

SANYO	No.4502	2SK1961
		N-Channel Junction Silicon FET High-Frequency Low-Noise Amp Applications

Applications

- High-frequency low-noise amp applications.

Features

- Adoption of FBET process
- Large $|Y_{fs}|$
- Small Ciss
- Very low noise figure

Absolute Maximum Ratings at Ta = 25°C

			unit
Drain-to-Source Voltage	V_{DSX}	15	V
Gate-to-Drain Voltage	V_{GDS}	-15	V
Gate Current	I_G	10	mA
Drain Current	I_D	100	mA
Allowable Power Dissipation	P_D	500	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

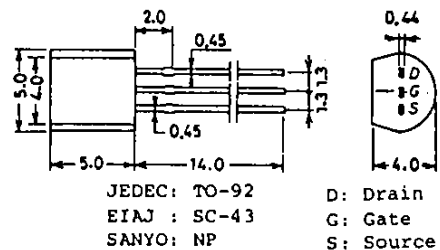
Electrical Characteristics at Ta = 25°C

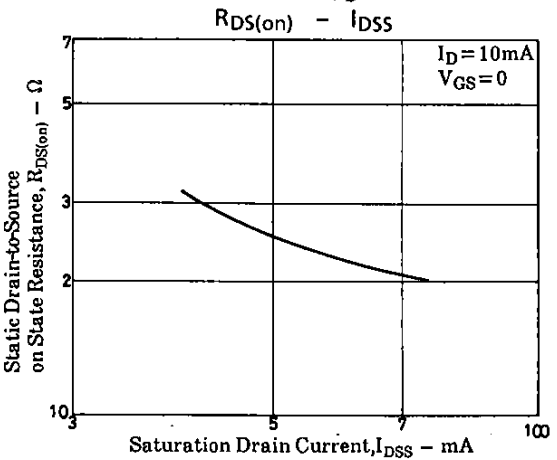
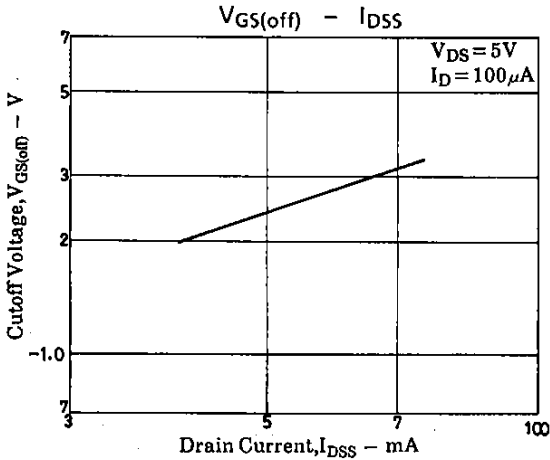
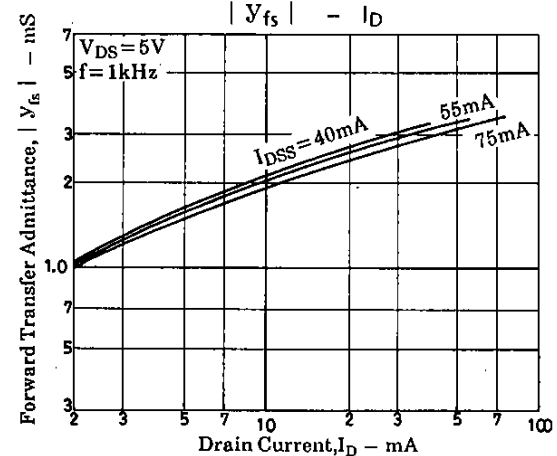
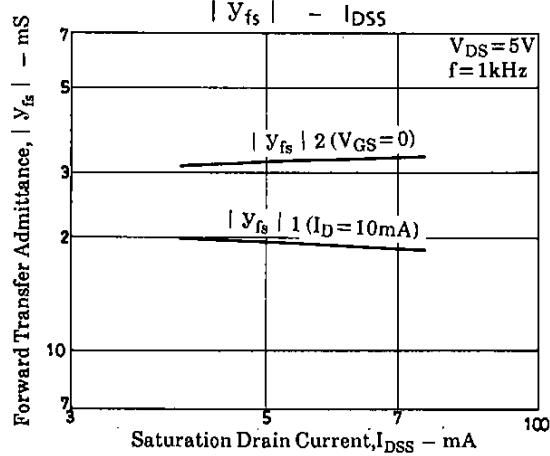
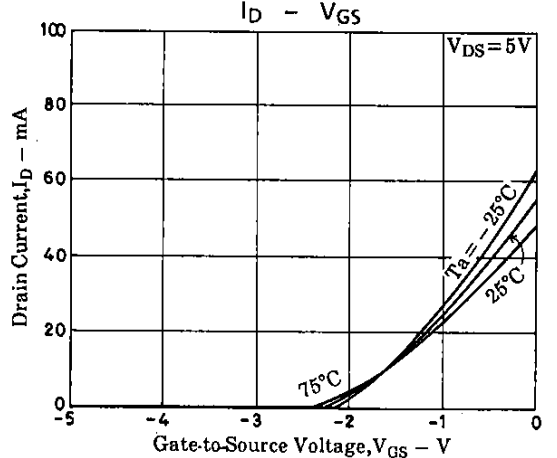
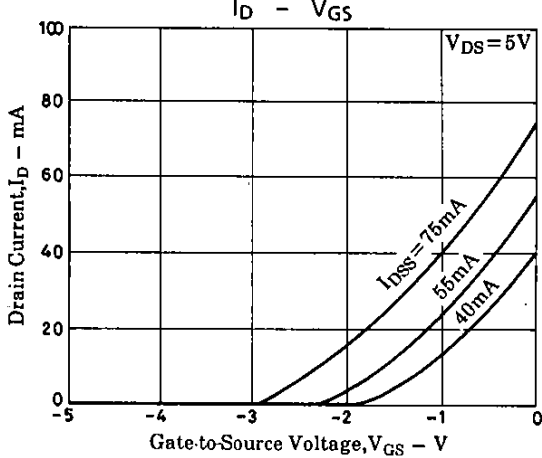
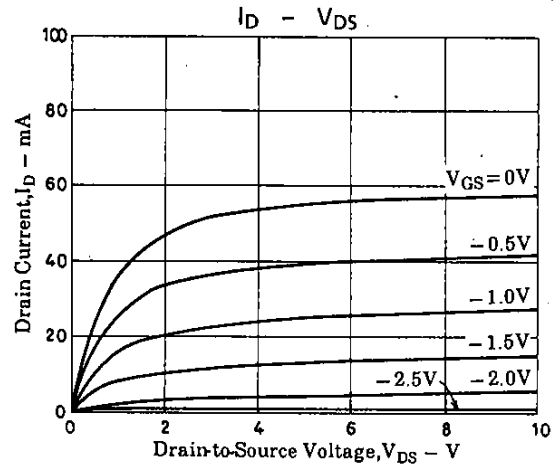
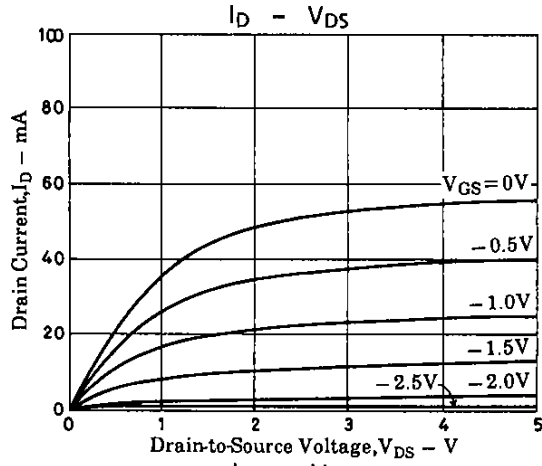
			min	typ	max	unit
G-D Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -10\mu A, V_{DS} = 0$	-15			V
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = -10V, V_{DS} = 0$			-1.0	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 5V, I_D = 100\mu A$	-1.2	-2.6	-4.5	V
Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0$	40*		75*	mA
Forward Transfer Admittance	$ Y_{fs} $ (1)	$V_{DS} = 5V, I_D = 10mA, f = 1kHz$	15	19		mS
		$V_{DS} = 5V, V_{GS} = 0, f = 1kHz$	24	32		mS
Input Capacitance	Ciss	$V_{DS} = 5V, V_{GS} = 0, f = 1MHz$		5.5		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = 5V, V_{GS} = 0, f = 1MHz$		1.6		pF
Noise Figure	NF	$V_{DS} = 5V, R_g = 1k\Omega, I_D = 5mA,$		1.3		dB
		$f = 1kHz$				
Static Drain-to-Source on State Resistance	$R_{DS(on)}$	$I_D = 10mA, V_{GS} = 0$		24		Ω

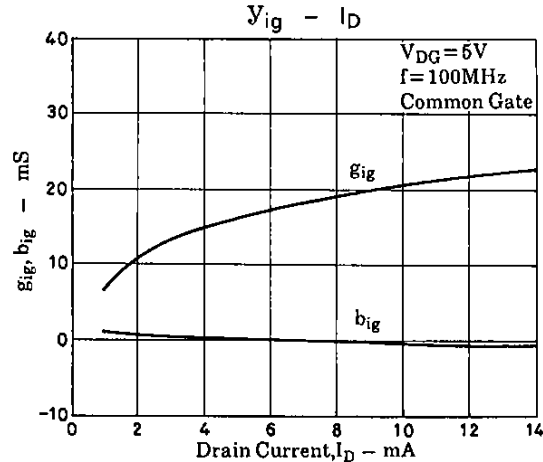
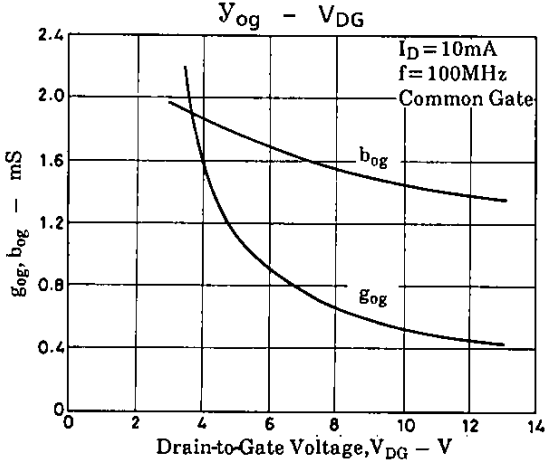
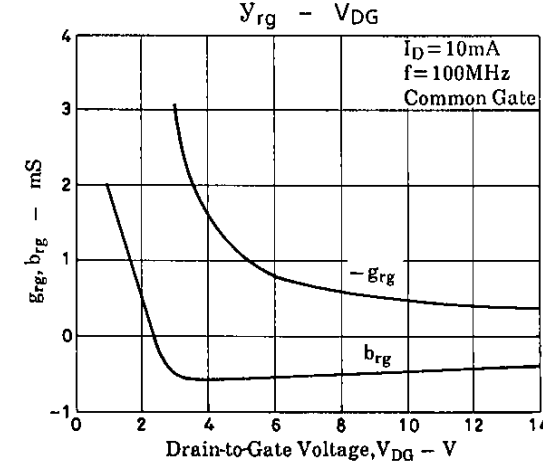
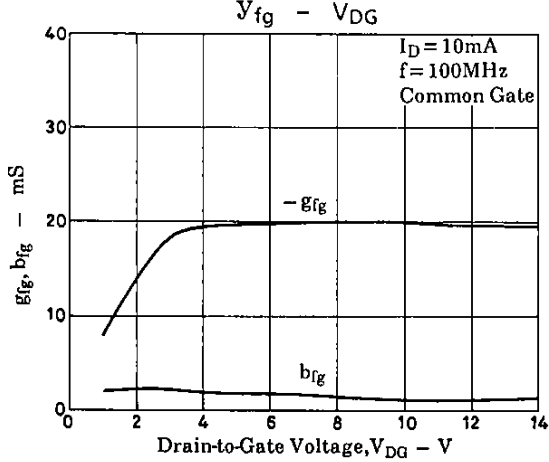
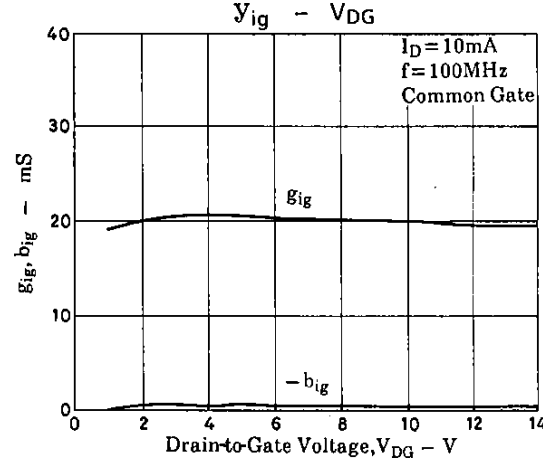
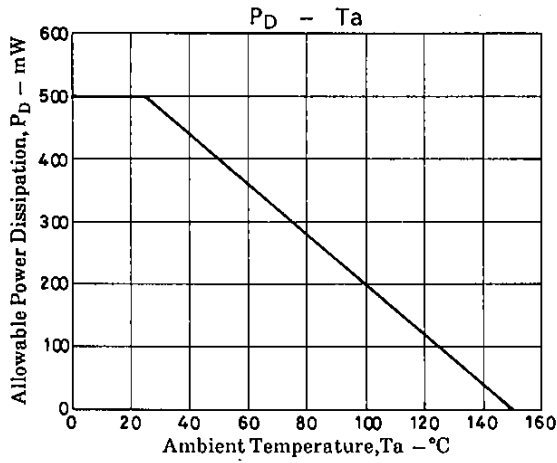
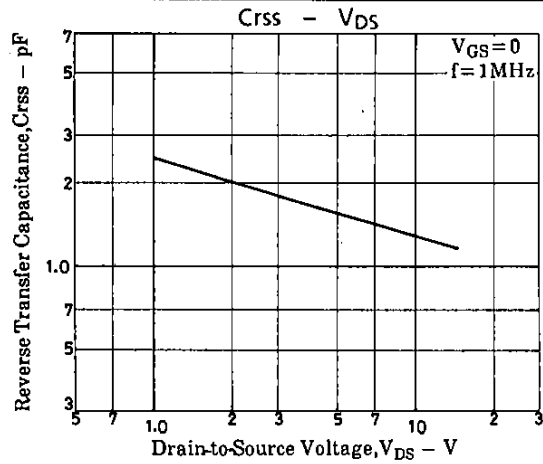
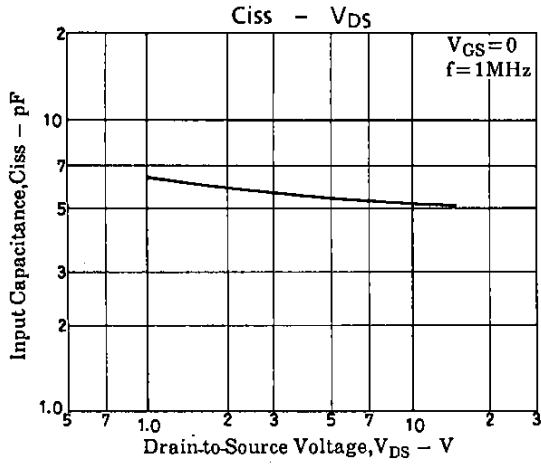
* : The 2SK1961 is classified by I_{DSS} as follows (unit : mA)

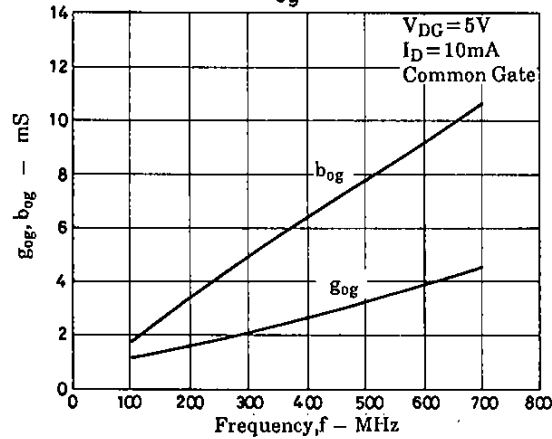
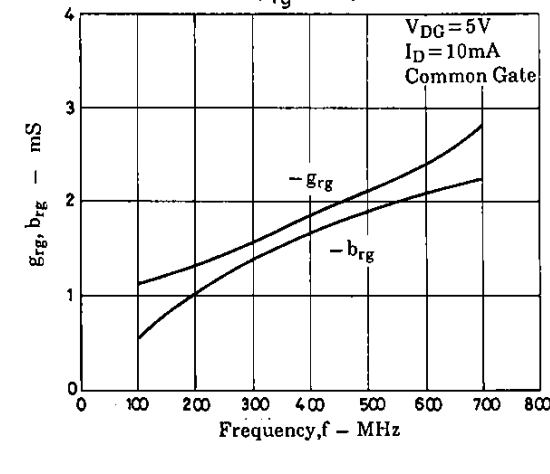
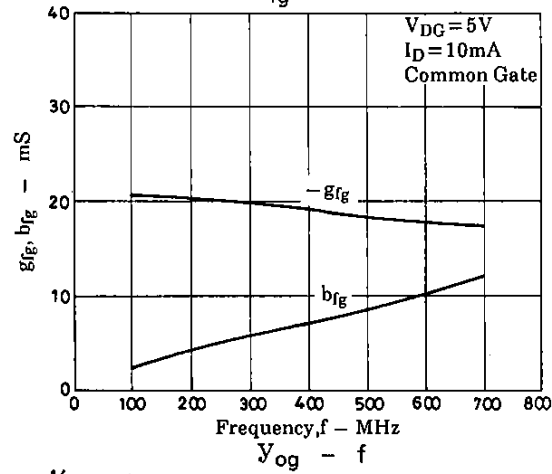
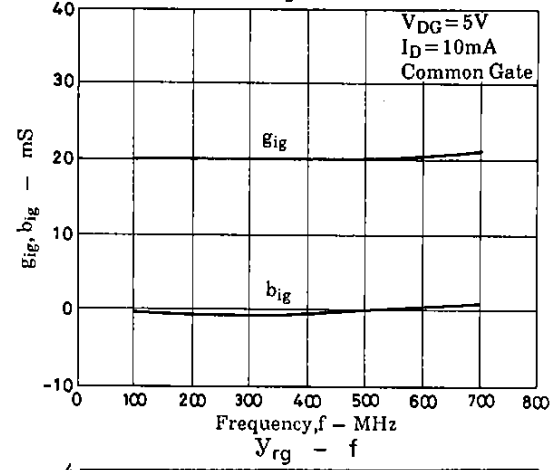
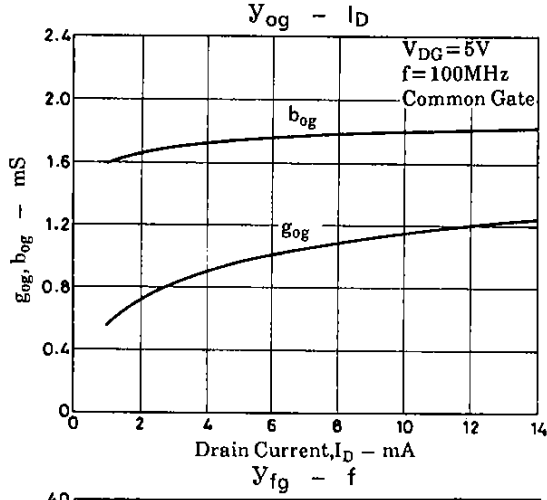
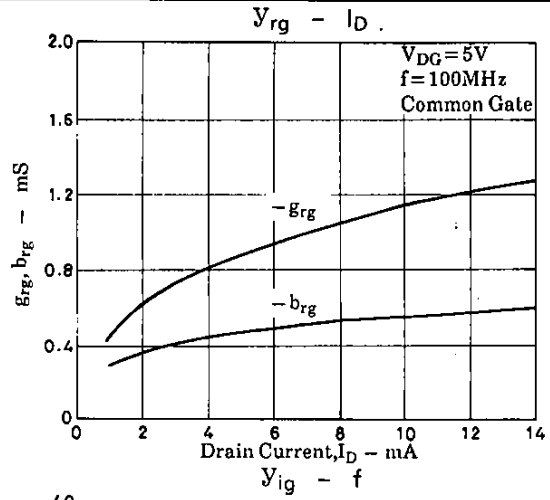
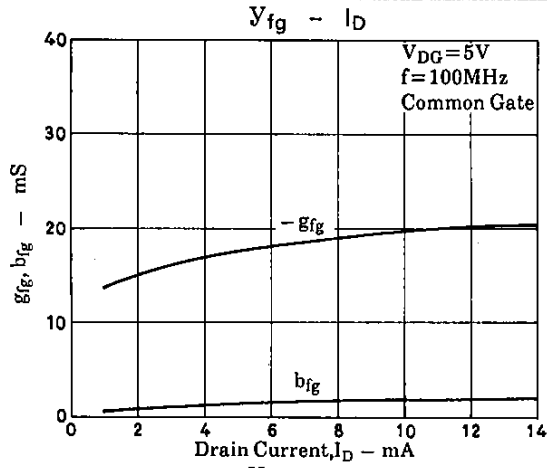
40	Y3	52	48	Y4	63	57	Y5	75
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Package Dimensions 2019A
(unit: mm)

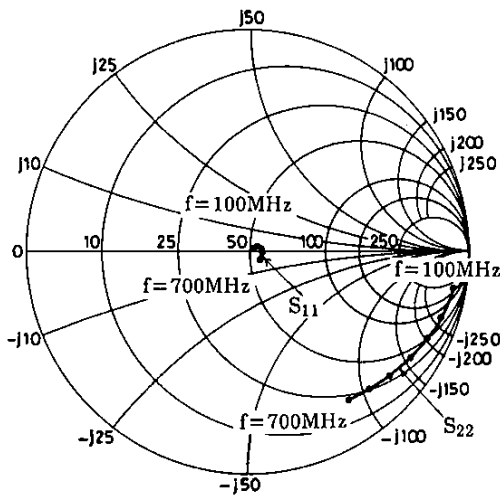




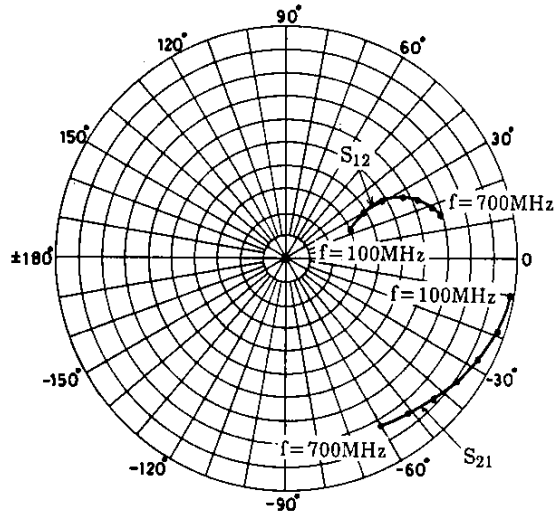




S Parameter Frequency Characteristic
(Common Gate) ($V_{DG} = 5V, I_D = 10mA$)



S Parameter Frequency Characteristic
(Common Gate) ($V_{DG} = 5V, I_D = 10mA$)



S Parameter (Common Gate)
 $V_{DG} = 5V, I_D = 10mA, Z_0 = 50\Omega$

Freq (MHz)	$ S_{11} $	$\angle S_{11}$	$ S_{21} $	$\angle S_{21}$	$ S_{12} $	$\angle S_{12}$	$ S_{22} $	$\angle S_{22}$
100	0.024	54.7	0.985	-9.7	0.059	21.9	0.942	-9.0
200	0.038	48.5	0.963	-18.8	0.078	30.1	0.918	-17.3
300	0.054	32.4	0.932	-27.3	0.097	30.2	0.896	-25.4
400	0.055	20.5	0.903	-35.4	0.113	27.3	0.870	-33.0
500	0.060	1.8	0.875	-43.6	0.124	23.4	0.847	-40.5
600	0.055	-19.1	0.849	-51.4	0.132	19.0	0.826	-48.2
700	0.053	-41.6	0.826	-60.1	0.137	15.0	0.811	-56.0

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