

Product Features

2.7-3.5GHz:>600W, pulsed CW

50% Drain Efficiency@50V

50ohm in and out, screw down

Device used: STCV35600BY2

Applications

5G Power amplifier

S band communication

ISM

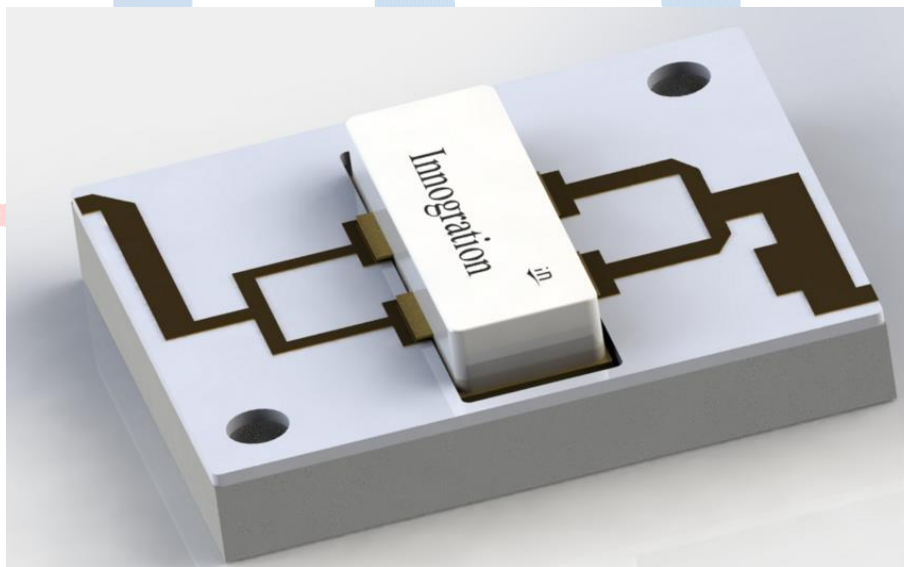
Commercial pulsed CW Power amplifier

Description

The SMPA2735-600V is designed for 5G communication, test and measurement and other ISM applications at 2700-3500MHz. This Amplifier pallet is suitable for use in linear and saturated applications. Featured by 50ohm fully matched at input and output, drop-in placement by screwing it down and 100% RF test, it enables easier power combination to reach higher power with high production yield as part of customer's power amplifier system.

This standard pallet is with typical size 50*90mm, but can be shrunk to much smaller size.

Pallet concept demonstration purpose only, Not exactly the design itself



Electrical Specifications @VCC=50V, T=25°C, 50Ωsystem

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	2700	-	3500	f _o
Operating Bandwidth	MHz	800		-	OBW
Pulse CW Output Saturated Power	W	600		-	P _{sat}
Power Gain	dB		8	-	G _p
Gain Flatness	dB	-	-	±0.5	G _F
Input Return Loss	dB	-	-4		S ₁₁
Operating Voltage	V	-	50	55	V _{DS}
Quiescent Current	mA	-	100	-	I _{DQ}
Efficiency@P _{sat}	%	50		-	Eff

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case Temperature	°C	-40	-	60	T _a
Storage Temperature	°C	-40		100	T _{stg}
Relative humidity w/o condensation	%	-	-	95	RH

Mechanical Specifications

PARAMETER	UNIT	VALUE
Dimensions(L × W × H)	mm	50×90×4
RF Input Connector	-	N/A
RF Output Connector	-	N/A
Cooling	-	External Heat-sink

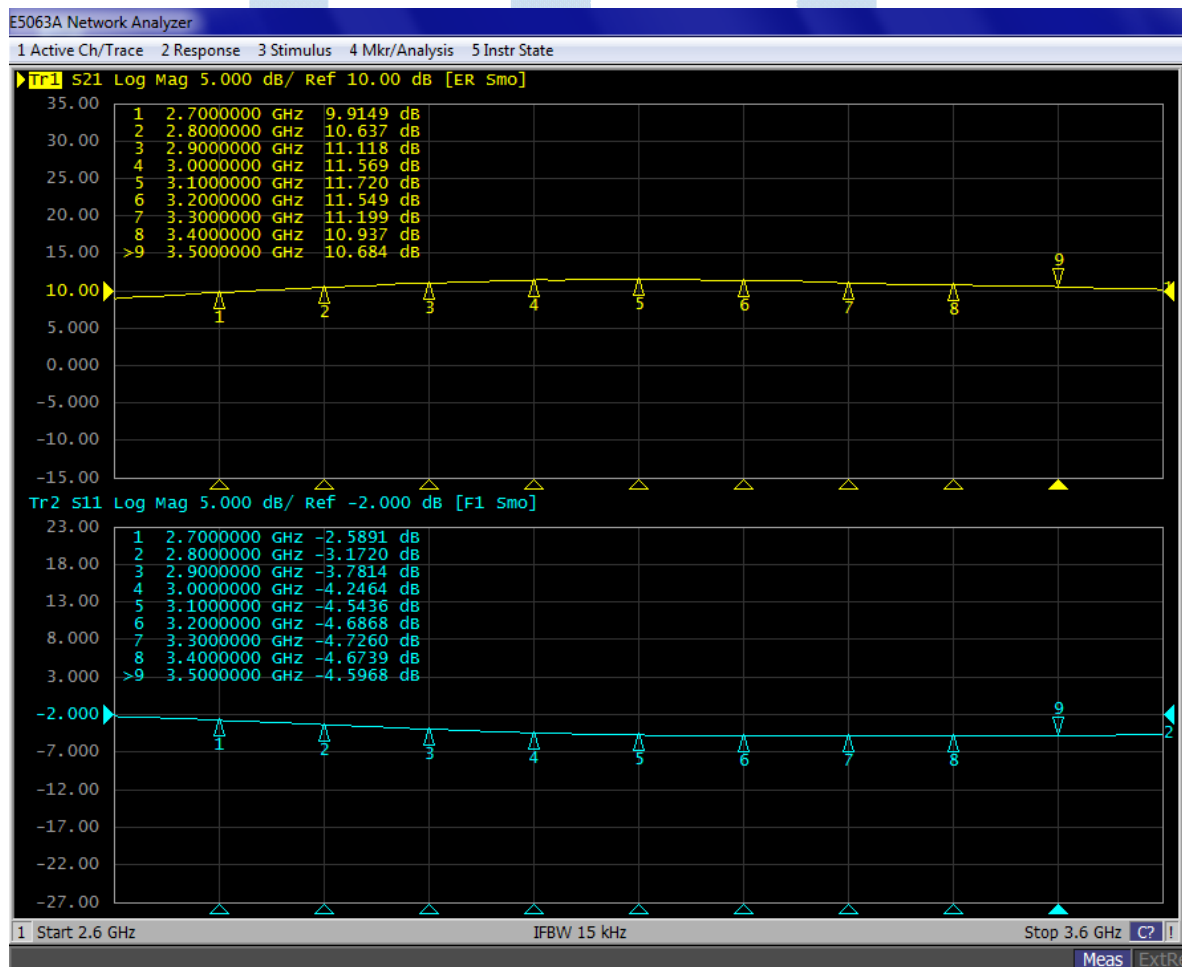
Typical performance

Pulsed CW performance:

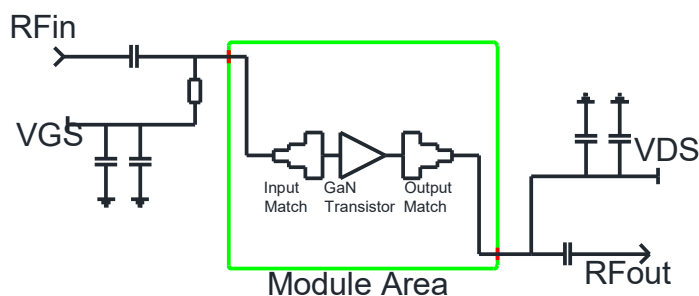
$V_{ds} = 50V$, $V_{gs} = -3.28V$, $I_{dq} = 110\text{ mA}$ Signal mode: Pulse 100us, 10%

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	Ids(A)	Gain(dB)	Eff(%)
2700	50.10	58.18	657.7	2.24	8.1	58.7
2800	50.15	58.37	687.1	2.28	8.2	60.3
2900	50.00	58.50	707.9	2.41	8.5	58.8
3000	50.00	58.40	691.8	2.42	8.4	57.2
3100	50.15	58.35	683.9	2.31	8.2	59.2
3200	50.00	58.20	660.7	2.39	8.2	55.3
3300	50.00	58.10	645.7	2.46	8.1	52.5
3400	50.00	58.27	671.4	2.65	8.3	50.7
3500	50.00	58.20	660.7	2.65	8.2	49.9

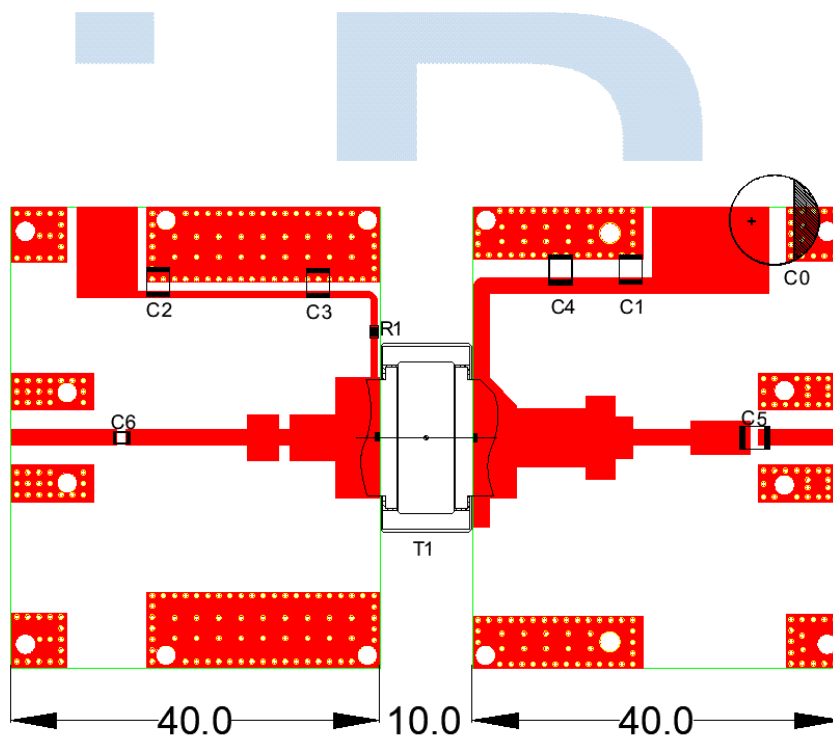
S21/S11 from network analyzer VDS=50V VGS=-3.02V IDQ=600mA



Evaluation board Block Diagram

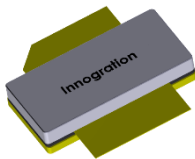


Evaluation board outline (DUT:STCV35600BY2)

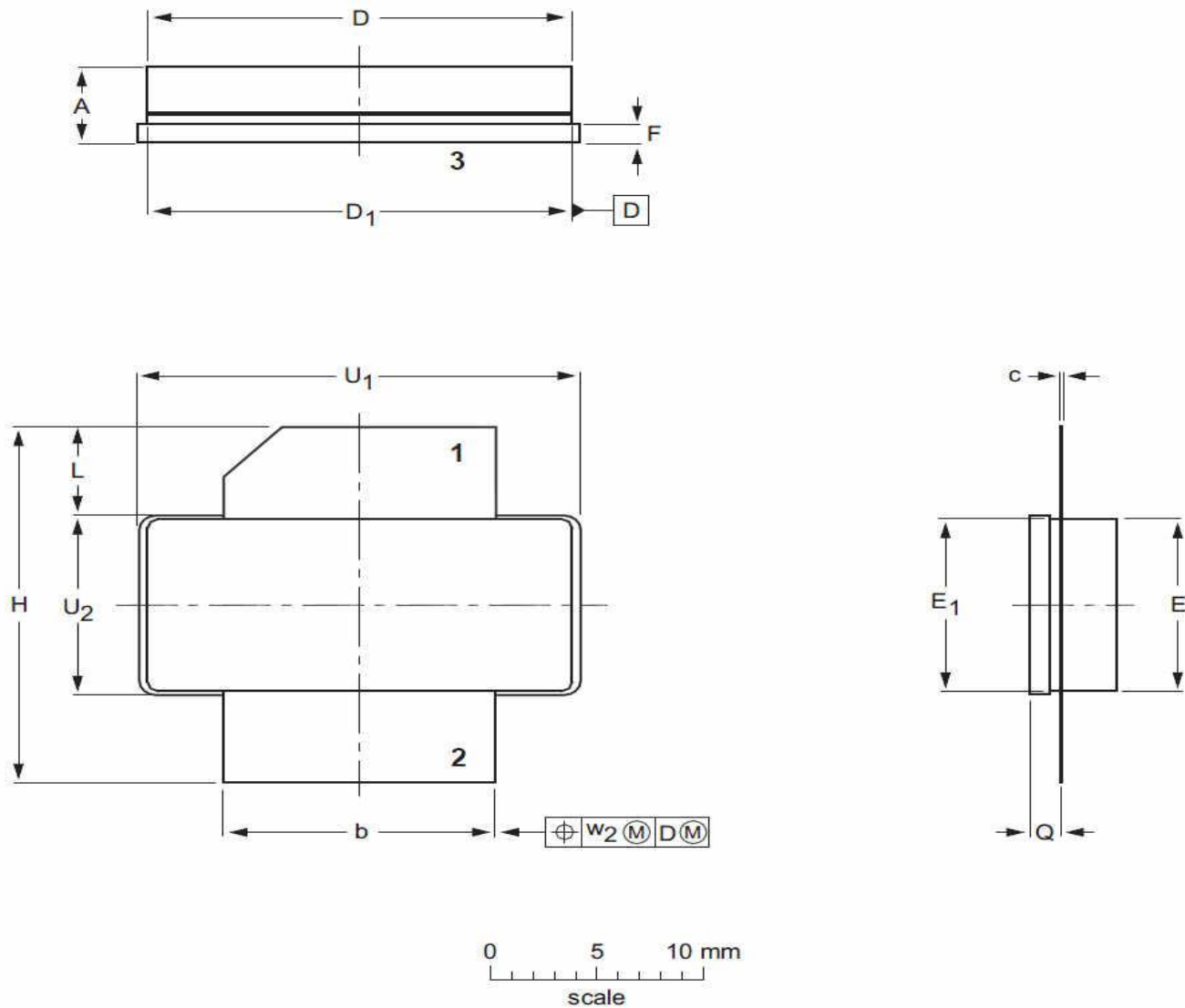


Reference Designator	Description	Quantity	Suggestion
C0	470uF/63V	1	
C1, C2	10uF/200V, 1210	2	
C3, C6	10 pF, 0805/1111	2	Beijing YuanLu HongYuan Electronic Technology CO., LTD
C4, C5	9.1 pF, 1111	2	
R1	10 Ω , 0805/1206	1	Murata
T1	STCV35600BY2 V0	1	Innegration
PCB	Rogers 4350B, 30mil		-

Transistor information: STCV35600BY2



Earless flanged ceramic package; 2 leads (1—DRAIN、2—GATE、3—SOURCE)



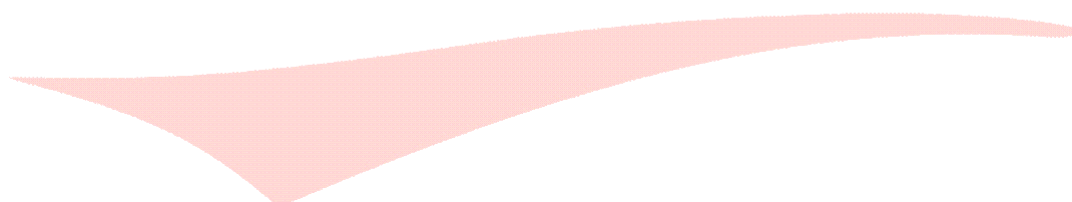
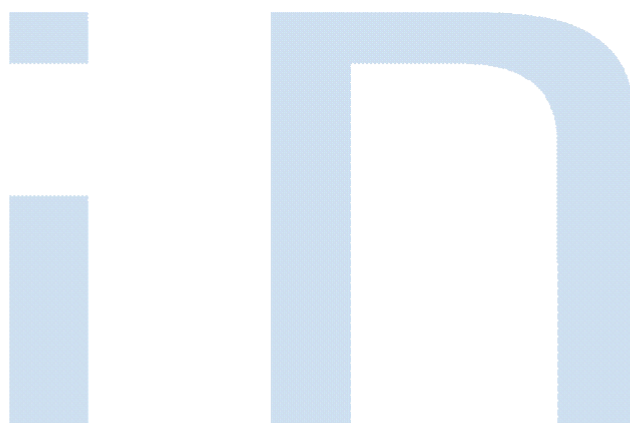
UNIT	A	b	c	D	D ₁	E	E ₁	F	H	L	Q	U ₁	U ₂	W ₂
mm	4.72	12.83	0.15	20.02	19.96	9.50	9.53	1.14	19.94	5.33	1.70	20.70	9.91	0.25
	3.43	12.57	0.08	19.61	19.66	9.30	9.25	0.89	18.92	4.32	1.45	20.45	9.65	
inches	0.186	0.505	0.006	0.788	0.786	0.374	0.375	0.045	0.785	0.210	0.067	0.815	0.390	0.010
	0.135	0.495	0.003	0.772	0.774	0.366	0.364	0.035	0.745	0.170	0.057	0.805	0.380	

Revision History

Document revision history

Date	Revision	Datasheet Status
2026/6/29	Rev 1.0	Preliminary Datasheet based on V0

Application data based on RXT-26-15



Disclaimers

Specifications are subject to change without notice. Innograti^on believes the information contained within this data sheet to be accurate and reliable. However, no responsibility is assumed by Innograti^on for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Innograti^on. Innograti^on makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose. "Typical" parameters are the average values expected by Innograti^on in large quantities and are provided for information purposes only. These values can and do vary in different applications and actual performance can vary over time. All operating parameters should be validated by customer's technical experts for each application. Innograti^on products are not designed, intended or authorized for use as components in applications intended for surgical implant into the body or to support or sustain life, in applications in which the failure of the Innograti^on product could result in personal injury or death or in applications for planning, construction, maintenance or direct operation of a nuclear facility. For any concerns or questions related to terms or conditions, pls check with Innograti^on and authorized distributors

Copyright © by Innograti^on (Suzhou) Co.,Ltd.