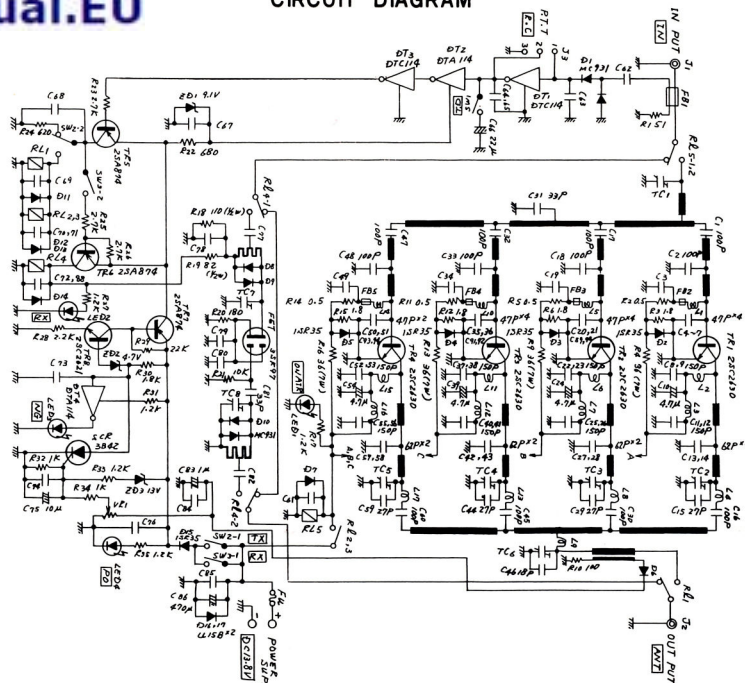


2M-190G 回路図 CIRCUIT DIAGRAM



指定なき抵抗は $\frac{1}{4}W$ とする。

指定なきダイオードは1S2473とする。

指定なきコンデンサは1000PFとする。

部品及び回路等は技術開発、その他により予告なく変更のことがあります。

ALL RESISTORS ARE IN $\frac{1}{4}W$ UNLESS OTHERWISE NOTED
ALL DIODES ARE IN 1S2473 UNLESS OTHERWISE NOTED
ALL CAPACITORS ARE IN 1000PF UNLESS OTHERWISE NOTED
ON ACCOUNT OF THE TECHNICAL DEVELOPMENT AND FOR
OTHER REASONS, ALL OF THE PARTS AND THE CIRCUIT ARE
SUBJECT TO CHANGE WITHOUT NOTICE

DESCRIPTION

2SC2630 is a silicon NPN epitaxial planar type transistor designed for RF power amplifiers in VHF band mobile radio applications.

FEATURES

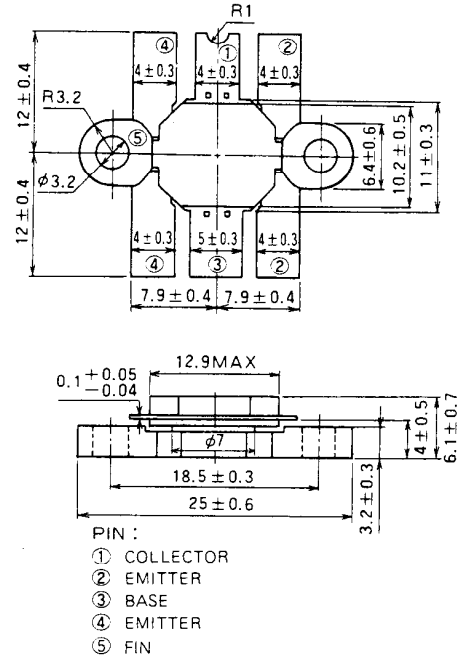
- High power gain: $G_{pe} \geq 7\text{dB}$
@ $V_{CC} = 12.5\text{V}$, $P_O = 50\text{W}$, $f = 175\text{MHz}$
- Emitter ballasted construction and gold metallization for high reliability and good performances.
- Low thermal resistance ceramic package with flange.
- Ability of withstanding more than 20:1 load VSWR when operated at $V_{CC} = 15.2\text{V}$, $P_O = 50\text{W}$, $f = 175\text{MHz}$, $T_C = 25^\circ\text{C}$.
- Equivalent input/output series impedance:
 $Z_{in} = 0.8 + j1.2\Omega$ @ $P_O = 60\text{W}$, $V_{CC} = 12.5\text{V}$, $f = 175\text{MHz}$
 $Z_{out} = 1.5 - j0.6\Omega$

APPLICATION

40 to 60 watts output power amplifiers in VHF band mobile radio applications.

OUTLINE DRAWING

Dimensions in mm



T-40

NOTE: ALL ELECTRODES ARE ISOLATED FROM FLANGE.

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

Symbol	Parameter	Conditions	Ratings	Unit
V_{CBO}	Collector to base voltage		35	V
V_{EBO}	Emitter to base voltage		4	V
V_{CEO}	Collector to emitter voltage	$R_{BE} = \infty$	17	V
I_C	Collector current		14	A
P_C	Collector dissipation	$T_a = 25^\circ\text{C}$	5.5	W
		$T_C = 25^\circ\text{C}$	100	
T_j	Junction temperature		175	$^\circ\text{C}$
T_{stg}	Storage temperature		-55 to 175	$^\circ\text{C}$
R_{th-a}	Thermal resistance	Junction to ambient	27.2	$^\circ\text{C/W}$
R_{th-c}		Junction to case	1.5	$^\circ\text{C/W}$

Note: Above parameters are guaranteed independently.

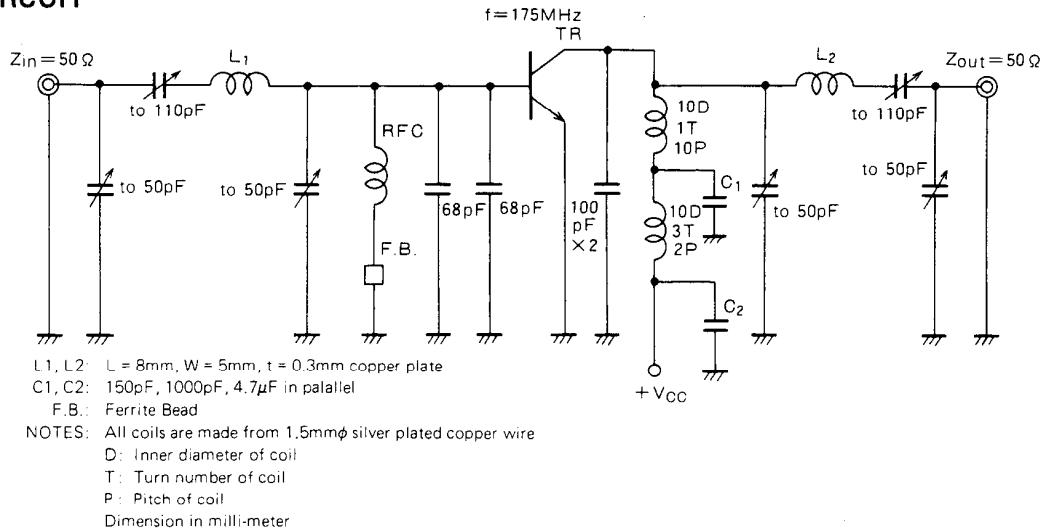
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)EBO}$	Emitter to base breakdown voltage	$I_E = 10\text{mA}$, $I_C = 0$	4			V
$V_{(BR)CBO}$	Collector to base breakdown voltage	$I_C = 10\text{mA}$, $I_E = 0$	35			V
$V_{(BR)CEO}$	Collector to emitter breakdown voltage	$I_C = 0.1\text{A}$, $R_{BE} = \infty$	17			V
I_{CBO}	Collector cutoff current	$V_{CB} = 15\text{V}$, $I_E = 0$			5	mA
I_{EBO}	Emitter cutoff current	$V_{EB} = 3\text{V}$, $I_C = 0$			5	mA
h_{FE}	DC forward current gain *	$V_{CE} = 10\text{V}$, $I_C = 0.2\text{A}$	10	40	180	—
P_O	Output power	$V_{CC} = 12.5\text{V}$, $P_{in} = 10\text{W}$, $f = 175\text{MHz}$	50	60		W
η_C	Collector efficiency		60	70		%

Note: * Pulse test, $P_W = 150\mu\text{s}$, duty=5%.

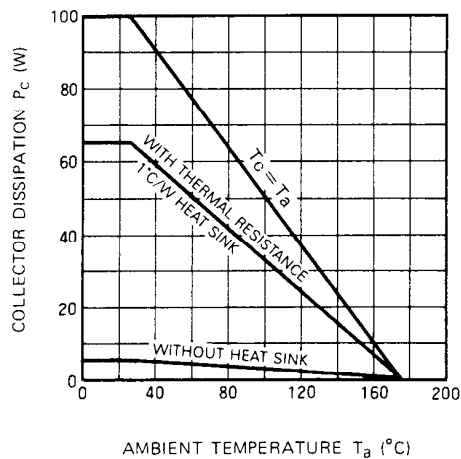
Above parameters, ratings, limits and conditions are subject to change.

TEST CIRCUIT

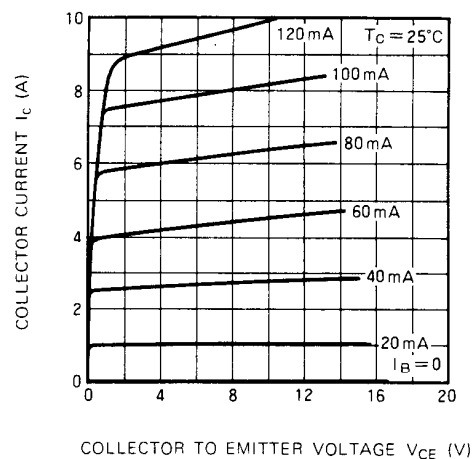


TYPICAL PERFORMANCE DATA

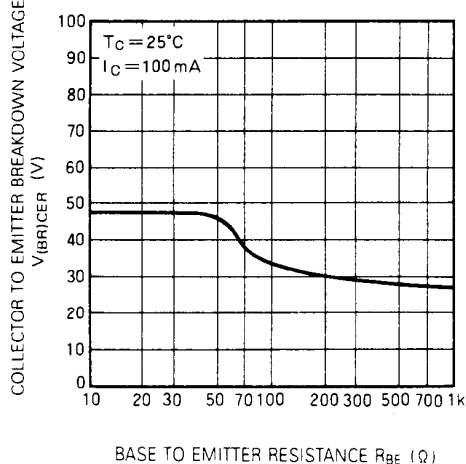
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



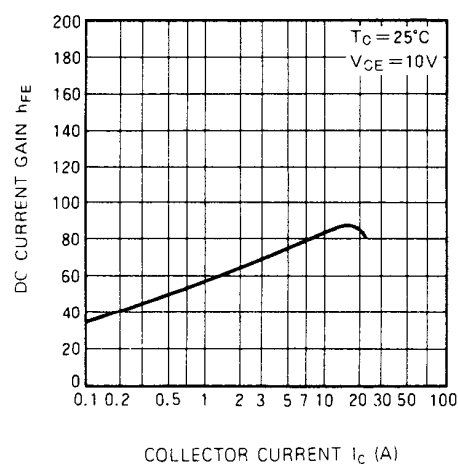
COLLECTOR CURRENT VS. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR TO EMITTER BREAKDOWN VOLTAGE VS. BASE TO EMITTER RESISTANCE

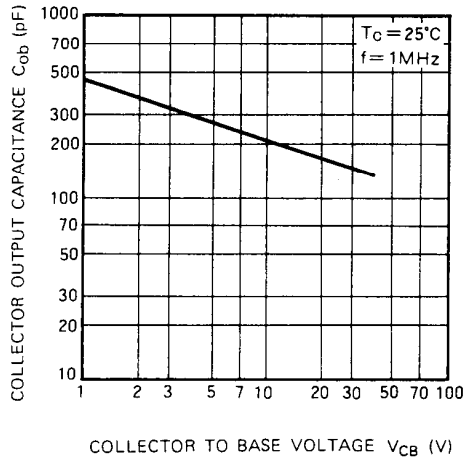


DC CURRENT GAIN VS. COLLECTOR CURRENT

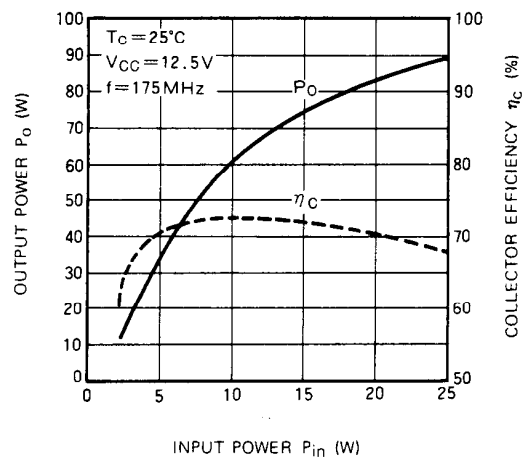


NPN EPITAXIAL PLANAR TYPE

**COLLECTOR OUTPUT CAPACITANCE VS.
 COLLECTOR TO BASE VOLTAGE**



**OUTPUT POWER, COLLECTOR
 EFFICIENCY VS. INPUT POWER**



**OUTPUT POWER VS. COLLECTOR
 SUPPLY VOLTAGE**

