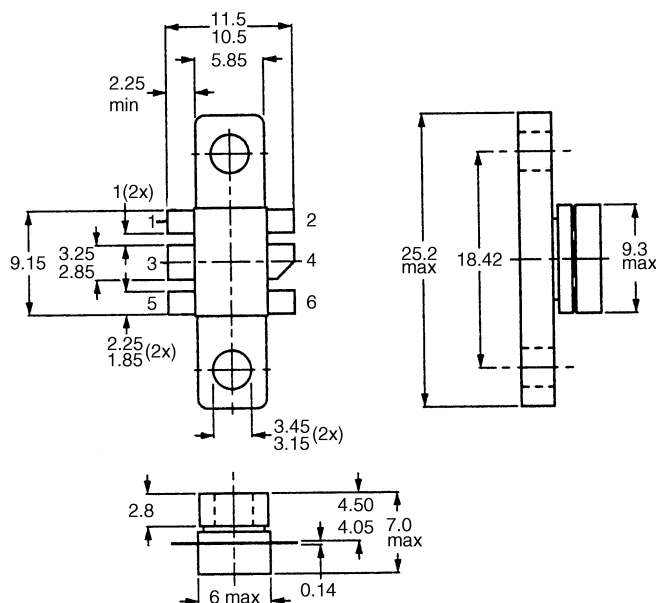


MECHANICAL DATA



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** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

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

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  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	$\mu A$
$V_{GS(th)}$ 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
$\eta$ 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  $\mu s$  , Duty Cycle  $\leq 2\%$

**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
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