TOSHIBA 2SC3147

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2 S C 3 1 4 7

VHF BAND POWER AMPLIFIER APPLICATIONS

Output Power : Po=50W (Min.)

 $(f=175MHz, V_{CC}=12.5V, \eta_{C}=70\% (Typ.)$

High Efficiency: $\eta_{\rm C} = 70\%$ (Typ.)

MAXIMUM RATINGS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	v_{CBO}	36	V
Collector-Emitter Voltage	v_{CEO}	16	V
Emitter-Base Voltage	$V_{ m EBO}$	4	V
Collector Current	$I_{\mathbf{C}}$	14	A
Collector Power Dissipation	$P_{\mathbf{C}}$	150	W
Junction Temperature	T_{j}	175	°C
Storage Temperature Range	$T_{ m stg}$	-65~175	°C

18.4 ± 0.5 3.9 ± 0.3 (5) 2-ø3.2 5.2±0.3 68±07 4.2±0.4 24.6 ± 0.5 1. EMITTER 4. EMITTER 2. EMITTER 5. EMITTER 6. COLLECTOR 3. BASE **JEDEC** EIAJ TOSHIBA 2-13C1A

Unit in mm

Weight: 5.5g

ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Base Breakdown Voltage	V _(BR) CBO	$I_{\rm C}$ =20mA, $I_{\rm E}$ =0	36	_	_	V
Collector-Emitter Breakdown Voltage	V _(BR) CEO	$I_{C} = 50 \text{mA}, I_{B} = 0$	16	_	_	V
Emitter-Base Breakdown Voltage	V _(BR) EBO	$I_E=1mA, I_C=0$	4	_	_	V
DC Current Gain	$\mathbf{h_{FE}}$	$V_{CE} = 5V$, $I_{C} = 5A *$	10	_	_	
Collector Output Capacitance	C_{ob}	$V_{CB} = 12.5V, I_{E} = 0$ f=1MHz	_	_	330	pF
Output Power	Po	V_{CC} =12.5V, f=175MHz Pi=10W, η_C \geq60%	50	60		W
Series Equivalent Input Impedance	Zin	V _{CC} =12.5V f=175MHz, Po=50W	_	1.1 +j3.0	_	Ω
Series Equivalent Output Impedance	Z _{out}		_	1.5 + j2.5	_	Ω

^{*}Pulse Test : Pulse Width $\leq 100 \mu$ s, Duty Cycle $\leq 3\%$

CAUTION

Beryllia Ceramics is used in this product. The dust or vapor can be dangerous to humans. Do not break, cut, crush or dissolve chemically. Dispose of this properly according to law. Do not intermingle with normal industrial or domestic waste.

961001EAA2

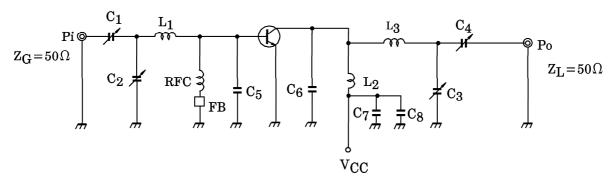
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Fig. Po TEST CIRCUIT



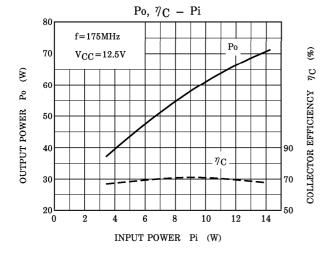
: ∼20pF

C₁~C₄ : 156pF (39pF×4) CERAMIC CONDENSER : 132pF (33pF×4) CERAMIC CONDENSER

: 0.01μF CERAMIC CONDENSER

: ϕ 1.5mm SILVER PLATED COPPER WIRE, 10 ID, 1T : ϕ 1.5mm SILVER PLATED COPPER WIRE, 10 ID, 2T RFC : ϕ 1mm ENAMEL COATED COPPER WIRE, 6 ID, 10T

FB: FERRITE BEAD



CAUTION

These are only typical curves and devices are not necessarily guaranteed at these curves.