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MLT2432B

May 2015

2.4 GHz -3.2 GHz

Output Limiting Amplifier

Data Sheet

Description

MLT2432B is 2.4 GHz to 3.2 GHz wideband output limiting amplifier with very flat output power. The input is matched to 50 Ω with DC blocking capacitors. No external matching components or DC bypassing capacitor are needed.

MLT2432B has low current consumption over -20dBm to -10dBm input power range. The compact size and thin thickness design are suitable for portable device applications.

Features

- 260 mil x 420 mil surface mount package
- Excellent flatness in S21
- Fully matched in S11 S22
- 10dBm output power for -20dBm to -10dBm input power range
- Unconditionally stable across load condition
- Single 5V supply

Applications

- Mobile Infrastructures
- WiMAX
- Defense
- Security System
- Measurement
- Fixed Wireless

Specifications at 2.8 GHz 5V 50mA with -20dBm input power (typical)

- 10.7dBm output power
- -17dB input return loss
- -18dB output return loss
- 50.1mA current consumption at 55°C
- 50.5mA current consumption at -40°C

Electrical Specifications at 25°C

index	Testing Item	Symbol	Test Conditions	min	nom	max	unit
1	Operating input power range	Pin		-20		-10	dBm
2	Output power with -20dBm input power	Pout	2.4 GHz - 3.2 GHz	10.0		10.8	dBm
3	Output power with -10dBm input power	Pout	2.4 GHz - 3.2 GHz	10.1		10.6	dBm
4	Output power variation with -20dBm input power	Δ Pout	2.4 GHz - 3.2 GHz		+/-0.35	+/-0.4	dB
5	Output power variation with -10dBm input power	Δ Pout	2.4 GHz - 3.2 GHz		+/-0.25	+/-0.3	dB
6	Input return loss with -20dBm input power	S11	2.4 GHz - 3.2 GHz	-16	-16.5		dB
7	Current consumption without input power	Idd	25°C		50	52	mA
8	Power supply operating voltage	Vdd		4.7	5	5.3	V
9	Maximum average RF input power	Pin,max	DC to 6 GHz			0	dBm
10	Operating Temperature	To		-40		55	°C
11	Storage temperature	Ts		-55		150	°C

Ordering information

Model Number	MLT2432B

Typical Data

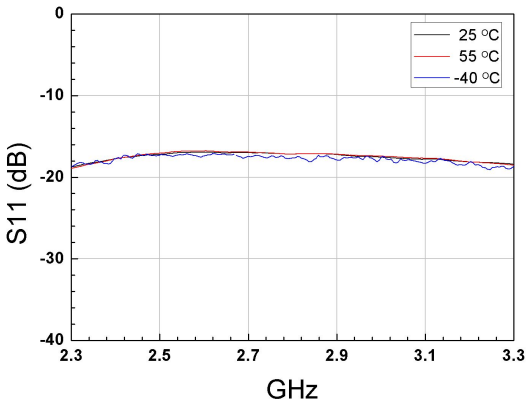


Figure.1 S11 vs Temperature with -20dBm input power

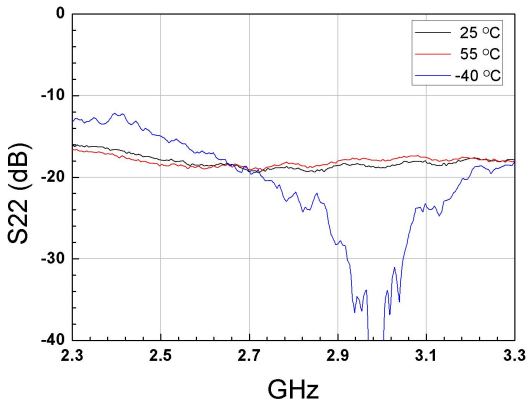


Figure.2 S22 vs Temperature with -20dBm input power

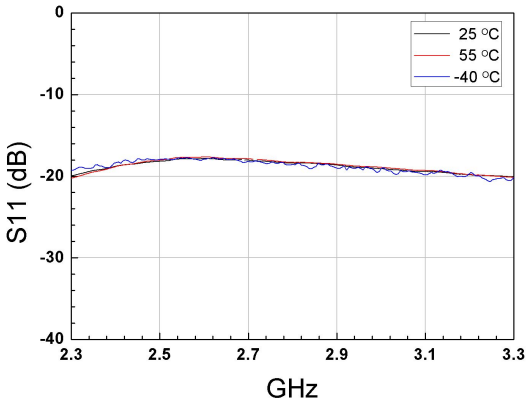


Figure.3 S11 vs Temperature with -18dBm input power

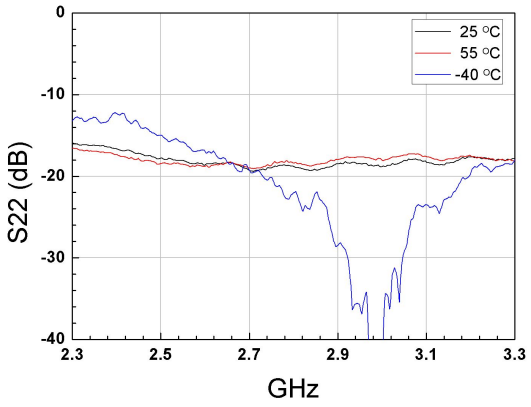


Figure.4 S22 vs Temperature with -18dBm input power

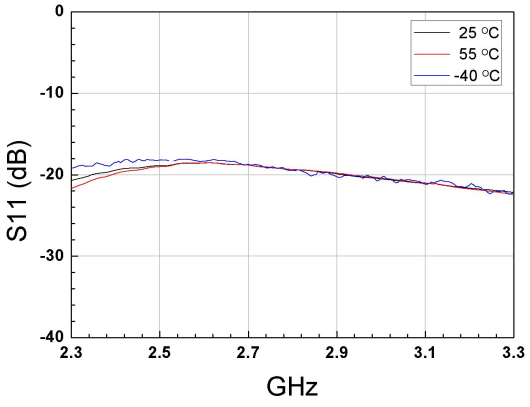


Figure.5 S11 vs Temperature with -16dBm input power

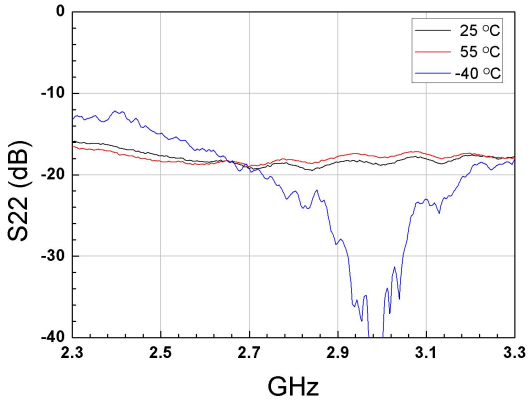


Figure.6 S22 vs Temperature with -16dBm input power

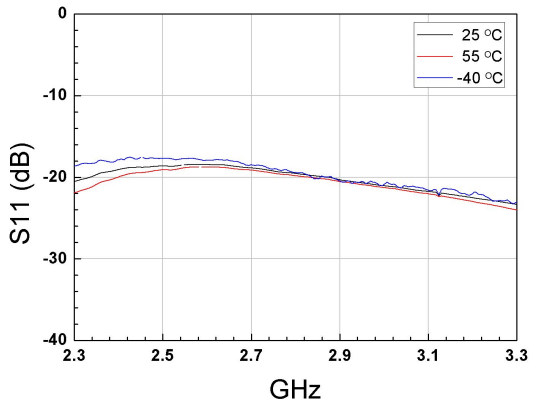


Figure.7 S11 vs Temperature with -14dBm input power

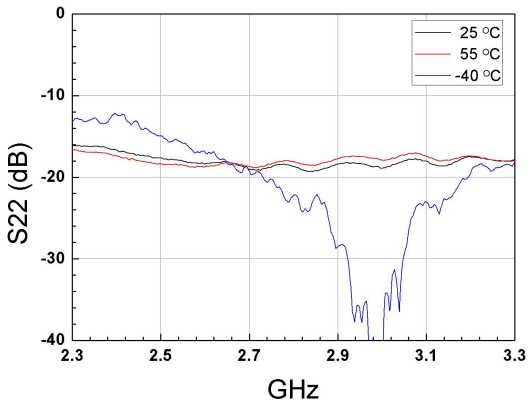


Figure.8 S22 vs Temperature with -14dBm input power

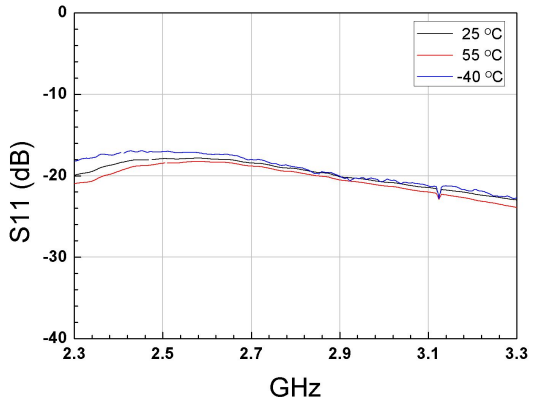


Figure.9 S11 vs Temperature with -12dBm input power

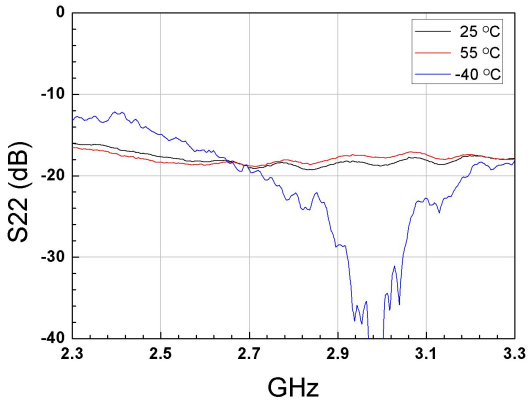


Figure.10 S22 vs Temperature with -12dBm input power

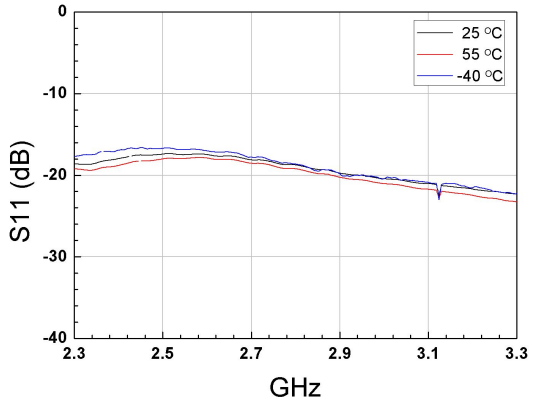


Figure.11 S11 vs Temperature with -10dBm input power

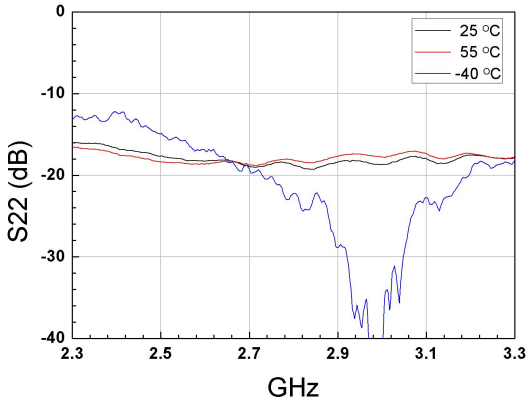


Figure.12 S22 vs Temperature with -10dBm input power

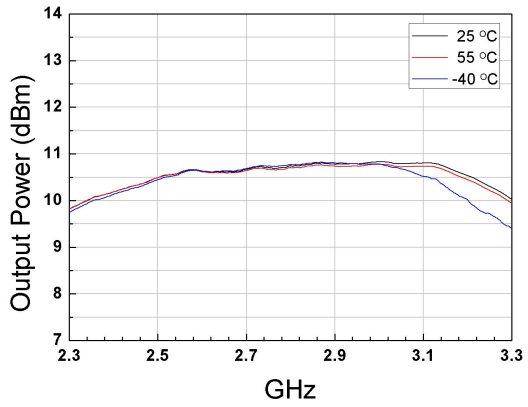


Figure.13 Output Power with -20dBm input power

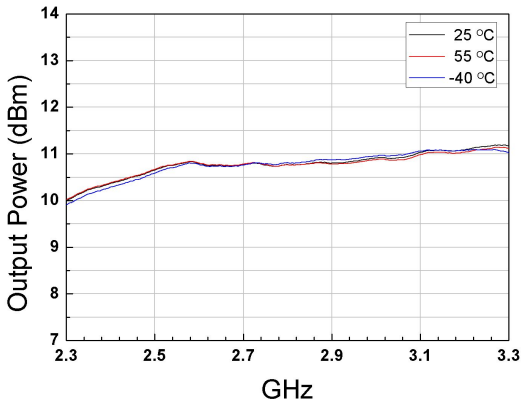


Figure.14 Output Power with -18dBm input power

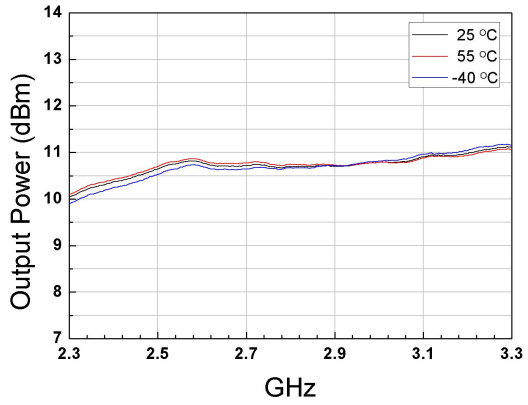


Figure.15 Output Power with -16dBm input power

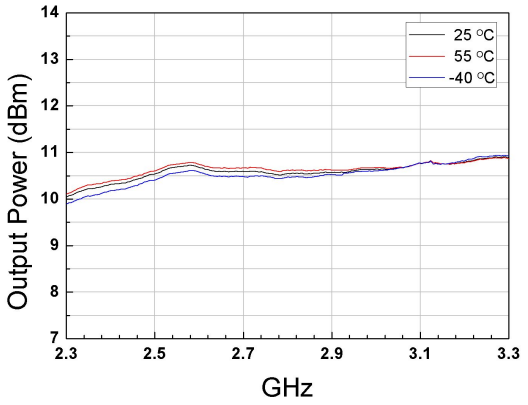


Figure.16 Output Power with -14dBm input power

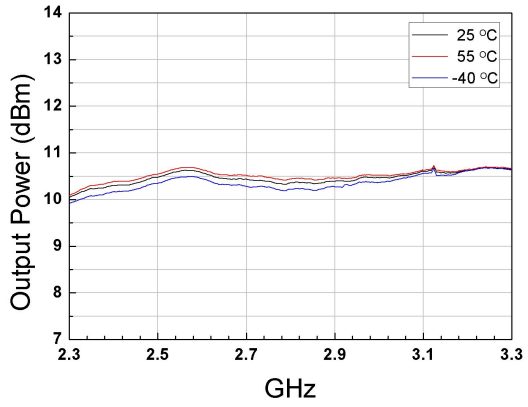


Figure.17 Output Power with -12dBm input power

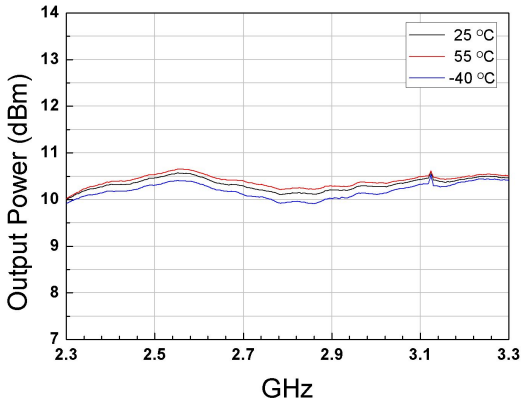


Figure.18 Output Power with -10dBm input power

Solder reflow.

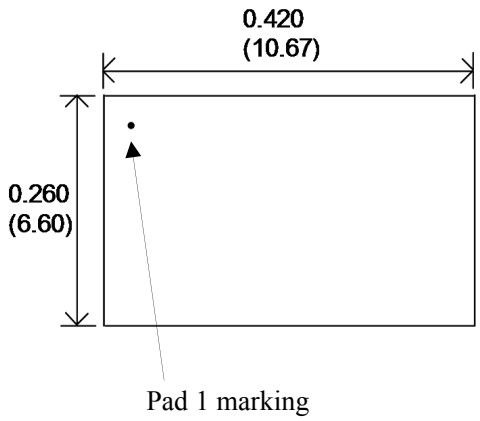
The high temperature solder SN100 was used for the inside assembly of ABT, MLN and MLT series modules. The melting temperature point of the high temperature solder SN100 is around 227 ^{0}C. Thus, melting temperature of the solder paste should be below 205 ^{0}C for assembling ABT, MLN and MLT series module on the test board. SN63 solder paste melting temperature point is around 183 ^{0}C and is suitable for the assembly purpose.

 Caution! ESD sensitive device.

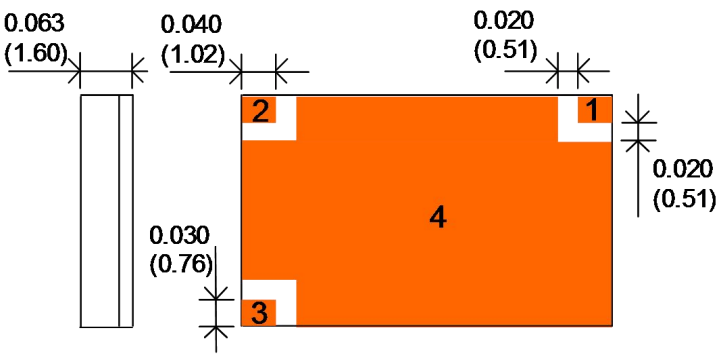
Following three suggestions that can avoid ESD effectively:

a) Workers who directly handle ABT, MLN and MLT series or boards on which devices have been mounted can wear both wrist straps and ESD protective shoes.
b) Gloves and finger sacks with ESD protection should be used. Especially, the finger sacks used when handling devices with bare hands must be conductive or electrostatic diffusive.
c) Workers should make efforts to wear clothing made from materials that do not generate static electricity.

Top View



Bottom View



Dimension is in inch (millimeter)

Pad 1 : RF input
Pad 2 : RF output
Pad 3 : Vdd 5V input
Pad 4 : Ground