

# **NXP BLC8G27LS-100AV transistor datasheet**

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100 W LDMOS packaged asymmetrical Doherty power transistor for base station applications at frequencies from 2490 MHz to 2690 MHz.

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# BLC8G27LS-100AV

Power LDMOS transistor

Rev. 1 — 25 February 2014

Objective data sheet

## 1. Product profile

### 1.1 General description

100 W LDMOS packaged asymmetrical Doherty power transistor for base station applications at frequencies from 2490 MHz to 2690 MHz.

**Table 1. Typical performance**

Typical RF performance at  $T_{case} = 25\text{ °C}$  in the Doherty demo board.

Test signal	f (MHz)	$V_{DS}$ (V)	$P_{L(AV)}$ (W)	$G_p$ (dB)	$\eta_D$ (%)	ACPR (dBc)
1-carrier W-CDMA	2520 to 2620	28	17	15.5	45	-30 <a href="#">[1]</a>

[1] Test signal: 3GPP test model 1; 1 to 64 DPCH; PAR = 7.2 dB at 0.01 % probability on CCDF.

### 1.2 Features and benefits

- Excellent ruggedness
- High efficiency
- Low thermal resistance providing excellent thermal stability
- Decoupling leads to enable improved video bandwidth
- Lower output capacitance for improved performance in Doherty applications
- Designed for low memory effects providing excellent pre-distortability
- Internally matched for ease of use
- Integrated ESD protection
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

### 1.3 Applications

- RF power amplifier for LTE base stations and multi carrier applications in the 2490 MHz to 2690 MHz frequency range



## 2. Pinning information

**Table 2. Pinning**

Pin	Description	Simplified outline	Graphic symbol
1	drain1 (main)		
2	drain2 (peak)		
3	gate1 (main)		
4	gate2 (peak)		
5	video decoupling (main)		
6	video decoupling (peak)		
7	source		

[1] Connected to flange.

## 3. Ordering information

**Table 3. Ordering information**

Type number	Package		
	Name	Description	Version
BLC8G27LS-100AV	-	plastic earless flanged cavity package; 6 leads	SOT1275-1

## 4. Limiting values

**Table 4. Limiting values**

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{DS}$	drain-source voltage		-	65	V
$V_{GS}$	gate-source voltage		-0.5	+13	V
$T_{stg}$	storage temperature		-65	+150	°C
$T_j$	junction temperature		[1]	225	°C

[1] Continuous use at maximum temperature will affect the reliability, for details refer to the on-line MTF calculator.

## 5. Thermal characteristics

**Table 5. Thermal characteristics**

Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-case)}$	thermal resistance from junction to case	$T_{case} = 80\text{ °C}; P_L = 17\text{ W}$	<td>	K/W

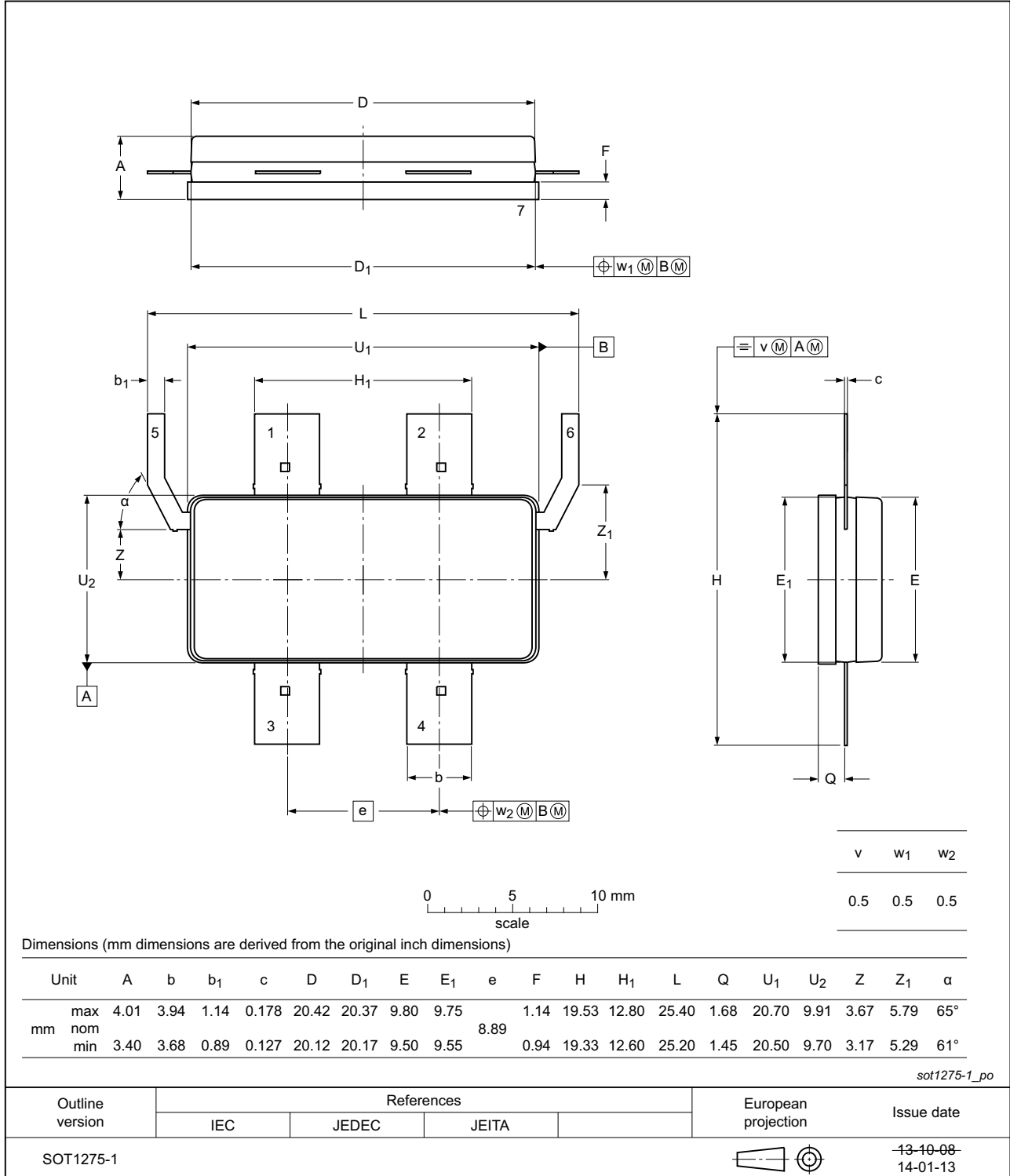
## 6. Characteristics

<td>

**7. Package outline**

Air cavity plastic earless flanged package; 6 leads

SOT1275-1



**Fig 1. Package outline SOT1275-1**

## 8. Handling information

### CAUTION



This device is sensitive to ElectroStatic Discharge (ESD). Observe precautions for handling electrostatic sensitive devices.

Such precautions are described in the *ANSI/ESD S20.20*, *IEC/ST 61340-5*, *JESD625-A* or equivalent standards.

## 9. Abbreviations

**Table 6. Abbreviations**

Acronym	Description
3GPP	3rd Generation Partnership Project
CCDF	Complementary Cumulative Distribution Function
DPCH	Dedicated Physical CHannel
ESD	ElectroStatic Discharge
LDMOS	Laterally Diffused Metal-Oxide Semiconductor
LTE	Long Term Evolution
MTF	Median Time to Failure
PAR	Peak-to-Average Ratio
W-CDMA	Wideband Code Division Multiple Access

## 10. Revision history

**Table 7. Revision history**

Document ID	Release date	Data sheet status	Change notice	Supersedes
BLC8G27LS-100AV v.1	20140225	Objective data sheet	-	-

## 11. Legal information

### 11.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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[2] The term 'short data sheet' is explained in section "Definitions".

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