

Transistors

2SC838

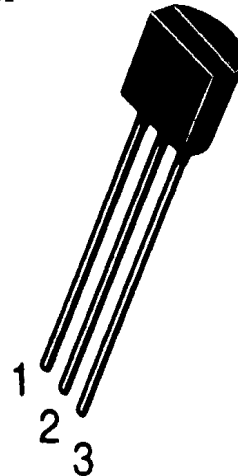
FM RADIO RF AMP, MIX, CONV, OSC, IF AMP

- High Current Gain Bandwidth Product $f_T = 250\text{MHz}$ (Typ)

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	35	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	30	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ\text{C}$

TO-92



1 Emitter 2. Base 3. Collector

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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	35			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 5\text{mA}$, $I_B = 0$	30			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu\text{A}$, $I_C = 0$	4			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{V}$, $I_E = 0$			0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 12\text{V}$, $I_C = 2\text{mA}$	40		240	
Base-Emitter On Voltage	$V_{BE}(\text{on})$	$V_{CE} = 6\text{V}$, $I_C = 1\text{mA}$	0.65	0.75	0.75	V
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = 10\text{mA}$, $I_B = 1\text{mA}$		0.1	0.4	V
Current Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$	100	250		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$		2.0	3.2	pF

h_{FE} CLASSIFICATION

Classification	R	O	Y
h_{FE}	40-80	70-140	120-240

