2N3993, 2N3993A

P-Channel Silicon Junction Field-Effect Transistor

- Choppers
- High Speed Commutators

Absolute maximum ratings at T_A = 25°C

Reverse Gate Source & Reverse Gate Drain Voltage	25 V
Continuous Forward Gate Current	– 10 mA
Continuous Device Power Dissipation	300 mW
Power Derating	2.4 mW/°C

At 25°C free air temperature:		2N3993		2N3993A		Process PJ99		
Static Electrical Characteristics		**Min**	**Max**	**Min**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	25		25		V	I_G = 1 µA, V_{DS} = ØV	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	4	9.5	4	9.5	V	V_{DS} = – 10V, I_D = – 1 µA	
Drain Saturation Current (Pulsed)	I_{DSS}	– 10		– 10		mA	V_{DS} = – 10V, V_{GS} = ØV	
Drain Reverse Current	I_{DGO}		– 1.2		– 1.2	nA	V_{DG} = – 15V, I_S = ØA	
			– 1.2		– 1.2	µA	V_{DG} = – 15V, I_S = ØA	T_A = 150°C
Drain Cutoff Current	$I_{D(OFF)}$		– 1.2		– 1.2	nA	V_{DS} = – 10V, V_{GS} = 10 V	
			– 1		– 1	µA	V_{DS} = – 10V, V_{GS} = 10 V	T_A = 150°C
Dynamic Electrical Characteristics								
Drain Source ON Resistance	$r_{ds(on)}$		150		150	Ω	V_{GS} = ØV, I_D = Ø A	f = 1 kHz
Common Source Forward Transmittance	$\lvert Y_{fs} \rvert$	6	12	7	12	mS	V_{DS} = – 10V, V_{GS} = ØV	f = 1 kHz
Common Source Input Capacitance	C_{iss}		16		12	pF	V_{DS} = – 10V, V_{GS} = ØV	f = 1 MHz
Common Source Reverse Transfer Capacitance	C_{rss}		4.5		3	pF	V_{DS} = Ø, V_{GS} = 10V	f = 1 MHz

TO-72 Package
Dimensions in Inches (mm)

Pin Configuration
1 Source, 2 Gate, 3 Drain, 4 Case

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