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PART NUMBER	$V_{(BR)GSS}$ MIN (V)	g_{fs} MIN (mS)	I_G MAX (pA)	$\lvert V_{GS_1} - V_{GS_2} \rvert$ MAX (mV)
2N3956	-50	1	-50	15
2N3957	-50	1	-50	20
2N3958	-50	1	-50	25

TO-71

BOTTOM VIEW

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

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMIT	UNITS
Gate-Drain Voltage		V_{GD}	-50	V
Gate-Source Voltage		V_{GS}	-50	
Forward Gate Current		I_G	50	mA
Power Dissipation	Per Side	P_D	250	mW
	Total		500	
Power Derating	Per Side		2.86	mW/°C
	Total		4.3	
Operating Junction Temperature		T_J	-55 to 150	°C
Storage Temperature		T_{stg}	-65 to 200	
Lead Temperature (1/16" from case for 10 seconds)		T_L	300	

ELECTRICAL CHARACTERISTICS[1]			LIMITS							
				2N3956		2N3957		2N3958		
PARAMETER	SYMBOL	TEST CONDITIONS	TYP[2]	MIN	MAX	MIN	MAX	MIN	MAX	UNIT
STATIC										
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G = -1 µA, V_{DS} = 0 V	-57	-50		-50		-50		V
Gate-Source Cutoff Voltage	$V_{GS(OFF)}$	V_{DS} = 20 V, I_D = 1 nA	-2	-1	-4.5	-1	-4.5	-1	-4.5	
Saturation Drain Current	I_{DSS}	V_{DS} = 20 V, V_{GS} = 0 V	3	0.5	5	0.5	5	0.5	5	mA
Gate Reverse Current	I_{GSS}	V_{GS} = -30 V, V_{DS} = 0 V	-10		-100		-100		-100	pA
		T_A = 150°C	-20		-500		-500		-500	nA
Gate Operating Current	I_G	V_{DS} = 20 V, I_D = 200 µA	-5		-50		-50		-50	pA
		T_A = 125°C	-0.8		-250		-250		-250	nA
Gate-Source Voltage	V_{GS}	V_{DS} = 20 V, I_D = 50 µA	-1.7		-4.2		-4.2		-4.2	V
		V_{DS} = 20 V, I_D = 200 µA	-1.5	-0.5	-4	-0.5	-4	-0.5	-4	
Gate-Source Forward Voltage	$V_{GS(F)}$	I_G = 1 mA, V_{DS} = 0 V	0.7		2		2		2	

DYNAMIC

Common-Source Forward Transconductance	g_{fs}	V_{DS} = 20 V, V_{GS} = 0 V, f = 1 kHz	2.5	1	3	1	3	1	3	mS
		V_{DS} = 20 V, V_{GS} = 0 V, f = 200 MHz	2	1		1		1		
Common-Source Output Conductance	g_{os}	V_{DS} = 20 V, V_{GS} = 0 V, f = 1 kHz	7		35		35		35	µS
Drain-Gate Capacitance	C_{dgo}	V_{DG} = 10 V, I_S = 0 mA, f = 1 MHz	1		1.5		1.5		1.5	pF
Common-Source Input Capacitance	C_{iss}	V_{DS} = 20 V, V_{GS} = 0 V, f = 1 MHz	3		4		4		4	
Common-Source Reverse Transfer Capacitance	C_{rss}		1		1.2		1.2		1.2	
Equivalent Input Noise Voltage	$\overline{e}_n$	V_{DG} = 10 V, I_D = 200 µA, f = 1 kHz	10							$\frac{nV}{\sqrt{Hz}}$
Noise Figure	NF	V_{DS} = 20 V, V_{GS} = 0 V, f = 100 Hz, R_G = 10 MΩ	<0.1		0.5		0.5		0.5	dB

MATCHING

Differential Gate-Source Voltage	$\lvert V_{GS1}-V_{GS2}\rvert$	V_{DS} = 20 V, I_D = 200 µA	10		15		20		25	mV
Gate-Source Voltage Differential Change with Temperature	$\frac{\Delta\lvert V_{GS1}-V_{GS2}\rvert}{\Delta T}$	V_{DS} = 20 V, I_D = 200 µA, T = -55 to 25°C	25		50		75		100	$\frac{\mu V}{°C}$
		V_{DS} = 20 V, I_D = 200 µA, T = 25 to 125°C	25		50		75		100	
Saturation Drain Current Ratio	$\frac{I_{DSS1}}{I_{DSS2}}$	V_{DS} = 20 V, V_{GS} = 0 V	0.97	0.95	1	0.9	1	0.85	1	
Transconductance Ratio	$\frac{g_{fs1}}{g_{fs2}}$	V_{DS} = 20 V, I_D = 200 µA, f = 1 kHz	0.97	0.95	1	0.9	1	0.85	1	
Differential Gate Current	$\lvert I_{G1}-I_{G2}\rvert$	V_{DS} = 20 V, I_D = 200 µA, T_A = 125°C	0.2		10		10		10	nA