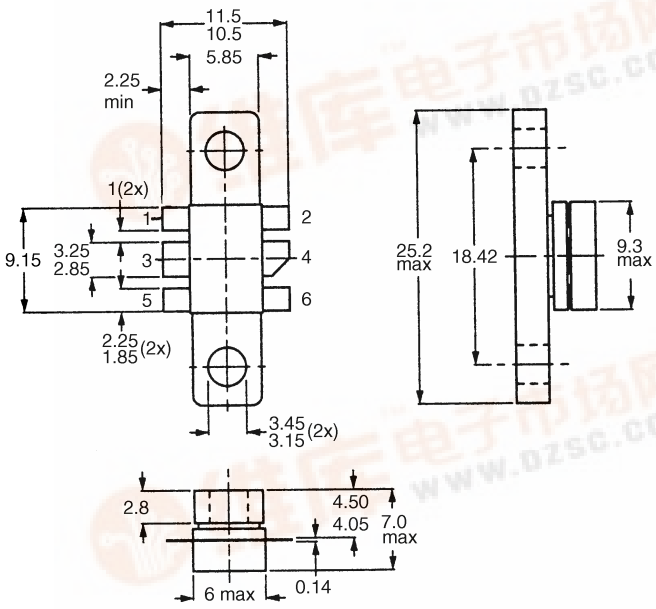
TetraFET

D2293UK

METAL GATE RF SILICON FET

MECHANICAL DATA



SOT 171

PIN 1	SOURCE	PIN 2	SOURCE
PIN 3	GATE	PIN 4	DRAIN
PIN 5	SOURCE	PIN 6	SOURCE

GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 10W – 12.5V – 500MHz SINGLE ENDED

FEATURES

- SIMPLIFIED AMPLIFIER DESIGN
- SUITABLE FOR BROAD BAND APPLICATIONS
- VERY LOW C_{rss}
- SIMPLE BIAS CIRCUITS
- LOW NOISE
- HIGH GAIN – 11 dB MINIMUM

APPLICATIONS

- HF/VHF/UHF COMMUNICATIONS from 1 MHz to 1 GHz

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

P_D	Power Dissipation	42W
BV_{DSS}	Drain – Source Breakdown Voltage	40V
BV_{GSS}	Gate – Source Breakdown Voltage	±20V
$I_{D(sat)}$	Drain Current *	8A
T_{stg}	Storage Temperature	–65 to 150°C
T_j	Maximum Operating Junction Temperature	200°C

SEME LAB

D2293UK

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions			Min.	Typ.	Max.	Unit
BV_{DSS}	Drain–Source Breakdown Voltage	V_{GS} = 0	I_D = 10mA		40			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 12.5V	V_{GS} = 0				1	mA
I_{GSS}	Gate Leakage Current	V_{GS} = 20V	V_{DS} = 0				6	μA
$V_{GS(th)}$	Gate Threshold Voltage *	I_D = 10mA	V_{DS} = V_{GS}		1		7	V
g_{fs}	Forward Transconductance *	V_{DS} = 10V	I_D = 0.6A		0.72			S
G_{PS}	Common Source Power Gain	P_O = 10W			11			dB
η	Drain Efficiency	V_{DS} = 12.5V	I_{DQ} = 0.4A		50			%
VSWR	Load Mismatch Tolerance	f = 500MHz			20:1			—
C_{iss}	Input Capacitance	V_{DS} = 0	V_{GS} = –5V	f = 1MHz			48	pF
C_{oss}	Output Capacitance	V_{DS} = 12.5V	V_{GS} = 0	f = 1MHz			40	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 12.5V	V_{GS} = 0	f = 1MHz			4	pF

* Pulse Test: Pulse Duration = 300 μs , Duty Cycle ≤ 2%

HAZARDOUS MATERIAL WARNING

The ceramic portion of the device between leads and metal flange is beryllium oxide. Beryllium oxide dust is highly toxic and care must be taken during handling and mounting to avoid damage to this area.

THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.

THERMAL DATA

$R_{THj–case}$	Thermal Resistance Junction – Case	Max.4.2°C / W