

FEATURES

- Frequency Range: 2.5 to 3.5 GHz
- Output Power: 40 W (P3dB)
- Power Gain: 9.5 dB (Typ.)
- Drain Efficiency @ P3dB: 40% (Typ.)
- Operating Voltage: VDD = 28 V, IDQ = 50 mA
- Class-AB Operation
- CW and Pulsed Signal Capability
- Excellent Ruggedness (VSWR 5:1)
- Integrated ESD Protection
- RoHS Compliant

APPLICATIONS

- S-Band Amplifiers
- ISM Applications
- Cellular Infrastructure
- Radar Systems
- Communication Transmitters
- Class AB/B & Class C Operation

Description

The ERI2735L-50 is a 40 W single-ended LDMOS power transistor designed for S-band applications from 2.5 to 3.5 GHz. Operating in Class-AB with 28 V drain supply and 50 mA quiescent current, it delivers 9.5 dB typical gain and 40% drain efficiency. The device is internally matched for 50 ohm systems.

Limiting Values

CHARACTERISTICS	SYMBOL	MIN	MAX	UNIT
Drain-Source Voltage	VDS	–	+65	V
Gate-Source Voltage	VGS	–10	+10	V
Storage Temperature	Tstg	–65	+150	°C
Case Operating Temperature	TC	–	+150	°C
Junction Temperature	Tj	–	+225	°C

RF Characteristics

VDD = 28 V, IDQ = 50 mA, f = 2500 - 3500 MHz, Pulse CW, 50 ohm test fixture

CHARACTERISTICS	CONDITIONS	MIN	TYP	MAX	UNIT
Power Gain	f = 2.5 - 3.5 GHz	–	9.5	–	dB
Drain Efficiency @ P3dB	f = 2.5 - 3.5 GHz	–	40	–	%
Output Power @ 3dB	f = 2.5 - 3.5 GHz	–	40	–	W
Output Power (CW)	Pin = 37.5 dBm	–	48	–	dBm
Output Power (Pulse)	Pin = 37.5 dBm	–	49.5	–	dBm
Efficiency (CW)	Pin = 37.5 dBm	–	36	–	%
Efficiency (Pulse)	Pin = 37.5 dBm	–	38	–	%
Load Mismatch	40 W pulse CW, all phases	5:1	–	–	–

DC Characteristics

Tj = 25°C unless otherwise specified

CHARACTERISTICS	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Zero Gate Voltage Drain Leakage	IDSS	VDS = 65 V, VGS = 0 V	–	–	100	μA
Zero Gate Voltage Drain Leakage	IDSS	VDS = 28 V, VGS = 0 V	–	–	1	μA
Gate-Source Leakage Current	IGSS	VGS = 10 V, VDS = 0 V	–	–	1	μA
Gate Threshold Voltage	VGS(th)	VDS = 28 V, ID = 450 μA	–	2.0	–	V
Gate Quiescent Voltage	VGS(Q)	VDD = 28 V, IDQ = 50 mA	–	2.4	–	V

Thermal Characteristics

TC = 85°C, DC test

CHARACTERISTIC	SYMBOL	TYP	UNIT
Thermal Resistance, Junction to Case	Rth(j-c)	1.3	°C/W

Typical Characteristics

(VDS=28V, IDQ=200mA, VGS=2.95V, 50Ω system)

Figure 1. Gain (dB) vs. Frequency (GHz)

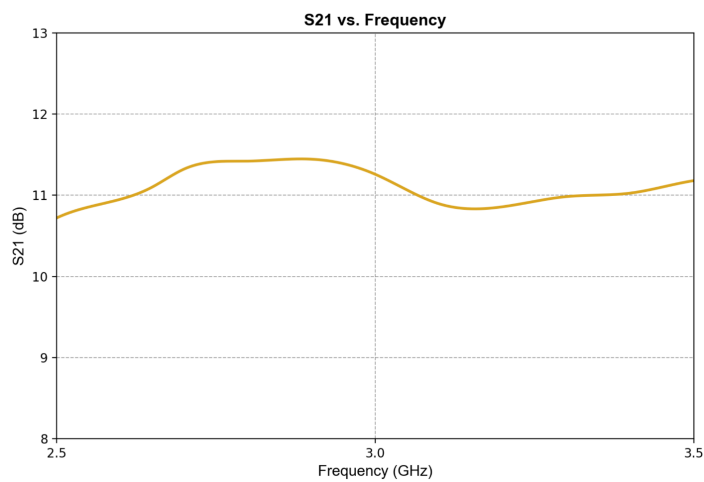
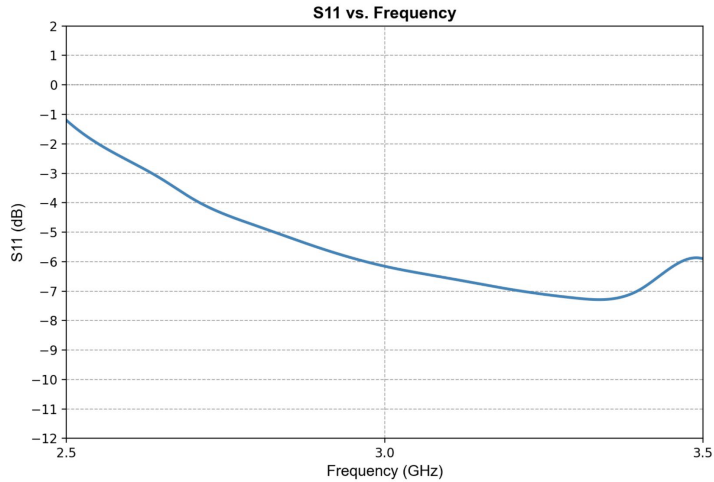
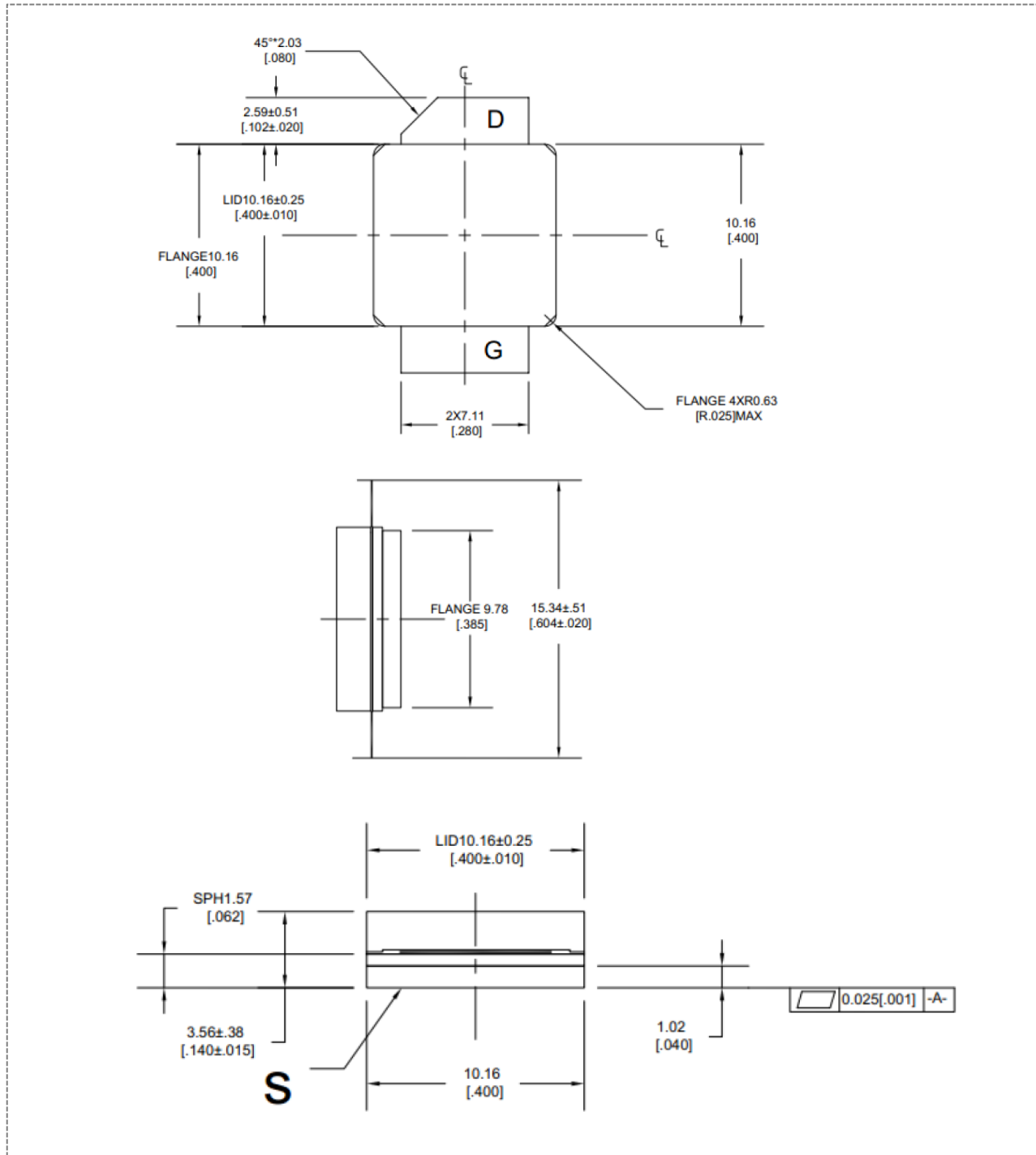


Figure 2. Input Return Loss (dB) vs. Frequency (GHz)



Package Outline (mm)



ESD Classification

HBM Class 2 / CDM Class C2A