

Silicon NPN Transistor

2SC2055 / C2055

RF amplifier and VHF mobile radio

18V / 0.3A

DATASHEET

OEM –Mitsubishi

Source: Mitsubishi Databook 1995

MITSUBISHI RF POWER TRANSISTOR
2SC2055
NPN EPITAXIAL PLANAR TYPE

DESCRIPTION

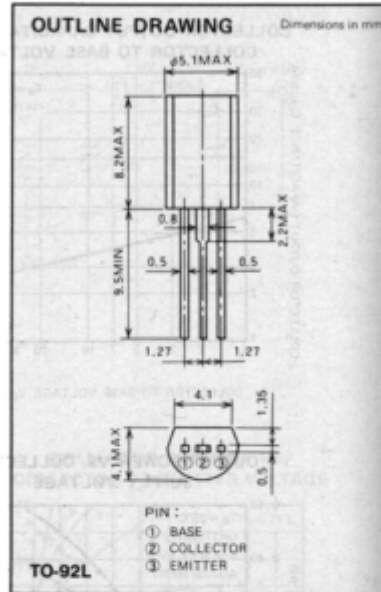
2SC2055 is a silicon NPN epitaxial planar type transistor designed for RF amplifiers on VHF band portable or hand-held radio applications.

FEATURES

- High power gain: $G_{pe} \geq 13\text{dB}$
@ $V_{CC} = 7.2\text{V}$, $P_o = 0.2\text{W}$, $f = 175\text{MHz}$
- Emitter ballasted construction, gold metallization for high reliability and good performances.
- TO-92 similar package is combinient for mounting.

APPLICATION

Driver amplifiers in general in VHF band portable or hand-held radio applications.



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Rating	Unit
V_{CBO}	Collector to base voltage		18	V
V_{EBO}	Emitter to base voltage		4	V
V_{CEO}	Collector to emitter voltage	$R_{BE} = \infty$	9	V
I_C	Collector current		0.3	A
P_C	Collector dissipation	$T_a = 25^\circ\text{C}$	0.5	W
T_j	Junction temperature		135	$^\circ\text{C}$
T_{stg}	Storage temperature		-55 to 135	$^\circ\text{C}$
R_{th-a}	Thermal resistance	Junction to ambient	220	$^\circ\text{C}/\text{W}$

Note. Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise specified)

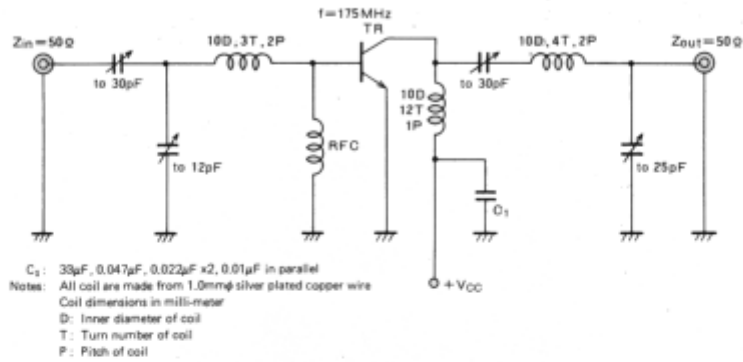
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)EBO}$	Emitter to base breakdown voltage	$I_E = 1\text{mA}$, $I_C = 0$	4			V
$V_{(BR)CBO}$	Collector to base breakdown voltage	$I_C = 10\text{mA}$, $I_E = 0$	18			V
$V_{(BR)CEO}$	Collector to emitter breakdown voltage	$I_C = 10\text{mA}$, $R_{BE} = \infty$	9			V
I_{CBO}	Collector cutoff current	$V_{CB} = 10\text{V}$, $I_E = 0$			30	μA
I_{EBO}	Emitter cutoff current	$V_{EB} = 3\text{V}$, $I_C = 0$			30	μA
h_{FE}	DC forward current gain*	$V_{CE} = 1\text{V}$, $I_C = 50\text{mA}$	10	50	180	—
P_O	Output power	$V_{CC} = 7.2\text{V}$, $P_{in} = 10\text{mW}$, $f = 175\text{MHz}$	0.2	0.25		W
η_C	Collector efficiency		50	60		%

Note. * Pulse test, $P_w = 150\mu\text{s}$, duty = 5%.
Above parameters, ratings, limits and conditions are subject to change.

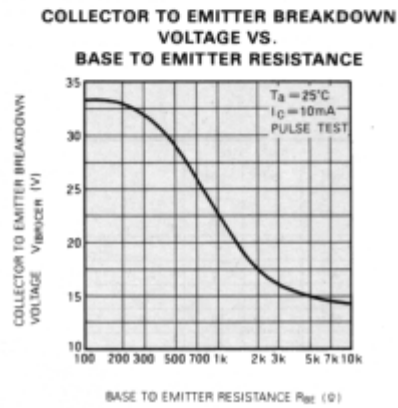
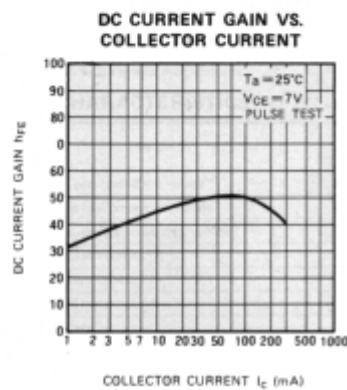
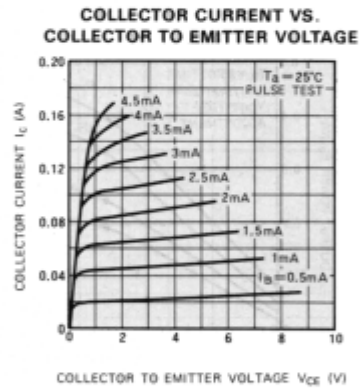
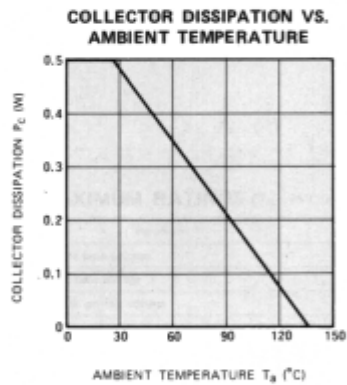
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TEST CIRCUIT



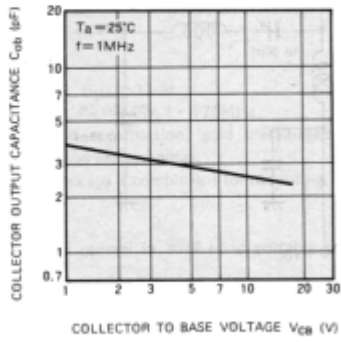
TYPICAL PERFORMANCE DATA



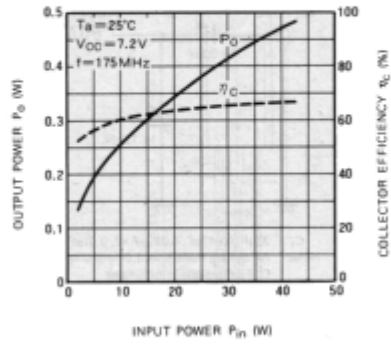
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NPN EPITAXIAL PLANAR TYPE

COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



OUTPUT POWER, COLLECTOR EFFICIENCY VS. INPUT POWER



OUTPUT POWER VS. COLLECTOR SUPPLY VOLTAGE

