TYPES 2N5545, 2N5546, 2N5547
DUAL N-CHANNEL SILICON JUNCTION FIELD-EFFECT TRANSISTORS

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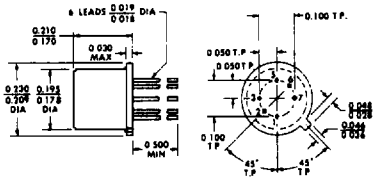
MATCHED FIELD-EFFECT TRANSISTORS

- High $|y_{fs}|/C_{iss}$ Ratio (High-Frequency Figure-of-Merit)
- Low Input Capacitance C_{iss} . . . 6 pF Max
- Low Gate-Current Differential . . . 5 nA Max at T_A = 125°C
- Recommended for Low-Level D-C Amplifiers, Sample-Hold Circuits, and Series-Shunt Choppers
- Improved Matching and Tracking Characteristics

***mechanical data**



1. SOURCE 1
2. DRAIN 1
3. GATE 1
5. SOURCE 2
6. DRAIN 2
7. GATE 2

THE ACTIVE ELEMENTS ARE ELECTRICALLY INSULATED FROM THE CASE

ALL JEDEC TO-71 DIMENSIONS AND NOTES ARE APPLICABLE

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

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***absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)**

	EACH TRIODE	TOTAL DEVICE
Drain-Gate Voltage	50 V	
Reverse Gate-Source Voltage	−50 V	
Continuous Forward Gate Current	30 mA	
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 1)	250 mW	400 mW
Storage Temperature Range	−65°C to 200°C	
Lead Temperature 1/16 Inch from case for 10 Seconds	←— 300°C —→	

NOTE 1: Derate linearly to 175°C free-air temperature at the rates of 1.67 mW/°C for each triode and 2.67 mW/°C for the total device.

*JEDEC registered data. This data sheet contains all applicable registered data in effect at the time of publication.

USES CHIP JN51

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*electrical characteristics at 25°C free-air temperature (unless otherwise noted)

individual triode characteristics (see note 2)

PARAMETER		TEST CONDITIONS		MIN	MAX	UNIT
I_{GSS}	Gate Reverse Current	V_{GS} = −50 V, V_{DS} = 0			−1	μA
		V_{GS} = −30 V, V_{DS} = 0			−0.1	nA
		V_{GS} = −30 V, V_{DS} = 0,	T_A = 150°C		−150	nA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 15 V, I_D = 0.5 nA		−0.5	−4.5	V
I_G	Gate Current	V_{DG} = 15 V, I_D = 200 μA			−50	pA
I_{DSS}	Zero-Gate-Voltage Drain Current	V_{DS} = 15 V, V_{GS} = 0		0.5	8	mA
$\lvert y_{fs} \rvert$	Small-Signal Common-Source Forward Transfer Admittance	V_{DS} = 15 V, V_{GS} = 0,	f = 1 kHz	1.5	6	mmho
$\lvert y_{os} \rvert$	Small-Signal Common-Source Output Admittance	V_{DS} = 15 V, V_{GS} = 0,	f = 1 kHz		25	μmho
C_{iss}	Small-Signal Common-Source Input Capacitance	V_{DS} = 15 V, V_{GS} = 0,	f = 1 MHz		6	pF
C_{rss}	Small-Signal Common-Source Reverse Transfer Capacitance	V_{DS} = 15 V, V_{GS} = 0,	f = 1 MHz		2	pF
$\lvert y_{fs} \rvert$	Small-Signal Common-Source Forward Transfer Admittance	V_{DS} = 15 V, V_{GS} = 0,	f = 100 MHz	1.5		mmho

triode matching characteristics

PARAMETER		TEST CONDITIONS		2N5545 MIN	2N5545 MAX	2N5546 MIN	2N5546 MAX	2N5547 MIN	2N5547 MAX	UNIT
$\lvert I_{G1} - I_{G2} \rvert$	Gate-Current Differential	V_{DG} = 15 V, I_D = 200 μA, T_A = 125°C			5		5		5	nA
$\lvert V_{GS1} - V_{GS2} \rvert$	Gate-Source-Voltage Differential	V_{DG} = 15 V, I_D = 50 μA			5		10		15	mV
		V_{DG} = 15 V, I_D = 200 μA			5		10		15	
$\lvert \Delta(V_{GS1} - V_{GS2}) / \Delta T_A \rvert$	Gate-Source-Voltage-Differential Change with Temperature	V_{DG} = 15 V, I_D = 200 μA, $T_{A(1)}$ = 25°C,	$T_{A(2)}$ = −55°C		0.8		1.6		3.2	mV
		V_{DG} = 15 V, I_D = 200 μA, $T_{A(1)}$ = 25°C,	$T_{A(2)}$ = 125°C		1		2		4	
$\frac{I_{DSS1}}{I_{DSS2}}$	Zero-Gate-Voltage Drain Current Ratio	V_{DS} = 15 V, V_{GS} = 0, See Note 3		0.95	1	0.9	1	0.9	1	
$\frac{\lvert y_{fs} \rvert_1}{\lvert y_{fs} \rvert_2}$	Small-Signal Common-Source Forward Transfer Admittance Ratio	V_{DG} = 15 V, I_D = 200 μA, f = 1 kHz, See Note 3		0.97	1	0.95	1	0.9	1	
$\lvert y_{os} \rvert_1 - \lvert y_{os} \rvert_2$	Small-Signal Common-Source Output Admittance Differential	V_{DG} = 15 V, I_D = 200 μA, f = 1 kHz, See Note 3			1		2		3	μmho

*operating characteristics at 25°C free-air temperature

individual triode characteristics (see note 2)

PARAMETER		TEST CONDITIONS	2N5545 MAX	2N5546 MAX	UNIT
F	Spot Noise Figure	V_{DG} = 15 V, I_D = 200 μA, f = 10 Hz, R_G = 1 MΩ, Noise Bandwidth = 5 Hz	3.5	5	dB
V_n	Equivalent Input Noise Voltage	V_{DG} = 15 V, I_D = 200 μA, f = 10 Hz, Noise Bandwidth = 5 Hz	180	200	$nV/\sqrt{Hz}$

NOTES: 2. The terminals of the triode not under test are grounded for the measurement of these characteristics.
3. The lower of the two characteristic readings is taken as the numerator or subtrahend.

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