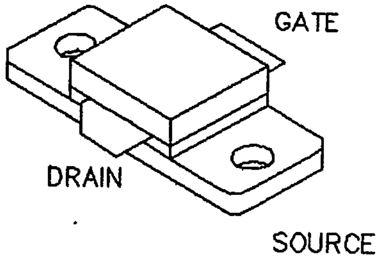
POLYFET RF DEVICES

F3007

T-39-15

General Description

Silicon vertical DMOS designed specifically for RF applications. Immune to forward and reverse bias secondary breakdown. "POLYFET"™ process features gold metal for greatly extended lifetime. Low output capacitance and high F_t enhance broad band performance.



PATENTED GOLD METALIZED SILICON RF POWER MOSFET

160 WATTS TO 175 MHZ

Single Ended
Package Style AU

ABSOLUTE MAXIMUM RATINGS (T_C = 25 °C)

Total Device Dissipation	Junction to Case Thermal Resistance	Maximum Junction Temperature	Storage Temperature	DC Drain Current	Drain to Gate Voltage	Drain to Source Voltage	Gate to Source Voltage
0.0 Watts	0.70 °C/W	200 °C	-65 °C to 150 °C	20 A	70 V	70 V	40 V

RF CHARACTERISTICS (160 WATTS OUTPUT)

SYMBOL	PARAMETER	MINIMUM	TYPICAL	MAXIMUM	UNITS	CONDITIONS
G_{ps}	Common Source Power Gain	13			dB	I_{DQ} =2.0A, V_{DS} = 28V, F = 175 MHz
η	Drain Efficiency		60		%	I_{DQ} =2.0A, V_{DS} = 28V, F = 175 MHz
VSWR	Load Mismatch Tolerance			20 : 1	Relative	I_{DQ} =2.0A, V_{DS} = 28V, F = 175 MHz

ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	MINIMUM	TYPICAL	MAXIMUM	UNITS	CONDITIONS
BV_{DSS}	Drain Breakdown Voltage	65			V	I_D = 0.2A, V_{GS} = 0V
I_{DSS}	Zero Bias Drain Current			12	mA	V_{DS} = 28V, V_{GS} = 0V
I_{GSS}	Gate Leakage Current			1	uA	V_{DS} = 0V, V_{GS} = 40V
V_{GS}	Gate Bias for Drain Current	1		7	V	I_D = 0.6A, V_{GS} = V_{DS}
g_M	Forward Transconductance		7.0		MHO	V_{DS} = 28V, I_D =6.0A F=120 Htz
C_{iss}	Common Source Input Capacitance		400		pFD	V_{DS} = 28V, V_{GS} = 0V, F = 1 MHz
C_{rss}	Common Source Feedback Capacitance		40		pFD	V_{DS} = 28V, V_{GS} = 0V, F = 1 MHz
C_{oss}	Common Source Output Capacitance		240		pFD	V_{DS} = 28V, V_{GS} = 0V, F = 1 MHz