

2N3994, 2N3994A

P-Channel Silicon Junction Field-Effect Transistor

- Choppers
- High Speed Commutators

Absolute maximum ratings at $T_A = 25^\circ\text{C}$

Reverse Gate Source Voltage	25 V
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:

Static Electrical Characteristics

		2N3994		2N3994A		Unit	Process PJ99	
		Min	Max	Min	Max		Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	25		25		V	$I_G = 1\ \mu\text{A}, V_{DS} = 0\text{V}$	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	1	5.5	1	5.5	V	$V_{DS} = -10\text{V}, I_D = -1\ \mu\text{A}$	
Drain Saturation Current (Pulsed)	I_{DSS}	- 2		- 2		mA	$V_{DS} = -10\text{V}, V_{GS} = 0\text{V}$	
Drain Reverse Current	I_{DGO}		- 1.2		- 1.2	nA	$V_{DG} = -15\text{V}, I_S = 0\text{A}$	
			- 1.2		- 1.2	μA	$V_{DG} = -15\text{V}, I_S = 0\text{A}$ $T_A = 150^\circ\text{C}$	
Drain Cutoff Current	$I_{D(OFF)}$		- 1.2		- 1.2	nA	$V_{DS} = -10\text{V}, V_{GS} = 10\text{V}$	
			- 1		- 1	μA	$V_{DS} = -10\text{V}, V_{GS} = 10\text{V}$ $T_A = 150^\circ\text{C}$	

Dynamic Electrical Characteristics

Drain Source ON Resistance	$r_{ds(on)}$		300		300	Ω	$V_{GS} = 0\text{V}, I_D = 0\text{A}$	$f = 1\ \text{kHz}$
Common Source Forward Transmittance	$ Y_{fs} $	4	10	5	10	mS	$V_{DS} = -10\text{V}, V_{GS} = 0\text{V}$	$f = 1\ \text{kHz}$
Common Source Input Capacitance	C_{iss}		16		12	pF	$V_{DS} = -10\text{V}, V_{GS} = 0\text{V}$	$f = 1\ \text{MHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		5		3.5	pF	$V_{DS} = 0, V_{GS} = 10\text{V}$	$f = 1\ \text{MHz}$

TO-72 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Gate, 3 Drain, 4 Case



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