IFN3954, IFN3955, IFN3956, IFN3957, IFN3958

N-Channel Matched Dual Silicon Junction Field-Effect Transistor

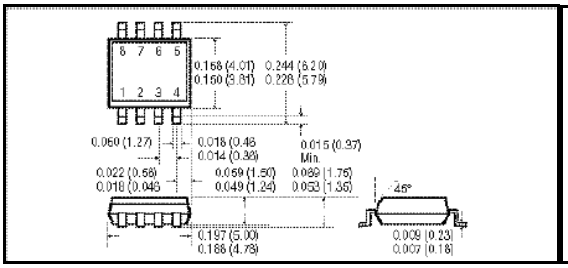
- **Improved Replacement for the 2N3954, 2N3955, 2N3456, 2N3457, & 2N3958**
- **Differential Inputs**

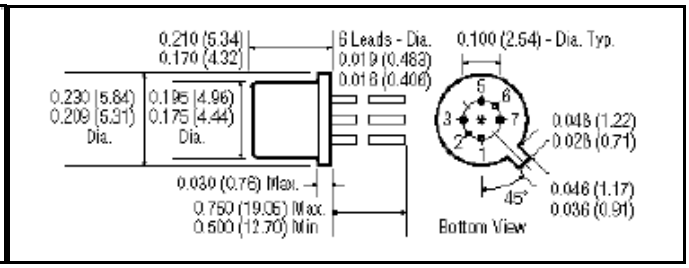
Absolute maximum ratings at $T_A = 25^oC$

Reverse Gate Source & Gate Drain Voltage	-50V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	250 mW
Power Derating	2.6 mW/°C
Operating Temperature Range	-55°C to +125°C
Storage Temperature Range	-65°C to +150°C

At 25°C free air temperature		3954, 3955, 3956, 3957, 3958				Process NJ16	
Static Electrical Characteristics		**Min**	**Typ**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	-50			V	I_G = -1 uA, V_{DS} = 0 V	
Gate Reverse Current	I_{GSS}			-100 -500	pA nA	V_{GS} = -30 V, V_{DS} = 0 V	 125°C
Gate Current	I_G			-50 -250	pA nA	V_{DS} = 20 V, I_D = 200 uA	 125°C
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	-1		-4.5	V	V_{DS} = 20 V, I_G = 1 nA	
Drain Saturation Current (pulsed)	I_{DSS}	0.5		5	mA	V_{DS} = 20 V, V_{GS} = 0 V	
Gate Source Voltage	V_{GS}	 -0.5		-4.2 -4	V	V_{DS} = 20 V, I_D = 50 uA V_{DS} = 20 V, I_D = 200 uA	
Gate Source Forward Voltage	$V_{GS(F)}$			2	V	V_{DS} = 0 V, I_G = 1 mA	
Dynamic Electrical Characteristics							
Common-Source Forward Transconductance	g_{fs}	1 1		3	mS	V_{DS} = 20 V, V_{GS} = 0 V	1 kHz 200 MHz
Common-Source Output Conductance	g_{os}			35	µS	V_{DS} = 20 V, V_{GS} = 0 V	f = 1 kHz
Common-Source Input Capacitance	C_{iss}			4	pF	V_{DS} = 20 V, V_{GS} = 0 V	f = 1 MHz
Common-Source Reverse Transfer Capacitance	C_{rss}			1.2	pF	V_{DS} = 20 V, V_{GS} = 0 V	f = 1 MHz
Noise Factor R_G = 10 MΩ	NF			0.5	dB	V_{DS} = 20 V, V_{GS} = 0 V	f = 1 kHz

		3954	3955	3956	3957	3958		Test	
		Max	**Max**	**Max**	**Max**	**Max**	**Unit**	**Conditions**	**T_A**
Differencial Gate-Source Voltage	$\lvert V_{GS1}-V_{GS2} \rvert$	5	10	15	20	25	mV	V_{DG} = 20 V, I_D = 200 uA	
Differencial Gate Source Voltage with Temperature	$\Delta \lvert V_{GS1}-V_{GS2} \rvert$	0.8 1.0	2 2.5	4 5	6 7	8 10	mV	V_{DG} = 20 V, I_D = 200 uA	25°C to -55°C 25°C to 125°C
Differential Gate Current	$\lvert I_{G1}-I_{G2} \rvert$	10	10	10	10	10	nA	V_{DG} = 20 V, I_D = 200 uA	125°C
		Min	**Min**	**Min**	**Min**	**Min**			
Saturation Drain Source Ratio	I_{DSS1}/I_{DSS2}	0.95	0.95	0.95	0.90	0.85		V_{DG} = 20 V, V_{GS} = 0 V	
Transconductance Ratio	$g_{fs\,1}/\ g_{fs\,2}$	0.97	0.97	0.95	0.90	0.85		V_{DG} = 20 V, I_D = 200 uA	1 kHz





Dimensions in Inches (mm)

SOIC-8 Package
SMP3954, SMP3955, SMP3956, SMP3957, SMP3958

Pin Configuration
1-G1, 2-D1, 3-S1, 4-G2, 5-G2, 6-D2, 7-S2, 8-G1

TO-71:
IFN3954, IFN3955, IFN3956, IFN3957, IFN3958

Pin Configuration
1-S1, 2-D1, 3-G1, 4-S2, 5-D2, 6-G2

InterFET

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