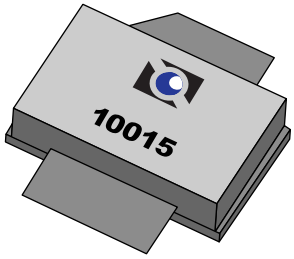
XEMOD

Semiconductor Data

XMT-10015-C01
15 W, 1.0 GHz RF MOSFET

General description:

The **XMT-10015** is an N-Channel enhancement-mode MOSFET featuring XeMOS® RF technology. It has been designed to provide high gain with a high degree of linearity at RF frequencies up to 1.0 GHz, and is usable at higher frequencies at lower gain.



Maximum Ratings

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	65	Vdc
Gate-Source Voltage	V_{GS}	±20	Vdc
Storage Temperature Range	T_{stg}	-65 to +150	°C
Operating Junction Temperature	T_J	200	°C

Characteristics (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	—	—	2.5	°C/W
Drain-Source Breakdown Voltage (V_{GS} = 0, I_D = 5.0 mAdc)	$V_{(BR)DSS}$	65	—	—	Vdc
Zero Gate Voltage Drain Current (V_{DS} = 28V, V_{GS} = 0)	I_{DSS}	—	—	1	mAdc
Gate Source Leakage Current (V_{GS} = 20V, V_{DS} = 0)	I_{GSS}	—	—	2	µAdc
Gate Threshold Voltage (V_{DS} = 10V, I_D = 20 mA)	$V_{GS(th)}$	2	3	5	Vdc
Drain-Source On-Voltage (V_{GS} = 10 V, I_D = 1A)	$V_{DS(on)}$	—	0.5	0.8	Vdc

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Characteristics (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Forward Transductance (V_{DS} = 10V, I_D = 1A)	g_{fs}	0.8	1.0	—	S
Input Capacitance (V_{DS} = 28V, V_{GS} = 0, f = 1 MHz)	C_{iss}	—	28	—	pF
Output Capacitance (V_{DS} = 28V, V_{GS} = 0, f = 1 MHz)	C_{oss}	—	13	—	pF
Reverse Transfer Capacitance (V_{DS} = 28V, V_{GS} = 0, f = 1 MHz)	C_{rss}	—	1.5	—	pF
Common Source Power Gain (V_{DD} = 26Vdc, P_{out} = 15W, I_{DQ} = 100 mA, f = 960 MHz)	G_{ps}	13	15	—	dB
Drain Efficiency (V_{DD} = 26Vdc, P_{out} = 15W, I_{DQ} = 100 mA, f = 960 MHz)	η	45	55	—	%
Load Mismatch (V_{DD} = 26Vdc, P_{out} = 15W, I_{DQ} = 100 mA, f = 960 MHz) Load VSWR 5:1 at All Phase Angles)	ψ	No Degradation in Output Power			

PACKAGE DIMENSIONS—PACKAGE C01

	Inches		Millimeters	
Dimension	**Min.**	**Max**	**Min.**	**Max**
A (package length)	0.370	0.390	9.40	9.91
B (package width)	0.225	0.235	5.72	5.97
C (package height)	0.105	0.155	2.67	3.94
D (lead width)	0.210	0.230	5.33	5.59
E (lead thickness)	0.004	0.006	0.11	0.15
F (lead height)	0.057	0.067	1.45	1.70
G (lead length)	0.085	0.115	2.16	2.92

Controlling dimension = inches