATURES

- High-gain and high-output due to the large bias current capacity ($I_{C2} = 8\text{mA}$)
- Small in size → Best suitable for portable devices or car components
- Bias current can be easily set using external resistors.
- Output can be obtained as a differential type.

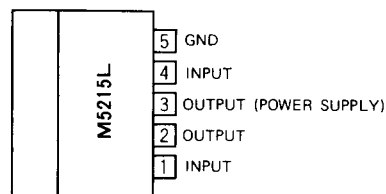
APPLICATION

IF amplifiers in FM stereo tuners, FM car radios, or cassette tape recorders with radios, IF amplifiers for TV noise, communication devices

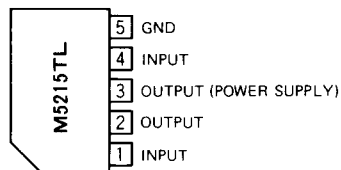
RECOMMENDED OPERATING CONDITIONS

Supply voltage range 4.5 ~ 12V
 Rated supply voltage 8.5V

PIN CONFIGURATION (TOP VIEW)

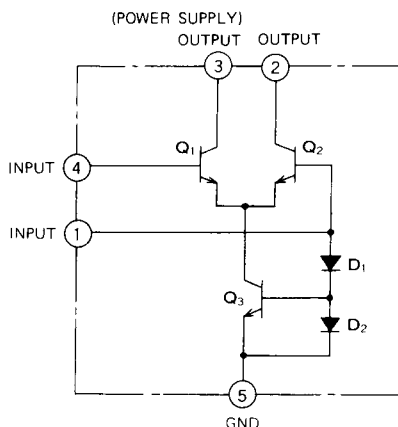


Outline 5P5



Outline 5P5T

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C, unless otherwise noted)

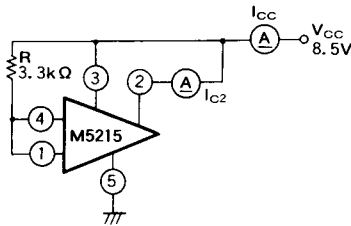
Symbol	Parameter	Conditions	Ratings	Unit
V _{CC}	Supply voltage		15	V
V _{OUT}	Potential at pin 2		24	V
V _{IN}	Input voltage	Pin ①—④	± 1.5	V
P _d	Power dissipation		250 (L)/450 (TL)	mW
K _θ	Thermal derating		2.5 (L)/4.5 (TL)	mW/°C
T _{opr}	Operating temperature	Ta ≥ 25 °C	-30 ~ +75	°C
T _{stg}	Storage temperature		-40 ~ +125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25 °C, V_{CC} = 8.5V, unless otherwise noted)

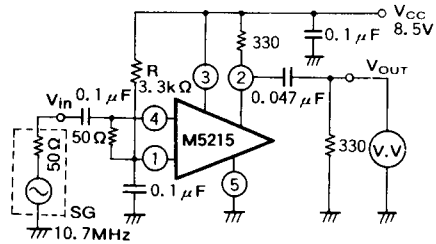
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{CC}	Circuit current	While no signal is present	8.0	9.5		mA
I _{C2}	Differential pair current	While no signal is present		3.6		mA
P _d	Power dissipation	While no signal is present		80		mW
G _v	Voltage gain	f = 10.7MHz	17.0	19.0		dB
Y _f	Foward transfer admittance	f = 10.7MHz		54		mS
Γ _{ip}	Parallel input capacitance	f = 10.7MHz		5.5		kΩ
C _{ip}	Parallel input capacitance	f = 10.7MHz		11		pF
Γ _{OP}	Parallel output resistance	f = 10.7MHz		33		kΩ
C _{OP}	Parallel output capacitance	f = 10.7MHz		5		pF

TEST CIRCUITS

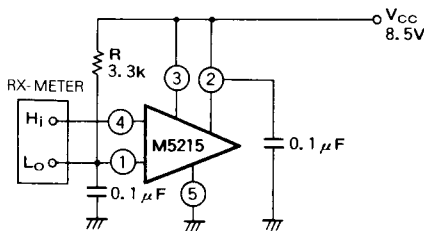
(a)



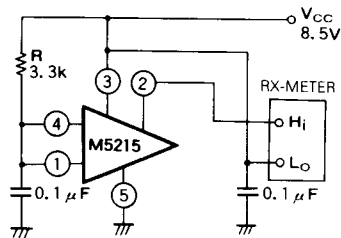
(b)



(c)

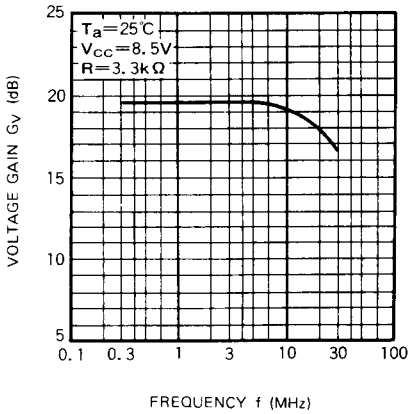


(d)

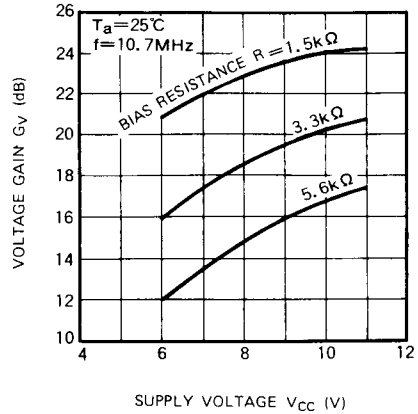


TYPICAL CHARACTERISTICS

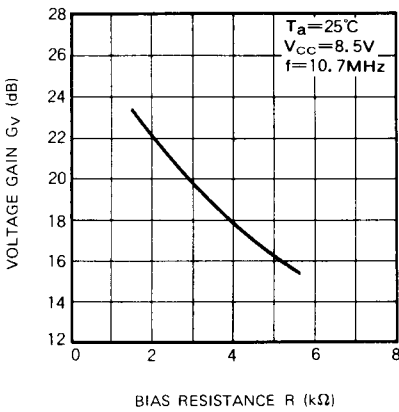
$G_v - f$ CHARACTERISTICS



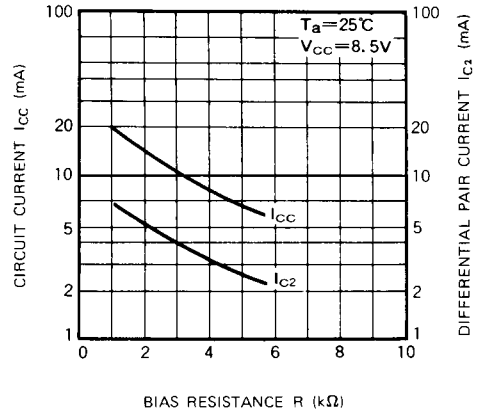
$G_v - V_{CC}$ CHARACTERISTICS



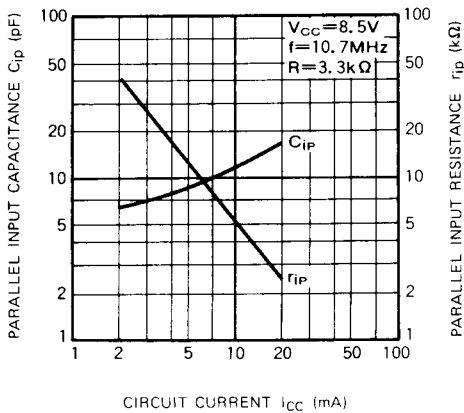
$G_v - R$ CHARACTERISTICS



$I_{CC}, I_{C2} - R$ CHARACTERISTICS



$C_{ip}, r_{ip} - I_{CC}$ CHARACTERISTICS



$C_{op}, r_{op} - I_{CC}$ CHARACTERISTICS

