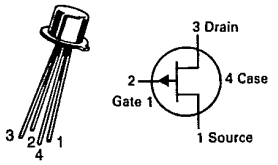
T-35-25

2N3993,A
2N3994

CASE 20-03, STYLE 5
TO-72 (TO-206AF)



JFET
SWITCHING

P-CHANNEL — DEPLETION

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	−25	Vdc
Drain-Gate Voltage	V_{DG}	−25	Vdc
Reverse Gate-Source Voltage	V_{GSR}	25	Vdc
Forward Gate Current	I_{GF}	10	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	300 2.0	mW mW/°C
Storage Temperature Range	T_{stg}	−65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage (I_G = 1.0 μAdc, V_{DS} = 0)		$V_{(BR)GSS}$	25	—	Vdc
Drain Reverse Current		I_{DGO}			
(V_{DG} = −15 Vdc, I_S = 0)			—	1.2	nAdc
(V_{DG} = −15 Vdc, I_S = 0, T_A = 150°C)			—	1.2	μAdc
Drain Cutoff Current		$I_{D(off)}$			
(V_{DS} = −10 Vdc, V_{GS} = 10 Vdc)	2N3993, 2N3993A		—	1.2	nAdc
(V_{DS} = −10 Vdc, V_{GS} = 6.0 Vdc)	2N3994		—	1.2	
(V_{DS} = −10 Vdc, V_{GS} = 10 Vdc, T_A = 150°)	2N3993, 2N3993A		—	1.0	μAdc
(V_{DS} = −10 Vdc, V_{GS} = 6.0 Vdc, T_A = 150°)	2N3994		—	1.0	
Gate Source Voltage		V_{GS}			Vdc
(V_{DS} = −10 Vdc, I_D = −1.0 μAdc)	2N3993, 2N3993A		4.0	9.5	
	2N3994		1.0	5.5	
ON CHARACTERISTICS					
Zero-Gate-Voltage Drain Current(1)		I_{DSS}			mAdc
(V_{DS} = −10 Vdc, V_{GS} = 0)	2N3993, 2N3993A		10	—	
	2N3994		2.0	—	
SMALL-SIGNAL CHARACTERISTICS					
Drain-Source "ON" Resistance		$r_{ds(on)}$			Ohms
(V_{GS} = 0, I_D = 0, f = 1.0 kHz)	2N3993, 2N3993A		—	150	
	2N3994		—	300	
Forward Transfer Admittance(1)		$\|y_{fs}\|$			mmhos
(V_{DS} = −10 Vdc, V_{GS} = 0, f = 1.0 kHz)	2N3993		6.0	12	
	2N3993A		7.0	12	
	2N3994		4.0	10	
Input Capacitance		C_{iss}			pF
(V_{DS} = −10 Vdc, V_{GS} = 0, f = 1.0 MHz)	2N3993, 2N3994		—	16	
	2N3993A		—	12	
Reverse Transfer Capacitance		C_{rss}			pF
(V_{DS} = 0, V_{GS} = 10 Vdc, f = 1.0 MHz)	2N3993		—	4.5	
	2N3993A		—	3.0	
(V_{DS} = 0, V_{GS} = 6.0 Vdc, f = 1.0 MHz)	2N3994		—	5.0	

(1) Pulse Test: Pulse Width = 100 ms, Duty Cycle ≤ 10%.