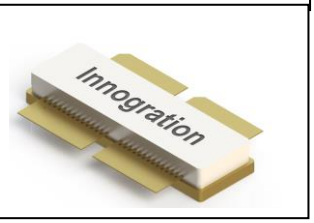
700W,50V RF LDMOS Transistor

ITEV10700D4C



Description

The ITEV10700D4C is a 700watt capable, Doherty paired LDMOS transistor, ideal for for 4G/5G cellular applications from 0.6 to 1GHz..

It can be configured as asymmetrical Doherty delivering 100W average power, according to normal 8.5dB back off.

There is no guarantee of performance when this part is used outside of stated frequencies.

- Typical Doherty RF Performance (On Innogration fixture with device soldered).

Vds=50V Idq_main=200mA, Vgs_peak=1.2V

Freq (MHz)	Pout (dBm)	CCDF (dB)	ACPR (dBc)	Gain (dB)	Efficiency (%)
758	50	8.07	-26.6	16.5	53.2
780	50	8.32	-28.9	16.3	51.9
803	50	7.97	-30.2	15.7	50.4

Applications

- asymmetrical Doherty amplifier within 0.6-1GHz
- UHF TV
- P band power amplifier

Figure 1: Pin Connection definition

Transparent top view (Backside grounding for source)

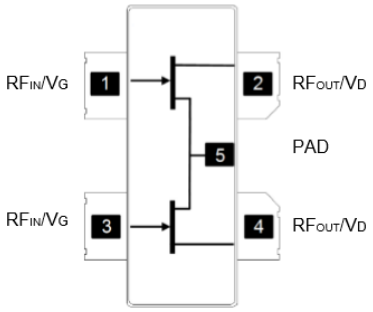


Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	+110	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+55	Vdc
Storage Temperature Range	Tstg	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	0.35	°C/W

T_C= 85°C, T_J=200°C, DC test			

Table 3. ESD Protection Characteristics

Test Methodology	Class
Human Body Model (per JESD22--A114)	Class 2

Table 4. Electrical Characteristics (TA = 25 ℃ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
DC Characteristics					
Drain-Source Voltage V_{GS}=0, I_{DS}=100uA	$V_{(BR)DSS}$		110		V
Zero Gate Voltage Drain Leakage Current (V_{DS} = 90V, V_{GS} = 0 V)	I_{DSS}	——	——	1	μA
Gate--Source Leakage Current (V_{GS} = 11 V, V_{DS} = 0 V)	I_{GSS}	——	——	1	μA
Gate Threshold Voltage (V_{DS} = 50V, I_D = 600 μA)	$V_{GS(th)}$	——	2	——	V
Gate Quiescent Voltage (V_{DD} = 50V, I_D = 300mA, Measured in Functional Test)	$V_{GS(Q)}$	——	3.6	——	V

Load Mismatch (In Innogration Test Fixture, 50 ohm system): V_{DD} = 50Vdc, I_{DQ} = 300mA, f = 803 MHz

VSWR 10:1 at 100W WCDMA Output Power	No Device Degradation

758-803MHz application board

Reference Circuit of Test Fixture Assembly Diagram

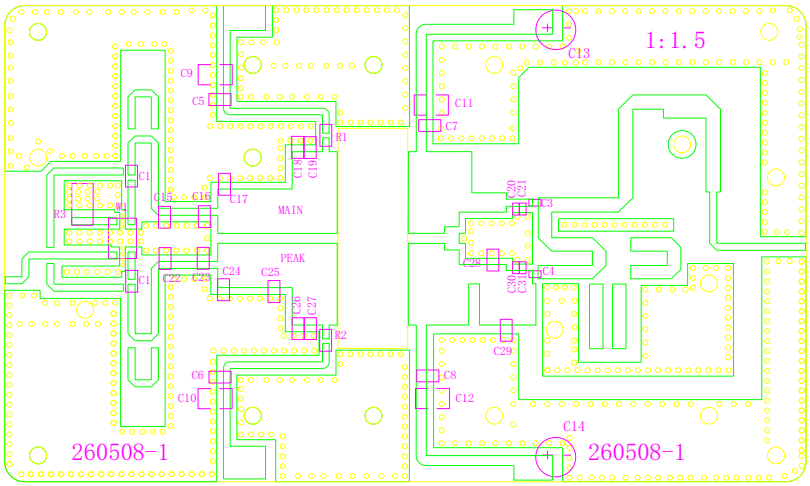


Figure 2. Test Circuit Component Layout

Table 5. Test Circuit Component Designations and Values

Designator	Footprint	Comment	Quantity
C1, C2, C16, C20, C23, C30	0603	6.8pF	6
C3	0603	15pF	1
C4, C5, C6, C7, C8	0603	68pF	5
C9, C10, C11, C12	1210	10uF/100V	4
C13, C14		470uF/63V	2

C15, C22, C28, C29	0603	3.3 pF	4
C17, C21, C24, C25, C31	0603	10 pF	2
C18, C19, C26, C27	0603	15pF	2
R1, R2	0603	10 Ω	2
R3		RFR50N-20 CT0410B	1
W1		HC07F03	1

TYPICAL CHARACTERISTICS

Figure 7. Power Gain and Drain Efficiency as function of Power Output at Idq=330mA

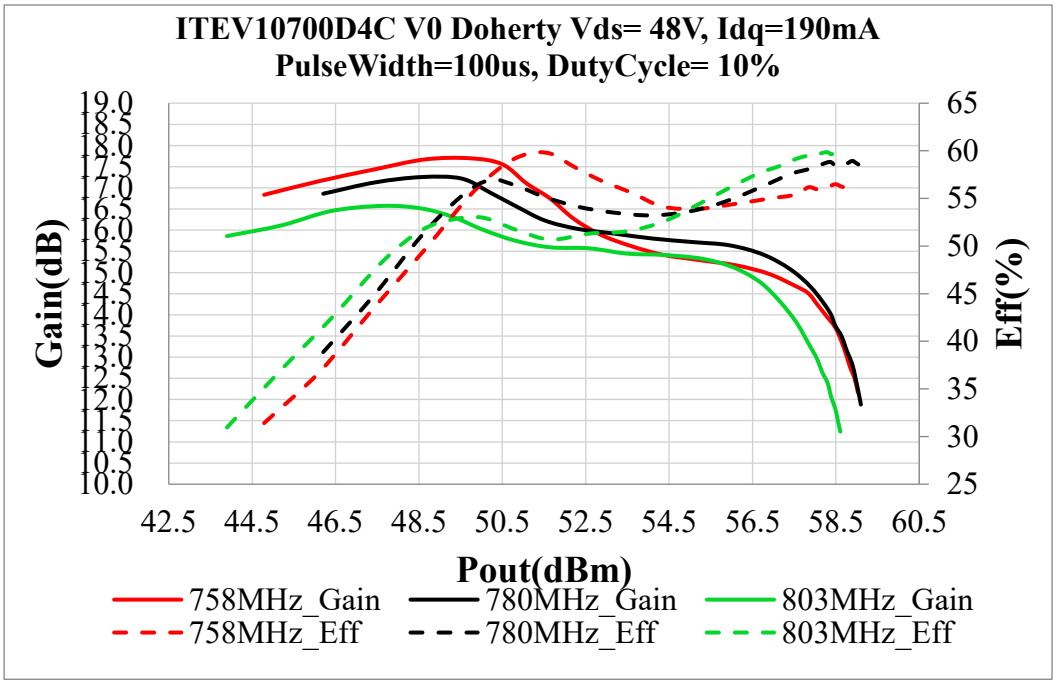
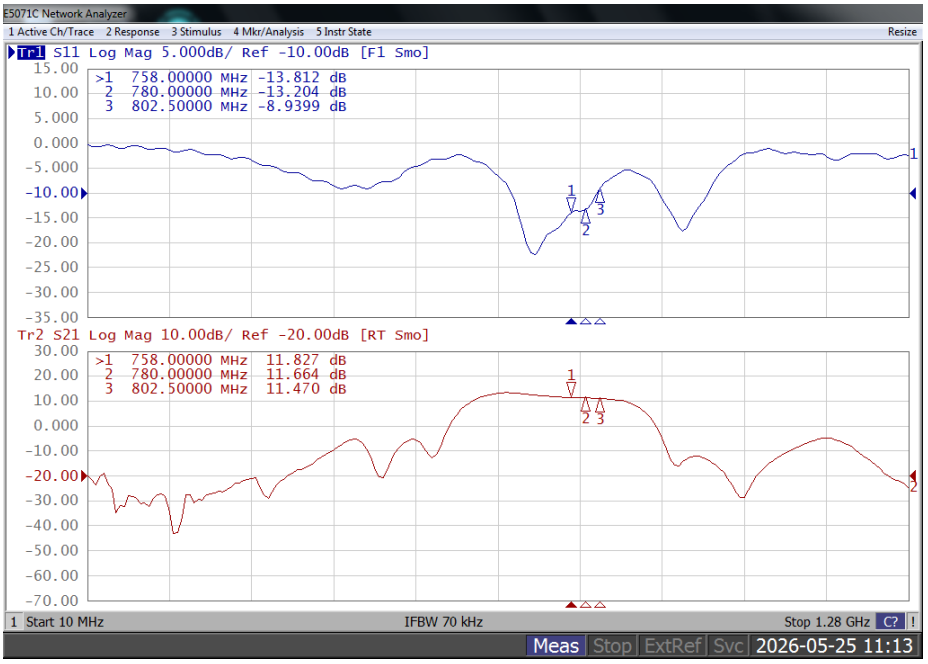
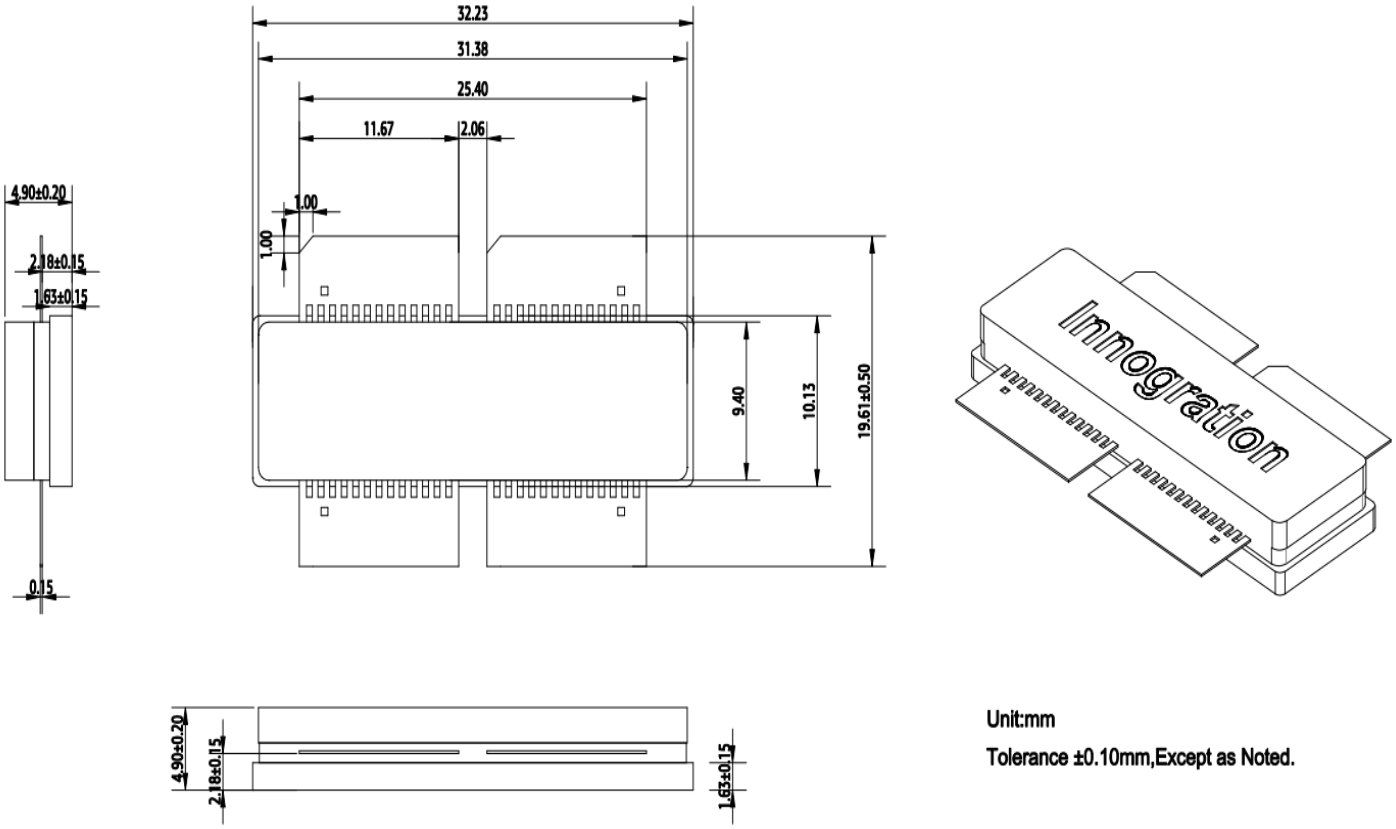


Figure 8.Network analyzer output S11/S21



Earless Flanged Plastic Air Cavity Package; 4 leads



Revision history

Table 7. Document revision history

Date	Revision	Datasheet Status
2026/5/25	Rev 1.0	Preliminary Datasheet

Application data based on LSM-26-16

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