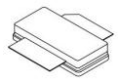
700MHz-1000MHz, 260W, 28V High Power RF LDMOS FETs

Description

The ITBH09260B is a 260-watt, internally matched LDMOS FET, designed for CDMA/WCDMA and multicarrier GSM base station applications with frequencies from 700 to 1000 MHz. It Can be used in Class AB/B and Class C for all typical cellular base station modulation formats.

ITBH09260B2



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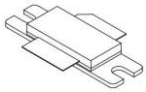


•Typical Performance (On Innogration fixture with device soldered):

V_{DD} = 28 Volts, I_{DQ} = 1200 mA, Pulse CW, Pulse Width=100 us, Duty cycle=10% .

Frequency	Gp (dB)	P_{-1dB} (dBm)	η_D@P_{-1} (%)	P_{-3dB} (dBm)	η_D@P_{-3} (%)
875 MHz	19	54	55	54.8	60

Features

- High Efficiency and Linear Gain Operations
- Integrated ESD Protection
- Internally Matched for Ease of Use
- Excellent thermal stability, low HCI drift
- Large Positive and Negative Gate/Source Voltage Range for Improved Class C Operation
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	+75	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+32	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 T_C= 85°C, T_J=200°C, DC test	RθJC	0.32	°C/W

Table 3. ESD Protection Characteristics

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
DC Characteristics					
Drain-Source Breakdown Voltage (V_{GS}=0V; I_D=100uA)	V_{DSS}	75			V
Zero Gate Voltage Drain Leakage Current (V_{DS} = 28 V, V_{GS} = 0 V)	I_{DSS}			1	μA

Gate--Source Leakage Current (V_{GS} = 6 V, V_{DS} = 0 V)	I_{GSS}			1	μA
Gate Threshold Voltage (V_{DS} = 28V, I_D = 1.1 mA)	$V_{GS}(th)$		2.2		V
Gate Quiescent Voltage (V_{DD} = 28 V, I_{DQ} = 1200 mA, Measured in Functional Test)	$V_{GS(Q)}$	2.7	3.2	3.7	V

Functional Tests (In Innogration Test Fixture, 50 ohm system) : V_{DD} = 28 Vdc, I_{DQ} = 1200 mA, f = 875 MHz, Pulse CW Signal Measurements.

(Pulse Width=100 μs, Duty cycle=10%)

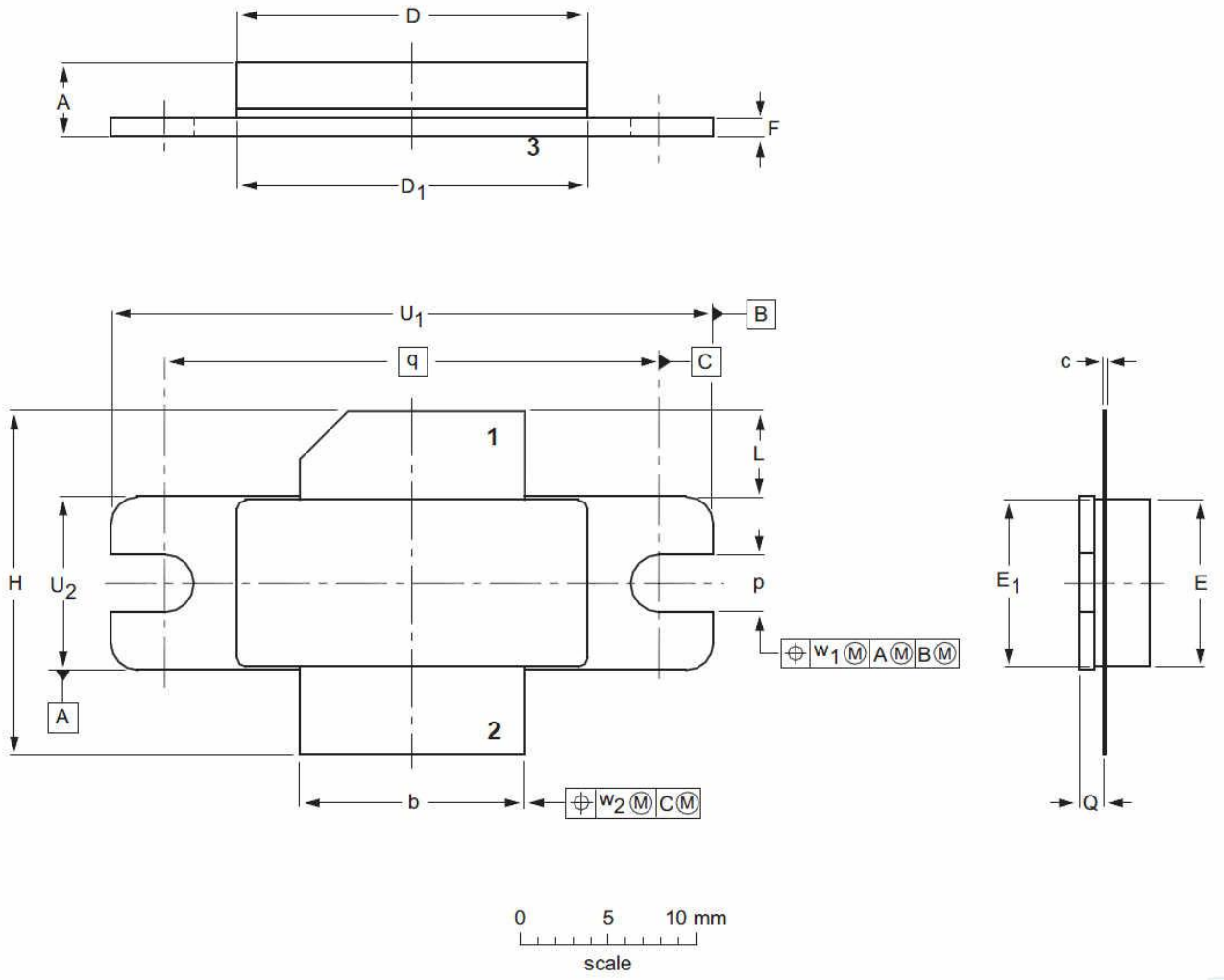
Power Gain	Gp		19		dB
Drain Efficiency@P3dB	η_D		60		%
1 dB Compression Point	P_{-1dB}		54		dBm
3dB Compression Point	P_{-3dB}		54.8		dBm
Input Return Loss	IRL		-10		dB

Load Mismatch (In Innogration Test Fixture, 50 ohm system): V_{DD} = 28 Vdc, I_{DQ} = 1200 mA, f = 875 MHz

VSWR 10:1 at 260W pulse CW Output Power	No Device Degradation

Package Outline

Flanged ceramic package; 2 mounting holes; 2 leads（1—DRAIN、2—GATE、3—SOURCE）



UNIT	A	b	c	D	D_1	E	E_1	F	H	L	p	Q	q	U_1	U_2	W_1	W_2
mm	4.72 3.43	12.83 12.57	0.15 0.08	20.02 19.61	19.96 19.66	9.50 9.30	9.53 9.25	1.14 0.89	19.94 18.92	5.33 4.32	3.38 3.12	1.70 1.45	27.94	34.16 33.91	9.91 9.65	0.25	0.51
inches	0.186 0.135	0.505 0.495	0.006 0.003	0.788 0.772	0.786 0.774	0.374 0.366	0.375 0.364	0.045 0.035	0.785 0.745	0.210 0.170	0.133 0.123	0.067 0.057	1.100	1.345 1.335	0.390 0.380	0.01	0.02

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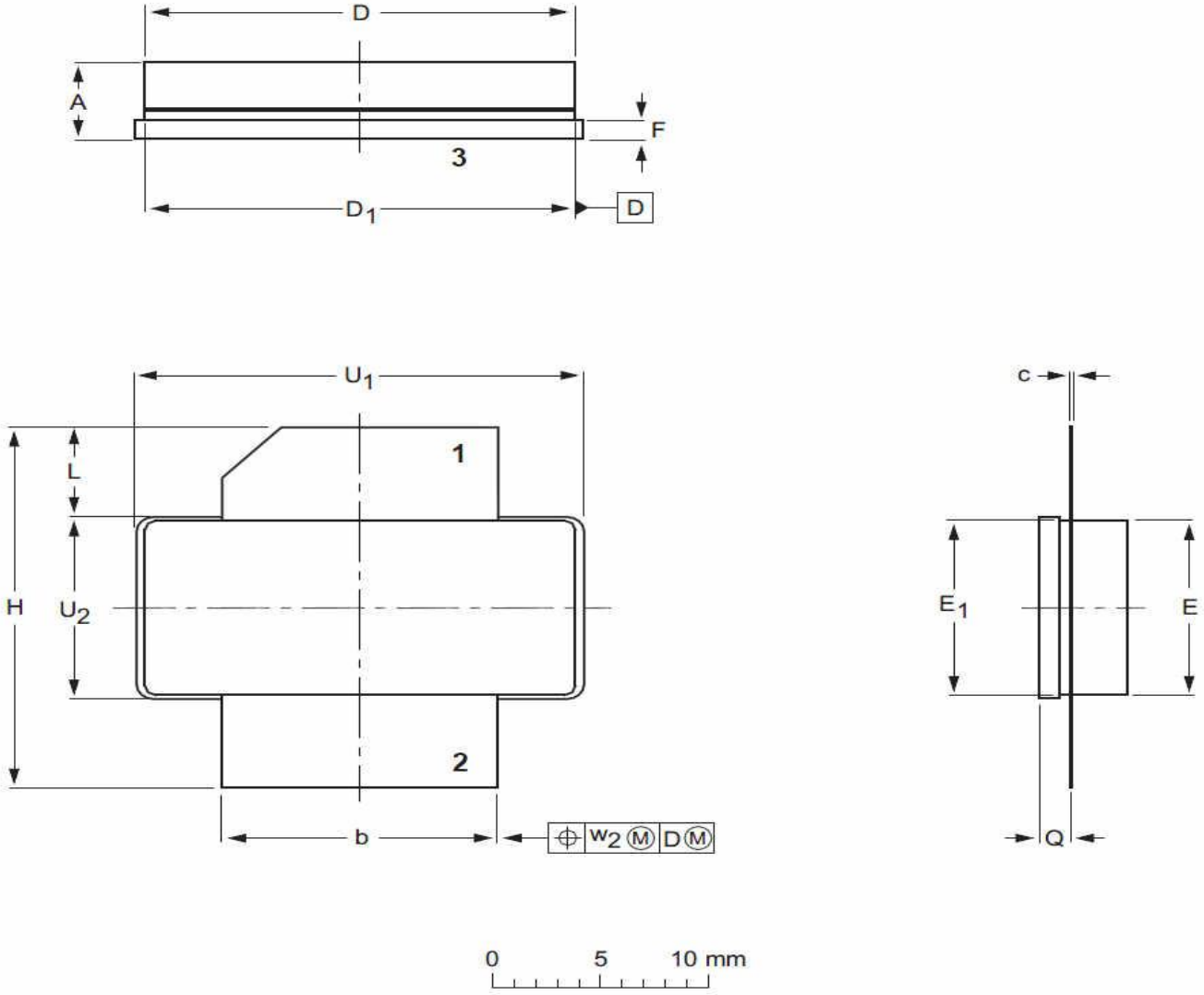
	IEC	JEDEC	JEITA		
PKG-B2E					03/12/2013

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



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	IEC	JEDEC	JEITA		
PKG-B2					03/12/2013

Revision history

Table 5. Document revision history

Date	Revision	Datasheet Status
2015/01/10	**Rev 1.0**	**Product Datasheet**

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