

LS843 MONOLITHIC DUAL N-CHANNEL JFET



Linear Systems Ultra Low Leakage Low Drift Monolithic Dual JFET

The LS843 is a high-performance monolithic dual JFET featuring extremely low noise, tight offset voltage and low drift over temperature specifications, and is targeted for use in a wide range of precision instrumentation applications. The LS843 features a 1-mV offset and 5- μ V/°C drift.

The hermetically sealed TO-71 & TO-78 packages are well suited for military and harsh environment applications.

(See Packaging Information).

LS843 Applications:

- Wideband Differential Amps
- High-Speed, Temp-Compensated Single-Ended Input Amps
- High-Speed Comparators
- Impedance Converters and vibrations detectors.

FEATURES								
LOW DRIFT		V _{GS1-2} / T ≤5μV/°C						
LOW LEAKAG	GE .	$I_G = 15pA TYP.$						
LOW NOISE		$e_n = 3nV/VHz TYP.$						
LOW OFFSET	VOLTAGE	V _{GS1-2} ≤1mV						
ABSOLUTE MAXIMUM RATINGS @ 25°C (unless otherwise noted)								
Maximum Temperatures								
Storage Tem	perature		-65°C to +150°C					
Operating Ju	inction Temperature		+150°C					
Maximum Voltage and Current for Each Transistor – Note 1								
-V _{GSS}	Gate Voltage to Drain or So	60V						
-V _{DSO}	Drain to Source Voltage	60V						
-I _{G(f)}	Gate Forward Current	50mA						
Maximum Power Dissipation								
Device Dissipation @ Free Air – Total 400mW @ +125°C								

MATCHING CHARACTERISTICS @ 25°C UNLESS OTHERWISE NOTED									
SYMBOL	CHARACTERISTICS	VALUE	UNITS	CONDITIONS					
V _{GS1-2} / T max. DRIFT VS.		5	μV/°C	V_{DG} =10V, I_{D} =500 μ A					
	TEMPERATURE			T _A =-55°C to +125°C					
V _{GS1-2} max. OFFSET VOLTAGE		1	mV	V_{DG} =10V, $I_{D=}$ 500 μ A					

FLECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

ELECTRICAL CHA	ARACTERISTICS @ 25°C (unless o	tnerwise noted	1)			
SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV_GSS	Breakdown Voltage	60			V	$V_{DS} = 0$ $I_D = 1nA$
BV_GGO	Gate-To-Gate Breakdown	60			V	$I_{G}=1$ nA $I_{D}=0$ $I_{S}=0$
	TRANSCONDUCTANCE					
Y_{fSS}	Full Conduction	1500			μmho	V_{DG} = 15V V_{GS} = 0V f = 1kHz
Y _{fS}	Typical Operation	1000	1500	+	μmho	V _{DG} = 15V I _D = 500μA
Y _{FS1-2} / Y _{FS}	M <mark>is</mark> match (0.6	3	%	
	DRAIN CURRENT					
I _{DSS}	Full C <mark>o</mark> nduc <mark>ti</mark> on	1.5	5	15	mA	$V_{DG} = 15V$ $V_{GS} = 0V$
$\left I_{DSS1-2} / I_{DSS} \right $	Mismatch at Full Conduction		1 -	5	%	
	GATE VOLTAGE					
V_{GS} (off) or V_p	Pinchoff voltage	1		3.5	V	$V_{DS}=15V$ $I_{D}=1nA$
V _{GS} (on)	Operating Range	0.5		3.5	V	V_{DS} =15V I_D =500 μ A
	GATE CURRENT					
-I _G max.	Operating		15	50	рА	$V_{DG} = 15V I_D = 500 \mu A$
-l _G max.	High Temperature			50	nA	T _A = +125°C
-I _G max.	Reduced V _{DG}		5	30	рА	$V_{DG} = 3V I_{D} = 500 \mu A$
-I _{GSS} max.	At Full Conduction			100	pA	V_{DG} = 15V , V_{DS} =0
	OUTPUT CONDUCTANCE					
Y _{OSS}	Full Conduction			20	μmho	V_{DG} = 15V V_{GS} = 0V
Yos	Operating		0.2	2	μmho	$V_{DG} = 15V$ $I_{D} = 500 \mu A$
Y _{OS1-2}	Differential		0.02	0.2	μmho	
	COMMON MODE REJECTION					
CMR	-20 log V _{GS1-2} / V _{DS}	90	110		dB	$\Delta V_{DS} = 10 \text{ to } 20V \qquad I_{D} = 500 \mu A$
	-20 log V _{GS1-2} / V _{DS}		85			$\Delta V_{DS} = 5 \text{ to } 10V \qquad I_D = 500 \mu A$
	<u>NOISE</u>					V_{DS} = 15V V_{GS} = 0V R_{G} = 10M Ω
NF	Figure			0.5	dB	f= 100Hz NBW= 6Hz
e _n	Voltage			7	nV/√Hz	V_{DS} =15V I_D =500 μ A f=1KHz NBW=1Hz
				11		V_{DS} =15V I_D =500 μ A f=10Hz NBW=1Hz
	<u>CAPACITANCE</u>					
C _{ISS}	Input			8		$V_{DS} = 15V$, $I_{D} = 500 \mu A$
C_{RSS}	Reverse Transfer			3	pF	
C _{DD}	Drain-to-Drain		0.5			V _{DG} = 15V, I _D =500μA

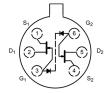
Note 1 – These ratings are limiting values above which the serviceability of any semiconductor may be impaired

Available Packages:

LS843 / LS843 in TO-71 & TO-78 LS843 / LS843 available as bare die

Please contact Micross for full package and die dimensions

TO-71 & TO-78 (Top View)





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