

Siliconix

SEMICONDUCTOR DEVICES

FIELD-EFFECT TRANSISTORS

JUNCTION FETS

DUAL FETS

MOS FETS

PHOTOSENSITIVE FETS

VOLTAGE-CONTROLLED RESISTOR FETS

CURRENT LIMITERS

CURRENT REGULATORS

ANALOG INTEGRATED CIRCUITS

MULTI-CHANNEL FET SWITCHES

DRIVERS FOR FET SWITCHES

FET SWITCHES WITH DRIVERS

MULTIPLEXERS



Siliconix incorporated

CARDINAL INDUSTRIAL
ELECTRONICS
Edmonton

R-A-E INDUSTRIAL
ELECTRONICS
Vancouver

SILICONIX PLASTIC field-effect products

ANALOG SWITCHES, CHOPPERS, COMMUTATORS

Type #	Package TO-	$r_{DS(on)}$ (Max) Ohm	V_p^* (Min/Max) V	BV_{GSS} (Min) V	I_{GSS} (Max) nA	$I_D(off)$ (Max) nA	$(C_{dg} + C_{cg})$ (Max) pF	$(C_{dg}(off) or C_{cg}(off))$ (Max) pF	$t_d(on)$ (Typ) ns	t_r (Typ) ns	$t_d(off)$ (Typ) ns	t_f (Typ) ns	N or P
E105	106(A)	3	-4.5/-10	-30	-3	-3	160	35.0	15	20	15	20	N
E106	106(A)	6	-2/-6	-30	-3	-3	160	35.0	15	20	15	20	N
E107	106(A)	8	-0.5/-4.5	-30	-3	-3	160	35.0	15	20	15	20	N
E108	106(A)	8	-3/-10	-25	-3	-3	85	15.0	4	1	6	30	N
E109	106(A)	12	-2/-6	-25	-3	-3	85	15.0	4	1	6	30	N
E110	106(A)	18	-0.5/-4	-25	-3	-3	85	15.0	4	1	6	30	N
E111	106(A)	30	-3/-10	-35	-1	-1	28	5.0	7	6	20	15	N
E112	106(A)	50	-1/-5	-35	-1	-1	28	5.0	7	6	35	20	N
E113	106(A)	100	-0.5/-3	-35	-1	-1	28	5.0	7	6	50	30	N
E114	106(A)	150	-3/-10	-35	-1	-1	8	2.0	3	3	12	8	N
E174	106(B)	85	5/10	30	1	1	40	5.5	2	5	5	10	P
E175	106(B)	125	3/6	30	1	1	40	5.5	5	10	10	20	P
E176	106(B)	250	1/4	30	1	1	40	5.5	15	20	15	20	P

* $V_p = V_{GS(OFF)}$ @ $I_D = 1\mu A$.

GENERAL PURPOSE AMPLIFIERS

Type #	Package TO-	f_{ts} (Min/Max) μ mho	V_p (Min/Max) V	I_{DSS} (Min/Max) mA	BV_{GSS} (Min) V	I_{GSS} (Max) nA	C_{iss} (Typ) pF	C_{rss} (Typ) pF	\bar{e}_n^* (Typ) nV/\sqrt{Hz}	N or P
E201	106(A)	500	-0.3/-1.5	0.2/1.0	-40	-0.1	5.5	2	10	N
E202	106(A)	1000	-0.8/-4.0	0.9/4.5	-40	-0.1	5.5	2	10	N
E203	106(A)	1500	-2/-10	4/20	-40	-0.1	5.5	2	10	N
E210	106(A)	4000/12000	-1/-3	2/15	-25	-0.1	5.0	1.5	10	N
E211	106(A)	7000/12000	-2.5/-4.5	7/20	-25	-0.1	5.0	1.5	10	N
E212	106(A)	7000/12000	-4/-6	15/40	-25	-0.1	5.0	1.5	10	N
E230	106(A)	1000/2500	-1/-3	0.7/3	-40	-0.25	15.0	2	5	N
E231	106(A)	1500/3000	-2/-5	2/6	-40	-0.25	15.0	2	5	N
E232	106(A)	2500/4000	-4/-6	5/10	-40	-0.25	15.0	2	5	N
E270	106(B)	6000/15000	0.5/2	-2/-15	30	0.2	20.0	5	10	P
E271	106(B)	8000/18000	1.5/4.5	-6/-50	30	0.2	20.0	5	10	P

* $f = 1KHz$.

VHF/UHF AMPLIFIERS, OSCILLATORS AND MIXERS

Type #	Package TO-	f_{ts} (Min/Max) μ mho	C_{iss} (Max) pF	C_{rss} (Max) pF	V_{oss} (Max) μ V	I_{DSS} (Min/Max) mA	V_p (Min/Max) V	I_{GSS} (Max) nA	BV_{GSS} (Min) V	Noise Figure (Typ) dB @ MHz	N or P	
E300	106(A)	4500/9000	5.5	1.7	200	6/30	-1/-6	-0.5	-25	3.5	450	N
E304	106(A)	4500/7500	3*	0.8*	50	5/15	-2/-6	-0.1	-30	1.7	100	N
E305	106(A)	3000/—	3*	0.8*	50	1/8	-0.5/-3	-0.1	-30	—	—	N

*Typical.

N-CHANNEL DIFFERENTIAL PAIRS Δ

Type #	$ V_{GS1} - V_{GS2} $ (Max) mV	$\frac{\Delta I_D}{\Delta T}$ (Max) $\mu V/^\circ C$	CMRR (Min) dB	f_{ts} (Min/Max) μ mho	V_p (Min/Max) V	I_{DSS} (Min/Max) mA	BV_{GSS} (Min) V	I_{GSS} (Max) nA	C_{iss} (Typ) pF	C_{rss} (Typ) pF	\bar{e}_n^\dagger (Typ) nV/\sqrt{Hz}
E400	10	10	70*	1000/3000	-1/-4.5	0.5/5	-40	-0.2	4.5	1.2	50
E401	10	25	70*	1000/3000	-1/-4.5	0.5/5	-40	-0.2	4.5	1.2	50
E402	20	50	70*	1000/3000	-1/-4.5	0.5/5	-40	-0.2	4.5	1.2	50
E413**	20	25	85	1000/3000	-1/-4.5	0.5/6	-40	-0.25	4.0	0.75	15
E414**	30	50	—	1000/3000	-1/-4.5	0.5/6	-40	-0.25	4.0	0.75	15
E415**	50	75	—	1000/3000	-1/-4.5	0.5/6	-40	-0.25	4.0	0.75	15
E420	10	—	—	4500/9000	-1/-6.0	6/30	-25	-0.5	4.0	1.2	—
E421	20	—	—	4500/9000	-1/-6.0	6/30	-25	-0.5	4.0	1.2	—

Δ Package: S1-208.

** Monolithic Dual FET.

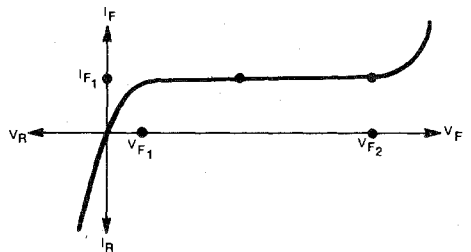
$\dagger f = 100 Hz$.

* Typical

FET CURRENT-LIMITER DIODES

Type #	Package TO-	I_{F1} (Nom) [*] μA	V_{F1} (Max) V	Z_{F1} (Min) Ω	V_{F2} (Min) V
E500	106(C)	240	1.2	5.0	50
E501	106(C)	330	1.3	3.0	50
E502	106(C)	430	1.5	2.0	50
E503	106(C)	560	1.7	1.4	50
E504	106(C)	750	1.9	1.0	50
E505	106(C)	1000	2.1	0.6	50
E506	106(C)	1400	2.5	0.4	50
E507	106(C)	1800	2.8	0.25	50

* I_{F1} tolerance is $\pm 20\%$.



CARDINAL INDUSTRIAL
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Type	Package TO-	I _{SS} (Max) (nA)	V _{GS} (Min) (V)	V _P (V)	I _{DSS} (Min) (mA)	I _{DSS} (Max) (mA)	g _m (Min) (μmho)	g _m (Max) (μmho)	C _{iss} (pF)	C _{rss} (pF)	f _{OS} (Max) (MHz)	I _{D(OFF)} (Max) (nA)	Nf in dB	N or P	Application
E100	E*	0.5	30	10.0	0.2	20.0	500	-	8.0	3.0	-	-	-	N	Amplifiers, Choppers
E101	E*	0.5	30	1.5	0.2	1.0	500	-	8.0	3.0	-	-	-	N	
E102	E*	0.5	30	4.0	0.9	4.5	1000	-	8.0	3.0	-	-	-	N	
E103	E*	0.5	30	10.0	4.0	20.0	1000	-	8.0	3.0	-	-	-	N	
E108	E*	10.0	20	10.0	80.0	-	-	-	-	-	8.0	10.0	-	N	Analog Switches, Choppers, Commutators
E109	E*	10.0	20	6.0	40.0	-	-	-	-	-	12.0	10.0	-	N	
E110	E*	10.0	20	4.0	10.0	-	-	-	-	-	18.0	10.0	-	N	
E111	E*	3.0	25	10.0	20.0	-	-	-	-	-	30.0	3.0	-	N	
E112	E*	3.0	25	5.0	5.0	-	-	-	-	-	50.0	3.0	-	N	
E113	E*	3.0	25	3.0	2.0	-	-	-	-	-	100.0	3.0	-	N	
E300	E*	0.5	25	6.6	6.0	30.0	4500	9000	5.5	1.7	-	-	-	N	VHF/UHF
EP120	E+	0.5	30	10.0	0.2	20.0	600	-	8.0	3.0	-	-	-	N	Photodiode and Amplifier
EP121	E+	0.5	30	1.5	0.2	1.0	500	-	8.0	3.0	-	-	-	N	
EP122	E+	0.5	30	4.0	0.9	4.5	1000	-	8.0	3.0	-	-	-	N	
EP123	E+	0.5	30	10.0	4.0	20.0	1500	-	8.0	3.0	-	-	-	N	
P236	72#	0.25	40	2.0	0.4	1.2	700	2000	25.0	5.0	-	-	-	N	
P237	72#	0.25	40	3.0	1.0	3.0	1000	3000	25.0	5.0	-	-	-	N	
P238	72#	0.25	40	5.0	2.5	7.5	1300	4000	25.0	5.0	-	-	-	N	
U110	18	4.0	20	6.0	0.1	1.0	110	-	6.0	-	-	-	-	P	General Purpose
U112	18	10.0	20	6.0	0.9	9.0	1000	-	17.0	-	-	-	-	P	
U114	46	1.0	30	0.4	0.1	0.5	110	-	6.0	-	-	-	-	P	
U133	18	3.0	60	4.0	0.3	1.5	330	-	10.0	-	-	-	-	P	
U139	5	10.0	30	10.0	9.0	35.0	7000	-	16.0	-	150.0	-	-	P	
U139D	5	10.0	20	10.0	4.0	50.0	5000	-	16.0	-	200.0	-	-	P	
U145	18	10.0	20	6.0	0.025	-	60	-	6.0	-	-	-	-	P	
U147	18	20.0	20	6.0	0.065	-	180	-	10.0	-	-	-	-	P	
U148	18	60.0	20	6.0	0.2	-	540	-	17.0	-	-	-	-	P	
U149	18	200.0	20	6.0	0.44	-	1800	-	30.0	-	-	-	-	P	
U168	18	30.0	20	5.0	0.6	6.0	800	-	65.0	-	-	-	25.0 @1 KHz	P	Low Noise
U183	72	2.0	25	8.0	2.0	20.0	2000	6500	8.0	4.0	-	-	2.5 @100 MHz	N	RF
U184	72	1.0	25	8.0	3.0	30.0	3000	8500	4.0	1.0	-	-	2.5 @100 MHz	N	
U197	18	0.5	30	1.0	0.1	1.0	200	-	7.0	-	4000.0	-	-	N	General Purpose
U198	18	0.5	30	4.0	0.6	6.0	600	-	7.0	-	1500.0	-	-	N	
U199	18	0.5	30	10.0	3.0	20.0	1500	-	7.0	-	650.0	-	-	N	
U200	18	1.0	30	3.0	3.0	25.0	-	-	30.0	8.0	150.0	1.0	-	N	Analog Switch
U201	18	1.0	30	5.0	15.0	75.0	-	-	30.0	8.0	75.0	1.0	-	N	
U202	18	1.0	30	10.0	30.0	150.0	-	-	30.0	8.0	50.0	1.0	-	N	
U221	5	1.0	50	5.0	5.0	110.0	15000	40000	25.0	6.0	-	-	-	N	RF Power
U222	5	1.0	50	10.0	100.0	250.0	20000	50000	25.0	6.0	-	-	-	N	
U240	52	3.0	25	10.0	150.0	-	-	-	70.0	35.0	5.0	3.0	-	N	Analog Switch
U241	52	3.0	25	10.0	100.0	-	-	-	70.0	35.0	10.0	3.0	-	N	
U242	52	3.0	25	10.0	150.0	-	-	-	70.0	35.0	6.0	3.0	-	N	
U243	52	3.0	25	10.0	100.0	-	-	-	70.0	35.0	12.0	3.0	-	N	
U244	60	1.0	25	8.0	300.0	900.0	80000	200000	35.0	15.0	10.0	1.0	-	N	RF Power
U266	60	6.0	150	15.0	100.0	300.0	20000	40000	28.0	16.0	100.0	1.5	-	N	
U273	72	0.005	30	3.0	0.5	2.0	500	-	2.0	0.5	-	-	-	N	Wideband Amplifiers
U237A	72	0.002	30	3.0	0.5	2.0	500	-	2.0	0.5	-	-	-	N	
U274	72	0.005	30	5.0	1.0	4.0	600	-	2.0	0.5	-	-	-	N	
U274A	72	0.002	30	5.0	1.0	4.0	600	-	2.0	0.5	-	-	-	N	
U275	72	0.005	30	7.0	3.0	6.5	800	-	2.0	0.5	-	-	-	N	
U275A	72	0.002	30	7.0	3.0	6.5	800	-	2.0	0.5	-	-	-	N	
U290	52	0.5	30	10.0	500.0	-	-	-	60.0	30.0	2.5	0.5	-	N	Analog Switch
U291	52	0.5	30	6.0	300.0	-	-	-	60.0	30.0	4.0	0.5	-	N	
U300	18	0.1	40	10.0	30.0	90.0	8000	12000	20.0	5.5	60.0	0.1	-	P	Consumer/Industrial
U301	18	0.1	40	6.0	15.0	60.0	7000	11000	20.0	5.5	100.0	0.1	-	P	
U304	18	0.5	30	10.0	30.0	90.0	-	-	27.0	7.0	85.0	0.5	-	P	Switches, Choppers, Commutators
U305	18	0.5	30	6.0	15.0	60.0	-	-	27.0	7.0	110.0	0.5	-	P	
U306	18	0.5	30	4.0	5.0	25.0	-	-	27.0	7.0	175.0	0.5	-	P	
U310	52	0.5	25	6.0	20.0	60.0	10000	20000	7.5	2.5	-	-	-	N	VHF/UHF
U312	52	0.1	25	6.0	10.0	30.0	6000	10000	5.0	1.5	-	-	-	N	
UT100	OD80	0.1	25	6.0	10.0	30.0	6000	10000	5.0	2.0	-	-	-	N	
UT101	OD80	0.1	25	6.0	10.0	30.0	6000	10000	5.0	2.0	-	-	-	N	
UT103	OD81	0.1	25	6.0	10.0	30.0	6000	10000	5.0	1.2	-	-	-	N	
UT104	OD82	0.1	25	6.0	10.0	30.0	6000	10000	5.0	1.2	-	-	-	N	
2N2606	18	1.0	30	0.4	0.1	0.5	110	-	8.0	-	-	-	-	P	General Purpose
2N2607	18	3.0	30	0.4	0.3	1.5	330	-	10.0	-	-	-	-	P	
2N2608	18	10.0	30	0.4	0.9	4.5	1000	-	17.0	-	-	-	-	P	
2N2609	18	30.0	30	0.4	2.0	10.0	2500	-	30.0	-	-	-	-	P	
2N2841	18	1.0	30	1.7	0.025	0.125	60	-	6.0	-	-	-	-	P	Low V _P
2N2842	18	3.0	30	1.7	0.065	0.325	180	-	10.0	-	-	-	-	P	
2N2843	18	10.0	30	1.7	0.2	0.1	540	-	17.0	-	-	-	-	P	
2N2844	18	30.0	30	1.7	0.44	2.2	1400	-	30.0	-	-	-	-	P	
2N3066	18	1.0	50	9.5	0.8	4.0	400	1000	10.0	-	-	-	3.0 @1 KHz	N	General Purpose
2N3067	18	1.0	50	4.5	0.2	1.0	300	1000	10.0	-	-	-	3.0 @1 KHz	N	
2N3068	18	1.0	50	2.2	0.05	0.25	200	1000	10.0	-	-	-	3.0 @1 KHz	N	
2N3069	18	1.0	50	9.5	2.0	10.0	1000	2500	15.0	-	-	-	3.0 @1 KHz	N	
2N3070	18	1.0	50	4.5	0.5	2.5	750	2500	15.0	-	-	-	3.0 @1 KHz	N	
2N3071	18	1.0	50	2.2	0.1	0.6	500	2500	15.0	-	-	-	3.0 @1 KHz	N	
2N3089	18	1.0	30	5.0	0.5	2.0	300	2000	6.0	2.0	-	-	3.0 @10 KHz	N	Low Noise Amplifier
2N3089A	18	1.0	30	5.0	0.5	2.0	300	2000	6.0	2.0	-	-	0.5 @15 KHz	N	
2N3112	72	0.05	20	4.0	0.035	0.175	50	115	3.5	-	-	-	-	P	Low I _{GS}
2N3328	72	1.0	20	6.0	-	1.0	100	-	4.0	-	-	-	3.0 @1 KHz	P	General Purpose
2N3329	72	10.0	20	5.0	1.0	3.0	1000	2000	32.0	-	1000.0	-	3.0 @1 KHz	P	
2N3330	72	10.0	20	6.0	2.0	6.0	1500	3000	32.0	-	800.0	-	3.0 @1 KHz	P	

*Epoxy *Epoxy With Lens #With Lens

Type	Package TO	I _{GSS} (Max) (mA)	V _{GSS} (Min) (V)	V _p (Max) (V)	I _{DSS} (Min) (mA)	I _{DSS} (Max) (mA)	θ _{JC} (μmho) (Min)	C _{iss} (pF) (Max)	C _{oss} (pF) (Max)	r _{DS} (Ω) (Max)	I _{D(OFF)} (Max) (mA)	Nf in dB	N or P	Application
2N3331	72	10.0	20	8.0	5.0	15.0	2000	4000	32.0	—	400.0	—	P	
2N3365	18	5.0	40	11.5	0.8	4.0	400	2000	15.0	—	—	4.0 @1 KHz	N	General Purpose
2N3366	18	5.0	40	6.5	0.2	1.0	250	1000	15.0	—	—	—	N	
2N3367	18	5.0	40	2.2	0.05	0.25	100	1000	15.0	—	—	—	N	
2N3376	72	3.0	30	5.0	0.6	6.0	800	2300	5.0	3.0	1500.0	0.4	P	
2N3378	72	3.0	30	5.0	3.0	20.0	1500	2300	5.0	3.0	750.0	0.4	P	
2N3380	72	3.0	30	9.5	3.0	20.0	1500	3000	5.0	3.0	600.0	0.5	P	Analog Switch
2N3382	72	15.0	30	5.0	3.0	30.0	4500	12500	16.0	6.0	300.0	2.0	P	
2N3384	72	15.0	30	5.0	15.0	30.0	7500	12500	16.0	6.0	180.0	2.0	P	
2N3386	72	15.0	30	9.5	15.0	30.0	7500	15000	16.0	6.0	150.0	2.5	P	
2N3436	18	0.5	50	9.8	3.0	15.0	2500	10000	18.0	—	—	2.0 @1 KHz	N	
2N3437	18	0.5	50	4.8	0.8	4.0	1500	6000	18.0	—	—	2.0 @1 KHz	N	
2N3438	18	0.5	50	2.3	0.2	1.0	800	4500	18.0	—	—	2.0 @1 KHz	N	
2N3452	72	0.1	50	9.8	0.8	4.0	200	1200	6.0	—	—	2.0 @100 Hz	N	
2N3453	72	0.1	50	4.8	0.2	1.0	150	900	6.0	—	—	2.0 @100 Hz	N	General Purpose
2N3454	72	0.1	50	2.3	0.05	0.25	100	600	6.0	—	—	2.0 @100 Hz	N	
2N3455	72	0.04	50	9.8	0.8	4.0	400	1200	5.0	—	—	4.0 @20 Hz	N	
2N3456	72	0.04	50	4.8	0.2	1.0	300	900	5.0	—	—	4.3 @20 Hz	N	
2N3457	72	0.25	50	2.3	0.05	0.25	150	600	5.0	—	—	4.0 @20 Hz	N	
2N3458	18	0.25	50	7.8	3.0	15.0	2500	10000	18.0	—	—	6.0 @20 Hz	N	
2N3459	18	0.25	50	3.4	0.8	4.0	1500	6000	18.0	—	—	4.0 @20 Hz	N	
2N3460	18	0.25	50	1.8	0.2	1.0	800	4500	18.0	—	—	4.0 @20 Hz	N	
2N3578	18	15.0	20	4.0	0.5	2.5	1500	—	65.0	—	—	18.0 @1 KHz	P	Low Noise
2N3684	72	0.1	50	5.0	2.5	7.5	2000	3000	4.0	1.2	600.0	—	N	
2N3685	72	0.1	50	3.5	1.0	3.0	1500	2500	4.0	1.2	800.0	—	N	Analog Switch
2N3686	72	0.1	50	2.0	0.4	1.2	1000	2000	4.0	1.2	1200.0	—	N	
2N3687	72	0.1	50	1.2	0.1	0.5	500	1500	4.0	1.2	2400.0	—	N	
2N3821	72	0.1	50	4.0	0.5	2.5	1500	4500	6.0	3.0	—	200.0 @10 Hz	N	General Purpose
2N3822	72	0.1	50	6.0	2.0	10.0	3000	4500	6.0	3.0	—	200.0 @10 Hz	N	Purpose
2N3823	72	0.5	30	8.0	4.0	20.0	3500	6500	6.0	2.0	—	2.5 @100 MHz	N	RF
2N3824	72	0.1	50	8.0	—	—	—	—	6.0	3.0	250.0	0.1	N	Switch
2N3970	18	0.25	40	10.0	50.0	150.0	—	—	25.0	6.0	30.0	0.25	N	
2N3971	18	0.25	40	5.0	25.0	75.0	—	—	25.0	6.0	60.0	0.25	N	
2N3972	18	0.25	40	3.0	5.0	30.0	—	—	25.0	6.0	100.0	0.25	N	Analog Switch
2N4091	18	0.2	40	10.0	30.0	—	—	—	16.0	5.0	30.0	0.2	N	Switch
2N4092	18	0.2	40	7.0	15.0	—	—	—	16.0	5.0	50.0	0.2	N	
2N4093	18	0.2	40	5.0	8.0	—	—	—	16.0	5.0	80.0	0.2	N	
2N4117	72	0.01	40	1.8	0.03	0.09	70	210	3.0	1.5	—	—	N	
2N4117A	72	0.001	40	1.8	0.03	0.09	70	210	3.0	1.5	—	—	N	
2N4118	72	0.01	40	3.0	0.08	0.24	80	250	3.0	1.5	—	—	N	Low I _{GSS}
2N4118A	72	0.001	40	3.0	0.08	0.24	80	250	3.0	1.5	—	—	N	< I _{PA}
2N4119	72	0.01	40	6.0	0.2	0.6	100	330	3.0	1.5	—	—	N	
2N4119A	72	0.001	40	6.0	0.2	0.6	100	330	3.0	1.5	—	—	N	
2N4220	72	0.1	30	4.0	0.5	3.0	1000	4000	6.0	2.0	—	—	N	
2N4220A	72	0.1	30	4.0	0.5	3.0	1000	4000	6.0	2.0	—	2.5 @100 Hz	N	
2N4221	72	0.1	30	6.0	2.0	6.0	2000	5000	6.0	6.0	290.0	—	N	
2N4221A	72	0.1	30	6.0	2.0	6.0	2000	5000	6.0	2.0	—	2.5 @100 Hz	N	AF - RF
2N4222	72	0.1	30	8.0	5.0	15.0	2500	6000	6.0	2.0	—	—	N	
2N4222A	72	0.1	30	8.0	5.0	15.0	2500	6000	6.0	2.0	—	2.5 @100 Hz	N	
2N4223	72	2.5	30	8.0	3.0	18.0	3000	7000	6.0	2.0	—	5.0 @200 MHz	N	
2N4224	72	0.5	30	8.0	2.0	20.0	2000	7500	6.0	2.0	—	5.0 @200 MHz	N	
2N4338	18	0.1	50	1.8	0.2	0.6	600	1800	7.0	3.0	2500.0	0.05	N	
2N4339	18	0.1	50	1.8	0.5	1.5	800	2400	7.0	3.0	1700.0	0.05	N	Low Noise
2N4340	18	0.1	50	3.0	1.2	3.6	1300	3000	7.0	3.0	1500.0	0.05	N	3:1 I _{DSS}
2N4341	18	0.1	50	6.0	3.0	9.0	2000	4000	7.0	3.0	800.0	0.07	N	
2N4391	18	0.1	40	10.0	50.0	150.0	—	—	14.0	3.5	30.0	0.1	N	
2N4392	18	0.1	40	5.0	25.0	75.0	—	—	14.0	3.5	60.0	0.1	N	Analog Switch
2N4393	18	0.1	40	3.0	5.0	30.0	—	—	14.0	3.5	100.0	0.1	N	
2N4416	72	0.1	30	6.0	5.0	15.0	4500	7500	4.0	0.8	—	4.0 @400 MHz	N	UHF-400MHz
2N4416A	72	0.1	35	6.0	5.0	15.0	4500	7500	4.0	0.8	—	4.0 @400 MHz	N	G _{ps} = 10 dB
2N4417	ODB1	0.1	30	6.0	5.0	15.0	4500	7500	3.5	—	—	4.0 @400 MHz	N	
2N4856	18	0.25	40	10.0	50.0	—	—	—	18.0	0.8	25.0	0.25	N	
2N4856A	18	0.25	40	10.0	50.0	—	—	—	18.0	0.8	25.0	0.25	N	
2N4857	18	0.25	40	6.0	20.0	100.0	—	—	18.0	0.8	40.0	0.25	N	
2N4857A	18	0.25	40	6.0	20.0	100.0	—	—	18.0	0.8	40.0	0.25	N	
2N4858	18	0.25	40	4.0	8.0	80.0	—	—	18.0	0.8	60.0	0.25	N	
2N4858A	18	0.25	40	4.0	8.0	80.0	—	—	18.0	0.8	60.0	0.25	N	Analog Switch
2N4859A	18	0.25	30	10.0	50.0	—	—	—	18.0	0.8	25.0	0.25	N	
2N4859	18	0.25	30	10.0	50.0	—	—	—	18.0	0.8	25.0	0.25	N	
2N4860	18	0.25	30	6.0	20.0	100.0	—	—	18.0	0.8	40.0	0.25	N	
2N4860A	18	0.25	30	6.0	20.0	100.0	—	—	18.0	0.8	40.0	0.25	N	
2N4861	18	0.25	30	4.0	8.0	80.0	—	—	18.0	0.8	60.0	0.25	N	
2N4861A	18	0.25	30	4.0	8.0	80.0	—	—	18.0	0.8	60.0	0.25	N	
2N4867	72	0.25	40	2.0	0.4	1.2	700	2000	25.0	—	—	10.0 @1 KHz	N	
2N4867A	72	0.25	40	2.0	0.4	1.2	700	2000	25.0	—	—	5.0 @1 KHz	N	
2N4868	72	0.25	40	3.0	1.0	3.0	1000	3000	25.0	—	—	10.0 @1 KHz	N	Low Noise
2N4868A	72	0.25	40	3.0	1.0	3.0	1000	3000	25.0	—	—	5.0 @1 KHz	N	
2N4869	72	0.25	40	5.0	2.5	7.5	1300	4000	25.0	—	—	10.0 @1 KHz	N	
2N4869A	72	0.25	40	5.0	2.5	7.5	1300	4000	25.0	—	—	5.0 @1 KHz	N	
2N5114	18	0.5	30	10.0	30.0	15.0	—	—	25.0	7.0	75.0	0.5	P	Analog
2N5115	18	0.5	30	6.0	90.0	60.0	—	—	25.0	7.0	100.0	0.5	P	Switches,
2N5116	18	—	—	—	—	—	—	—	—	—	—	—	P	Choppers
2N5397	72	0.1	25	6.0	10.0	30.0	6000	10000	5.0	1.2	—	—	N	UHF-450 MHz
2N5398	72	0.1	25	6.0	5.0	40.0	5500	10000	5.5	1.3	—	—	N	I _{DS} = 15 dB
2N5432	52	0.2	25	10.0	150.0	—	—	—	30.0	15.0	5.0	0.2	N	
2N5433	52	0.2	25	9.0	100.0	—	—	—	30.0	15.0	7.0	0.2	N	Analog
2N5434	52	0.2	25	4.0	30.0	—	—	—	30.0	15.0	10.0	0.2	N	Switch
2N5647	72	0.01	50	1.8	0.3	0.6	300	650	3.0	—	—	—	N	2:1 I _{DSS} /I _{DS}
2N5648	72	0.01	50	2.4	0.5	1.0	400	800	3.0	—	—	—	N	I _G = 1 pA
2N5649	72	0.01	50	3.0	0.8	1.6	450	900	3.0	—	—	—	N	

*Epoxy *Epoxy With Lens #With Lens

Type	Package	V _{GS1} -V _{GS2} Max (mV)	V _{GS} /T Max (μV/°C)	I _{Q1} -I _{Q2} Max @ 125°C (nA)	G _{m1} /G _{m2}	I _a Max (pA)	BV _{GS} Min (V)	V _P Max (V)	I _{DSS} Min (mA)	(mA) Max	Series Feature	
U231	SI-71	5.0	10.0	10.0	50.0	50.0	-	4.5	0.5	5.0	General Purpose	
U232	SI-71	10.0	25.0	10.0	0.95	50.0	50	4.5	0.5	5.0		
U233	SI-71	15.0	50.0	10.0	0.95	50.0	50	4.5	0.5	5.0		
U234	SI-71	20.0	75.0	10.0	0.90	50.0	50	4.5	0.5	5.0		
U235	SI-71	25.0	100.0	10.0	0.85	50.0	50	4.5	0.5	5.0		
U257	TO-78	100.0	-	-	0.85	-	25	5.0	5.0	40.0	High Frequency	
U280	TO-71	10.0	10.0	10.0	0.97	50.0	50	4.5	0.5	6.0	Monolithic	
U281	TO-71	25.0	10.0	10.0	0.95	50.0	50	4.5	0.5	6.0		
U282	TO-71	10.0	20.0	10.0	0.97	50.0	50	4.5	0.5	6.0		
U283	TO-71	25.0	20.0	10.0	0.95	50.0	50	4.5	0.5	6.0		
U284	TO-71	25.0	40.0	10.0	0.90	50.0	50	4.5	0.5	6.0		
U285	TO-71	50.0	75.0	10.0	0.85	50.0	50	4.5	0.5	6.0		
2N3921	TO-71	5.0	10.0	-	0.95	250.0	50	2.7	1.0	10.0	General Purpose	
2N3922	TO-71	5.0	25.0	-	0.95	250.0	50	2.7	1.0	10.0		
2N4084	TO-71	15.0	10.0	-	0.95	250.0	50	2.7	1.0	10.0		
2N4085	TO-71	15.0	25.0	-	0.95	250.0	50	2.7	1.0	10.0		
2N5196	TO-71	5.0	5.0	5.0	0.97	15.0	50	4.0	0.7	7.0	Low I _g	
2N5197	TO-71	5.0	10.0	5.0	0.97	15.0	50	4.0	0.7	7.0		
2N5198	TO-71	10.0	20.0	5.0	0.95	15.0	50	4.0	0.7	7.0		
2N5199	TO-71	15.0	40.0	5.0	0.95	15.0	50	4.0	0.7	7.0		
2N5515	TO-71	5.0	5.0	10.0	0.97	100.0	40	4.0	0.5	7.5	90 _{dB} Less Than 1μmho High CMRR g _m = 0.010 μV/HZ At 1 KHz	
2N5516	TO-71	5.0	10.0	10.0	0.97	100.0	40	4.0	0.5	7.5		
2N5517	TO-71	10.0	20.0	10.0	0.95	100.0	40	4.0	0.5	7.5		
2N5518	TO-71	15.0	40.0	10.0	0.95	100.0	40	4.0	0.5	7.5		
2N5519	TO-71	5.0	5.0	10.0	0.97	100.0	40	4.0	0.5	7.5		
2N5520	TO-71	5.0	5.0	10.0	0.97	100.0	40	4.0	0.5	7.5		
2N5521	TO-71	5.0	10.0	10.0	0.97	100.0	40	4.0	0.5	7.5		
2N5522	TO-71	10.0	20.0	10.0	0.95	100.0	40	4.0	0.5	7.5		
2N5523	TO-71	15.0	40.0	10.0	0.95	100.0	40	4.0	0.5	7.5		
2N5529	TO-71	15.0	80.0	10.0	0.90	100.0	40	4.0	0.5	7.5		
2N5545	TO-71	5.0	10.0	5.0	0.97	50.0	50	4.5	0.5	8.0		9 _{dB} Less Than 1500 μmho (V _{GS} = 0)
2N5546	TO-71	10.0	20.0	5.0	0.95	50.0	50	4.5	0.5	8.0		
2N5547	TO-71	15.0	40.0	5.0	0.90	50.0	50	4.5	0.5	8.0		
2N5564	TO-71	5.0	10.0	-	0.95	-	40	3.0	5.0	30.0	High Frequency Low On Resistance	
2N5565	TO-71	25.0	25.0	-	0.90	-	40	3.0	5.0	30.0		
2N5567	TO-71	20.0	50.0	-	0.90	-	40	3.0	5.0	30.0		
2N5902	TO-78	5.0	5.0	2.0	0.97	3.0	40	4.5	0.03	0.5		
2N5903	TO-78	5.0	10.0	2.0	0.97	3.0	40	4.5	0.03	0.5		
2N5904	TO-78	10.0	20.0	2.0	0.95	3.0	40	4.5	0.03	0.5		
2N5905	TO-78	15.0	40.0	2.0	0.95	1.0	40	4.5	0.03	0.5		
2N5906	TO-78	5.0	5.0	0.2	0.97	1.0	40	4.5	0.03	0.5		
2N5907	TO-78	5.0	10.0	0.2	0.97	1.0	40	4.5	0.03	0.5		
2N5908	TO-78	10.0	20.0	0.2	0.95	3.0	40	4.5	0.03	0.5		
2N5909	TO-78	15.0	40.0	0.2	0.95	1.0	40	4.5	0.03	0.5		
2N5911	TO-78	10.0	20.0	20.0	0.95	100.0	25	5.0	7.0	40.0		High Frequency
2N5912	TO-78	15.0	40.0	20.0	0.95	100.0	25	5.0	7.0	40.0		
DU4340	TO-71	-	-	-	-	-	50	3.0	1.2	3.6		Two 2N4340S

MOS FIELD-EFFECT TRANSISTORS

Type	Package	N or P	V _{GS} (th)		I _D (th)		I _Q (th)		BV _{GS}	I _D (OFF)	I _{DSS}	I _{SS}	C _{iss}	C _{out}	Notes
			Max (V)	Typ (V)	Max (μA)	Typ (μA)	Max (μA)	Typ (μA)							
M100	TO-18	N	VP = 5.0	150	100.0	-	-	20	1.0	4.5	1.5	7.5	1.6*	Depletion	
M101	TO-18	N	VP = 8.0	300	100.0	-	-	20	1.0	12.0	-	7.5	1.6*	Depletion	
M103+	TO-72	P	4.2	150	80.0	20.0	100.0	30	0.2	-	0.1	8.0#	4.0#	Enhancement	
M104+	TO-72	P	4.2	1500	600.0	2.0	9.0	30	0.1	-	0.1	1.0#	0.5#	Enhancement	
M106+	TO-89	P	3.7	130	55.0	25.0	110.0	30	0.2	-	0.1	8.0#	4.0#	Common Source, Dual	
M107+	TO-89	P	3.7	130	55.0	25.0	110.0	30	0.2	-	0.1	8.0#	4.0#	Separate Sources, Dual	
M108	TO-99	P	3.0	140	60.0	25.0	100.0	30	0.2	-	0.001	8.0#	4.0#	Separate Sources, Dual	
M113+	TO-72	P	2.5	90	55.0	45.0	130.0	30	0.2	-	0.1	8.0#	4.0#	Enhancement	
M114+	TO-72	P	3.0	200	18.0	100.0	80.0	40	0.2	-	0.1	8.0#	4.0#	Enhancement	
M116+	TO-72	N	2.0	95	55.0	16.0	75.0	30	10.0	-	0.1	5.0#	2.5#	Enhancement	
M117	TO-72	N	2.0	95	55.0	16.0	75.0	30	10.0	-	0.001	5.0#	2.5#	Enhancement	
M119+	TO-72	P	3.8	210	100.0	12.5	62.0	75	0.8	-	0.25	16.0#	8.0#	Enhancement	
M163	TO-72	P	3.2	450	205.0	15.0	34.0	40	0.2	-	0.01	2.9	0.7*	Enhancement	
M184	TO-72	P	3.2	450	205.0	15.0	34.0	30	0.4	-	0.01	2.9	0.7*	Enhancement	
M511+	TO-72	P	3.8	175	85.0	25.0	100.0	30	10.0	-	1.0	6.5#	2.5#	Enhancement	
M511A+	TO-72	P	4.2	300	130.0	11.0	45.0	30	10.0	-	1.0	5.5	2.5#	Enhancement	
M517+	TO-72	P	3.0	140	60.0	25.0	100.0	30	0.3	-	1.5	14.0#	7.0#	Enhancement	
2N3631	TO-18	N	VP = 6.0	100	85.0	-	-	20	0.1	10.0	-	7.5	1.6*	Depletion	
3N183	TO-72	P	3.2	450	205.0	15.0	34.0	40	0.2	-	0.010	2.5	0.7*	Enhancement	
3N184	TO-72	P	3.2	450	205.0	15.0	34.0	30	0.4	-	0.010	2.5	0.7*	Enhancement	
3N167+	TO-72	P	3.8	18	14.5	230.0	850.0	30	0.5	-	0.1	35.0	12.0*	Enhancement	
3N168+	TO-72	P	4.0	28	15.5	113.0	450.0	25	1.0	-	0.5	35.0	12.0*	Enhancement	

* Gate Protected *CRSS #Body Guarded

SILICONIX FET cross-reference guide

Type #	Type #	Type #	Type #
2N2386	E270	2N3824	E114
2N2386A	E270	2N3909	E176
2N2497	E270	2N3909A	E176
2N2498	E270	2N3921	E400
2N2499	E270	2N3922	E401
2N2500	E270	2N3934	E400
2N2606	E176	2N3935	E401
2N2607	E176	2N3954	E400
2N2608	E176	2N3954A	E400
2N2609	E176	2N3955	E401
2N2841	E270	2N3955A	E400
2N2842	E270	2N3956	E402
2N2843	E270	2N3957	E402
2N2844	E270	2N3958	E402
2N3066	E202	2N3966	E304
2N3067	E201	2N3967	E202
2N3068	E201	2N3967A	E202
2N3069	E232	2N3968	E202
2N3070	E230	2N3968A	E202
2N3071	E201	2N3969	E230
2N3084	E202	2N3969A	E230
2N3085	E202	2N3970	E111
2N3086	E202	2N3971	E112
2N3087	E202	2N3972	E113
2N3088	E202	2N3993	E174
2N3088A	E202	2N3993A	E174
2N3089	E202	2N3994	E176
2N3089A	E202	2N3994A	E176
2N3112	E270	2N4082	E400
2N3277	E176	2N4083	E401
2N3278	E176	2N4084	E400
2N3328	E176	2N4085	E401
2N3329	E176	2N4088	E176
2N3330	E176	2N4089	E176
2N3331	E176	2N4090	E176
2N3332	E176	2N4091	E111
2N3365	E202	2N4091A	E111
2N3366	E201	2N4092	E112
2N3367	E201	2N4092A	E112
2N3368	E232	2N4093	E112
2N3369	E230	2N4093A	E112
2N3370	E201	2N4094	E111
2N3376	E176	2N4095	E111
2N3378	E270	2N4117	E201
2N3380	E176	2N4117A	E201
2N3382	E176	2N4118	E201
2N3384	E175	2N4118A	E201
2N3386	E174	2N4119	E201
2N3436	E203	2N4119A	E201
2N3437	E202	2N4139	E305
2N3438	E201	2N4220	E202
2N3452	E202	2N4220A	E202
2N3453	E201	2N4221	E202
2N3454	E201	2N4221A	E202
2N3455	E202	2N4222	E203
2N3456	E201	2N4222A	E203
2N3457	E201	2N4223	E210
2N3458	E232	2N4224	E300
2N3459	E230	2N4302	E202
2N3460	E201	2N4303	E203
2N3465	E202	2N4304	E203
2N3466	E202	2N4338	E201
2N3573	E270	2N4339	E201
2N3574	E270	2N4340	E202
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SILICONIX FET cross-reference guide

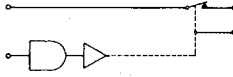
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Siliconix incorporated

DRIVER/GATES

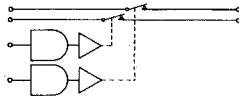
Siliconix drivers and associated FET switches are available as single-package integrated circuits. They are intended for applications where the switched analog signal must be isolated from the driving source and associated power supplies. Designs include monolithic devices with bipolar and Schottky transistors and MOS FETs on a single chip. Multi-chip designs include JFET switches as separate chips. The accompanying circuits display a very wide variety of switch functions.

SPST Gate Output For RF Bypass



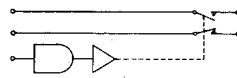
DG171

SPST 2-Channel



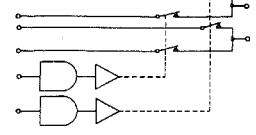
DGM111 141 DG147 181
DG133 110 DG151 182
134 112 152

SPDT 1-Channel



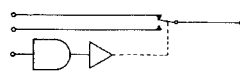
DG143 144 146 DG161 162 DG175 187 188

DPST 2-Channel Differential



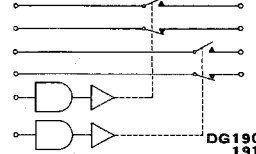
DGM122

PDT 1-Channel



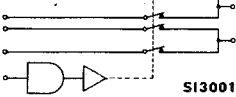
SI3002 SI3002A

2X SPDT + Separate Outputs



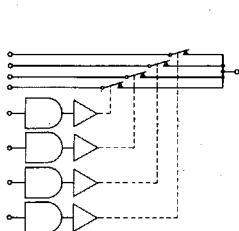
DG190 191

4PST Special Function



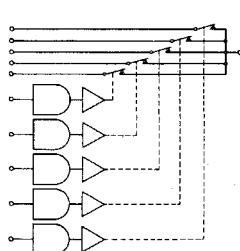
SI3001

SPST 4-Channel



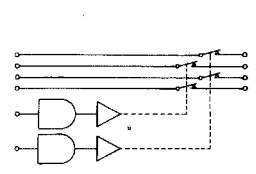
DG172 116

SPST 5-Channel



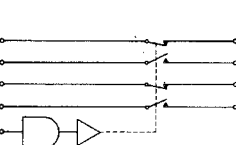
DG123 125

DPST 2-Channel



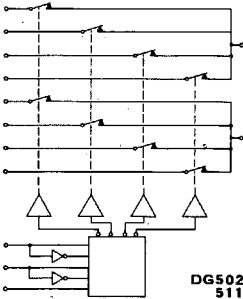
DG126 129 140 DG153 154 184 185

DPDT 1-Channel



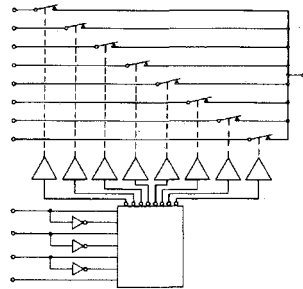
DG139 142 145 DG163 164 169 173

DP4T + Enable



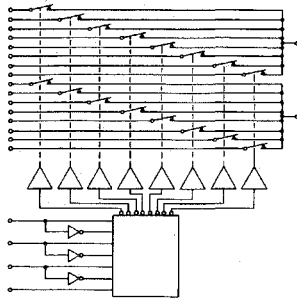
DG502 511

SP8T + Enable



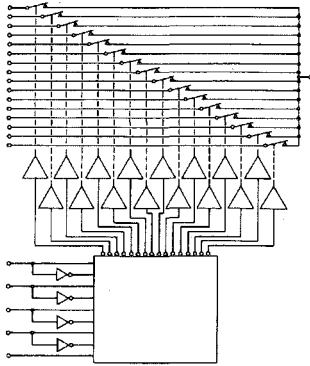
DG501 503 510 513705

DP8T



DG507

SP16T + Enable



DG506

Siliconix incorporated DRIVERS/FET SWITCHES

Type	To	Pkg Sfx	Drivers	Switch Configuration and Control	FET Switch Type	I _{DS} Range vs V _A (Ω)	Per Channel Leakage Analog Voltage Range (±) (nA)	Supply Voltages (Std) (V)	Switch Time t _{ON} t _{OFF} (μs)	Input Logic Level For ON Switch	Input Compatible w/Logic Types	Comments and Alternate Parts	
DG110	A B	L,P L,P	2 2	SPST 2-Chnl	PMOS	100-450 125-500	1 5	10 10	+10,-20,+5,0 0.3 0.5	1.0 2.0	1	DTL,RTL	
*DGM111	A B	L,P K,L	2 2	SPST 2-Chnl	PMOS	100-450 100-450	1 5	10 10	+10,-20,+5 0.3 0.3	1.0 1.0	0	DTL,RTL,(TTL)	Monolithic
DG112	A B	L,P L,P	2 2	SPST 2-Chnl	PMOS	100-450 125-500	1 5	10 10	+10,-20,0 0.3 0.5	1.0 2.0	1	DTL,RTL,(TTL)	
DG116	A B	L,P L,P	4 1	4-Chnl Multiplexer	PMOS	100-450 125-500	1 5	10 10	+10,-20,0 0.3 0.5	1.0 2.0	1	DTL,RTL,(TTL)	See DG172
(DG118)	A B	L,P L,P	4 1	4-Chnl Multiplexer	PMOS	100-450 125-500	1 5	10 10	+10,-20,+5 0.3 0.5	1.0 2.0	0	DTL,RTL,(TTL)	Obsolete See DG172
DG120	A B	L,P L,P	6 2	3-Chnl Double-Pole Mplx	PMOS	100-450 125-500	1 5	10 10	+10,-20,0 0.3 0.5	2.0 2.0	1	DTL,RTL,(TTL)	See DG502,511
DG121	A B	L,P L,P	6 2	3-Chnl Double-Pole Mplx	PMOS	100-450 125-500	1 5	10 10	+10,-20,+5 0.3 0.5	2.0 2.0	0	DTL,RTL,(TTL)	See DG502, 511
*DGM122	A B	L,P L,P	4 2	2-Chnl Double-Pole Mplx	PMOS	100-450 125-500	1 5	10 10	+10,-20,+5,0 0.3 0.5	2.0 2.0	1	DTL,RTL,(TTL)	Monolithic
DG123	A B	L,P L,P	5 1	5-Chnl Separate Control	PMOS	100-450 125-500	1 5	10 10	+10,-20,0 0.3 0.5	1.0 2.0	1	DTL,RTL,(TTL)	See DG501, 503 DG510, S13705
DG125	A B	L,P L,P	5 1	5-Chnl Multiplexer	PMOS	100-450 125-500	1 5	10 10	+10,-20,+5 0.3 0.5	1.0 2.0	0	TTL,DTL,RTL	See DG501, 503 DG510, S13705
DG126	A B	L,P L,P	4 4	DPST 2-Chnl	N-JFET	80 80	1 5	10 8	+12,-18,0 0.6 1.0	1.6 2.0	1	TTL,DTL,RTL	See DG154, 185
DG129	A B	L,P L,P	4 4	DPST 2-Chnl	N-JFET	30 35	1 5	10 8	+12,-18,0 0.6 1.0	1.6 2.0	1	TTL,DTL,RTL	See DG153, 184
DG133	A B	L,P L,P	2 2	SPST 2-Chnl	N-JFET	30 35	1 5	10 8	+12,-18,0 0.6 1.0	1.6 2.0	1	TTL,DTL,RTL	See DG501
DG134	A B	L,P L,P	2 2	SPST 2-Chnl	N-JFET	80 80	1 5	10 8	+12,-18,0 0.6 1.0	1.6 2.0	1	TTL,DTL,RTL	See DG152
DG139	A B	L,P L,P	4 4	DPDT	N-JFET	30 35	1 5	10 8	+12,-18,0 0.8 1.0	1.6 2.0		See Data Sheet	See DG163
DG140	A B	L L	4 4	DPST 2-Chnl	N-JFET	10 15	10 15	10 8	+12,-18,0 1.0 1.5	2.5 2.5	1	TTL,DTL,RTL	See DG153, 184
DG141	A B	L,P L,P	2 2	SPST 2-Chnl	N-JFET	10 15	10 15	10 8	+12,-18,0 1.0 1.5	2.5 2.5	1	TTL,DTL,RTL	See DG151
DG142	A B	L,P L,P	4 4	DPDT	N-JFET	80 80	1 5	10 8	+12,-18,0 0.8 1.0	1.6 2.0		See Data Sheet	See DG164
DG143	A B	L,P L,P	2 2	SPDT	N-JFET	80 80	1 5	10 8	+12,-18,0 0.8 1.0	1.6 2.0		See Data Sheet	See DG162
DG144	A B	L,P L,P	2 2	SPDT	N-JFET	30 35	1 5	10 8	+12,-18,0 0.8 1.0	1.6 2.0		See Data Sheet	See DG162
DG145	A B	L L	4 4	DPDT	N-JFET	10 15	10 15	8	+12,-18,0 1.0 1.5	2.5 2.5		See Data Sheet	See DG163
DG146	A B	L,P L,P	2 2	SPDT	N-JFET	10 15	10 15	8	+12,-18,0 1.0 1.5	2.5 2.5		See Data Sheet	See DG161
(DG147)	A	A,L	2 2	SPST 2-Chnl	PMOS	100-450	1	10	+10,-20,+5,0 0.25 0.25	0.25 0.25	0	TTL,DTL,RTL	Obsolete See DGM111
DG151 *	A B	L,P L,P	2 2	SPST 2-Chnl	N-JFET	15 20	10 15	7.5 5.5	+15,-15,0 1.0 1.5	2.5 2.5	1	TTL,DTL,RTL	
DG152	A B	L,P L,P	2 2	SPST 2-Chnl	N-JFET	50 100	2 5	7.5 5.5	+15,-15,0 0.6 1.0	1.5 2.0	1	TTL,DTL,RTL	
DG153	A B	L L	4 4	DPST 2-Chnl	N-JFET	15 20	10 15	7.5 5.5	+15,-15,0 1.0 1.5	2.5 2.5	1	TTL,DTL,RTL	
DG154	A B	L,P L,P	4 4	DPST 2-Chnl	N-JFET	50 100	2 5	7.5 5.5	+15,-15,0 0.6 1.0	1.5 2.0	1	TTL,DTL,RTL	
DG161	A B	L,P L,P	2 2	SPDT	N-JFET	15 20	10 15	7.5 5.5	+15,-15,0 1.0 1.5	2.5 2.5		See Data Sheet	
DG162	A B	L,P L,P	2 2	SPDT	N-JFET	50 100	2 5	7.5 5.5	+15,-15,0 0.8 1.0	1.5 2.0		See Data Sheet	
DG163	A B	L L	4 4	DPDT	N-JFET	15 20	10 15	7.5 5.5	+15,-15,0 1.0 1.5	2.5 2.5		See Data Sheet	
DG164	A B	L,P L,P	4 4	DPDT	N-JFET	50 100	2 5	7.5 5.5	+15,-15,0 0.8 1.0	1.5 2.0		See Data Sheet	
(DG169)	A	A	4 2	DPDT	PMOS	200-500	1	10	+10,-20,0 1.0 1.5	1.5	0	DTL,RTL,(TTL)	Obsolete See DG173, 164
*DG171	A B	A A	1 1	SPST Gate Output For RF Bypass	PMOS	40-100 40-125	2 5	10 10	+10,-20,+5,0 0.2 0.2	0.7 0.7	1	TTL,DTL,RTL	Monolithic
*DG172	A B	L,P L,K	4 1	4-Chnl Multiplexer	PMOS	150-450 150-500	1 5	10 10	+10,-20,+5,0 0.3 0.5	0.75 1.0	0	TTL,DTL,RTL	Monolithic
*DG173	A B	L,P L,K	4 2	DPDT 2-Input "OR" Control	PMOS	200-450 200-450	1 5	10 10	+10,-20,+5,0 0.3 1.5	0.75 1.0		TTL,DTL,RTL	
*DG175	A B	A A	2 2	SPDT	PMOS	75-200 75-250	1 5	10 10	+10,-20,+5,0 0.2 0.2	0.4 0.4		TTL,DTL,RTL	Monolithic

TEMP. SUFFIXES
 A -55°C to +125°C
 B -20°C to +85°C
 C 0°C to +70°C

PACKAGE SUFFIXES
 A Modified TO5
 K TO116 Ceramic DIP or CardIP Type
 L TO88 8 pin 1/2 inch Flat Pkg. 14 Lead
 P TO116 Metal Ceramic DIP
 R 28 Lead Metal Ceramic DIP

(* Asterisk indicates improved device - Best for new designs.

Type	T _O	Pkg Sfx	Channels	Switch Configuration and Control	FET Switch Type	I _{DS} Range vs V _A (μA)	Per Channel Leakage Analog Voltage Range (±) (nA)	Supply Voltages (Std) (V)	Switch Time t _{ON} t _{OFF} (μs)	Input Logic Level For ON Switch	Input Compatible w/Logic Types	Comments and Alternate Parts				
*DG181	A	A	2	2	SPST 2-Chnl	N-JFET	30	1	10	+10,-20,+5,0	0.15	0.08	0	TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	A				50	5	10	7.5	+15,-15,+5,0	TYP	TYP				
								10	7.5	+10,-20,+5,0	TYP	TYP				
*DG182	A	A	2	2	SPST 2-Chnl	N-JFET	75	1	10	+10,-20,+5,0	0.15	0.08	0	TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	A				100	5	10	10	+15,-15,+5,0	TYP	TYP				
								10	10	+10,-20,+5,0	0.15	0.08				
*DG184	A	P	4	4	DPST 2-Chnl	N-JFET	30	1	10	+10,-20,+5,0	0.15	0.08	1	TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	P				50	5	10	7.5	+15,-15,+5,0	TYP	TYP				
								10	7.5	+10,-20,+5,0	0.15	0.08				
*DG185	A	P	4	4	DPST 2-Chnl	N-JFET	75	1	10	+10,-20,+5,0	0.15	0.08	1	TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	P				100	5	10	10	+15,-15,+5,0	TYP	TYP				
								10	10	+10,-20,+5,0	0.15	0.08				
*DG187	A	A	2	2	SPDT	N-JFET	30	1	10	+10,-20,+5,0	0.15	0.08		TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	A				50	5	10	7.5	+15,-15,+5,0	TYP	TYP				
								10	7.5	+10,-20,+5,0	0.15	0.08				
*DG188	A	A	2	2	SPDT	N-JFET	75	1	10	+10,-20,+5,0	0.15	0.08		TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	A				100	5	10	10	+15,-15,+5,0	TYP	TYP				
								10	10	+10,-20,+5,0	0.15	0.08				
*DG190	A	P	4	4	SPDT 2-Chnl	N-JFET	30	1	10	+10,-20,+5,0	0.15	0.08		TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	P				50	5	10	7.5	+15,-15,+5,0	TYP	TYP				
								10	7.5	+10,-20,+5,0	0.15	0.08				
*DG191	A	P	4	4	SPDT 2-Chnl	N-JFET	75	1	10	+10,-20,+5,0	0.15	0.08		TTL,DTL,RTL, Low Power	Fast Break-Before-Make Constant "ON" Resistance	
	B	P				100	5	10	10	+15,-15,+5,0	TYP	TYP				
								10	10	+10,-20,+5,0	0.15	0.08				
*DG501	B	K	8	1	8-Chnl Mplx Binary Decode + Enable	PMOS	150-250	3	5	+5,-22	1.0	0.6	1	TTL,DTL,RTL	Break-Before-Make-Operation 0.25 μs Typical	
*DG502	B	K	8	2	4-Chnl Double-Pole Mplx Binary Decode + Enable	PMOS	150-250	3	5	+5,-22	1.0	0.6	1	TTL,DTL,RTL	Break-Before-Make-Operation 0.25 μs Typical	
*DG503	B	K	8	1	8-Chnl Mplx Binary Decode + Enable	PMOS	125-600	3	10	+10,-20	1.0	0.6	1	MOS,(TTL,DTL,RTL: See DG501)	Break-Before-Make-Operation 0.25 μs Typical	
*DG506	A	R	16	1	16-Chnl Mplx Binary Decode + Enable	CMOS	500	1	10	+15,-15,+5,0	T (Switch)	1.0 μs	TYP	1	DTL,RTL,(TTL)	Complementary MOS (Low Pwr.)
*DG507	A	R	16	2	8-Chnl Double-Pole Mplx Binary Decode + Enable	CMOS	500	1	10	+15,-15,+5,0	T (Switch)	1.0 μs	TYP	1	DTL,RTL,(TTL)	Complementary MOS (Low Pwr.)
*DG510	A	K	8	1	8-Chnl Mplx Binary Decode + Enable	PMOS	200-500	3	10	+10,-20,0	2.5	1.2	1	TTL,DTL,RTL	Break-Before-Make-Operation	
*DG511	A	K	8	2	4-Chnl Double-Pole Mplx Binary Decode + Enable	PMOS	200-500	3	10	+10,-20,0	2.5	1.2	1	TTL,DTL,RTL	Break-Before-Make-Operation	
SI3001	A	A	4	2	DPST 2-Chnl Comm. Cntl.	PMOS	500	1	10	+10,-20,0	0.3	0.6	1	TTL,DTL,RTL	See DG185	
	C	A				500	5	10		0.3	0.6					
SI3002	A	A	2	1	SPDT	PMOS	100-400	1	10	+10,-20,0	1.0	1.5		TTL,DTL,RTL	Order SI3002 Order SI3002BK Order SI3002C	
	B	K					5									
	C	A					5									
SI3002A	A	A			(Same as SI3002 Except Different Pin Assign.)		1								Order SI3002A	
	C	A					5								Order SI3002AC	
SI3705	142	K	8	1	(-55°C to +85°C)	PMOS	250	3	5	+5,-22	T (Switch)		1	MOS,(TTL,DTL,RTL: See DG501)	Break-Before-Make Switching	
SI3705	143	K			(-55°C to +85°C)		250	3		+5,-22	1.0 μs	TYP				
SI3705	192	K			(0°C to +70°C)		250	3	5	+5,-22						
SI3705	193	K			(0°C to +70°C)		250	3		+5,-22						
					SP8T and all OFF Binary Decode + Enable					*0 to +5V Analog Range						

TEMP. SUFFIXES

A -55°C to +125°C
 B -20°C to +85°C
 C 0°C to +70°C

PACKAGE SUFFIXES

A Modified TOS
 K TO116 Ceramic DIP or CerDIP Type
 L TO88 X by X Inch Flat Pkg. 14 Lead
 P TO116 Metal Ceramic DIP
 R 28 Lead Metal Ceramic DIP

(*) Asterisk indicates improved device - Best for new designs.

Siliconix incorporated

INTEGRATED CIRCUITS

Siliconix P-channel MOS FET switches are available for applications such as sequential switching (commutation), signal processing, modulation, and A-to-D converters. The MOS FET is normally-OFF, and performs an SPST function. They are also available with Siliconix drivers in a single package

MULTIPLE CHANNEL PMOS SWITCHES

Type	Operating Temperature	Fig Six See Code	S S S S	C E N E S S	R A T I O N	U R G E N T	C I R C U I T	Switch Type	Pull Up On Gets	I _{DS} Max (I _t at 25°C)		BV _{DSS} Min (V)	I _{S(OFF)} Max (nA)	I _{SS} Max (nA)	V _{GS(th)} Min (V)	C _{iss} Max (pF)	C _{oss} Max (pF)	C _{ad} Max (pF)	Comment	
										Best Condition	Worst Condition									
G114	A B	L L	5	1	5	5	SPST	No		1000 1000	5000 5000	-30 -25	-0.075 -0.075	-0.075 -0.075	-2 -2	-6 -6	0.5 (0.5 Typ)	0.2 (0.2 Typ)	3.5 (3.5 Typ)	Very Low Leakage
G115	A B	K K	6	1	6	6	SP8T	Yes		100 125	450 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	16-Pin CerDIP
G116	A B	L,P L,P	5	1	5	5	SP8T	Yes		100 125	450 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	
G117	A B	L,P L,P	5	1	6	(SPST + SPST)		Yes		100 X 2 125 X 2	450 X 2 500 X 2	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	Commutator +1 Channel Sub Commutator
G118	A B	L,P L,P	6	1	6	6	SP6T	No		100 125	450 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	
G119	A B	L,P L,P	6	2	3	3	DP3T	Yes		100 125	450 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	3-Channel Differential
G122	A B	L L	4	2	2	2	DPDT	Yes		125 125	600 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	2-Channel Differential
G123	A B	L L,K	4	2	4	(2 X SPDT)		Yes		125 125	600 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	
G124	A B	L L	4	1	4	4	SP4T	Yes		125 125	600 500	-30 -25	-0.5 -5.0	-0.5 -5.0	-2 -2	-6 -6	3.0 (3.0 Typ)	0.4 (0.4 Typ)	3.5 (3.5 Typ)	
G150	A D	A A	1	1	1	1	SPST	Yes		100 150	22 22		1.0 5.0	10 10			0.4 Typ	6.0 Typ	See new CMOS Products	

Operating Temperature Suffix Code:
"A" -85°C to +125°C
"B" -25°C to +85°C

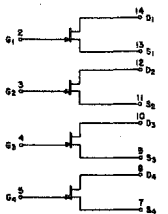
Package Suffix Code:
"K" TO-116 Ceramic Dip (14 LEAD OR 16 LEAD)
"L" TO-86
"P" TO-116 Metal Dip

Siliconix N- and P-channel junction FET switches are intended for applications such as commutators and choppers. JFETs are normally-ON. They are also available with Siliconix drivers in a single package

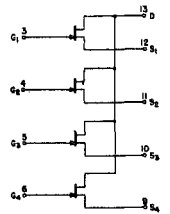
MULTIPLE CHANNEL JFET SWITCHES

Type	Operating Temperature See Code	Package Suffix See Code	FET Type (N or P)	Source	Drains	Gate	Circuit Function	Switch Type	r _{DS} Max (Ω)	V _P Max (V)	BV _{DSS} Min (V)	I _{S(OFF)} Max (nA)	I _{SS} Max (nA)	C _{iss} + C _{oss} Max (pF)	C _{ad} Max (pF)
G125	A	F	N	4	4	4	4XSPST		500	-6	-40	0.05	-0.1	10	2
G126	A	F	N	4	4	4	4XSPST		250	-10	-40	0.05	-0.1	10	2
G127	A	F	N	4	4	4	4XSPST		90	-6	-40	0.1	-0.2	40	7
G128	A	F	N	4	4	4	4XSPST		45	-10	-40	0.1	-0.2	40	7
G129	A	F	N	4	1	4	SP4T		500	-6	-40	0.05	-0.1	10	2
G130	A	F	N	4	1	4	SP4T		250	-10	-40	0.05	-0.1	10	2
G131	A	F	N	4	1	4	SP4T		90	-5	-40	0.1	-0.2	40	7
G132	A	F	N	4	1	4	SP4T		45	-10	-40	0.1	-0.2	40	7
G134	A	F	P	4	4	4	4XSPST		1000	8	30	-0.5	3.0	8	2
G135	A	F	P	4	4	4	4XSPST		300	8	30	-2.5	15.0	80	5

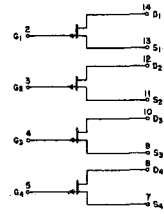
Operating Temperature Suffix Code. "A" -85°C TO +125°C Package Suffix Code. "F" TO-84 (1/8" BY 1/4" Flat PAC)



G125F, 26F, 27F & 28F



G129F, 30F, 31F & 32F

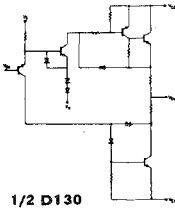


G134F, 35F

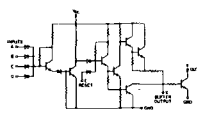
DRIVERS FOR FET SWITCHES, LAMPS & RELAYS

Output Characteristics												
Type	To	Pkg Sfx	I N P U T S	O U T P U T S	Function And Use	"ON" Level V _{OUT(ON)} -V _{EE} Or V _{OUT(ON)} -GND At Rated Current(s)	"OFF" Level V _{OUT(OFF)} At Rated Current Or I _{OUT(OFF)} At Rated Voltage	Pull-Up Current (mA)	Input Logic Level For "ON" Output	Input Compatible W/Logic Types	Standard Supply Voltage	Switch Time t _{ON} t _{OFF} (μs)
D111	A	L	2	2	Dual MOSFET-Driver	0.8 V @ +1 mA	-0.1 V* @ -10 μA	0.4-1.8	1	DTL,RTL	+10,-20,+5,0	0.25 1.5
D112	A	L	2	2	Dual MOSFET-Driver	0.8 V @ +1 mA	-0.1 V* @ -10 μA	0.4-1.8	0	DTL,RTL,(TTL)	+10,-20,+5	0.25 1.5
D113	A	L	2	2	Dual MOSFET-Driver	0.8 V @ +1 mA	-0.0 V* @ -10 μA	0.4-1.8	1	DTL,RTL,(TTL)	+10,-20,0	0.25 1.5
D119	A	L	2	2	Dual MOSFET-Driver	0.8 V @ +1 mA	-0.1 V* @ -10 μA	3.0-5.7	1	DTL,RTL	+10,-20,+5,0	0.25 1.0
D120	A	L	2	2	Dual MOSFET-Driver	0.8 V @ +1 mA	-0.1 V* @ -10 μA	3.0-5.7	0	DTL,RTL,(TTL)	+10,-20,+5	0.25 0.6
D121	A	L	2	2	Dual MOSFET-Driver	0.8 V @ +1 mA	-0.1 V* @ -10 μA	3.0-5.7	1	DTL,RTL,(TTL)	+10,-20,0	0.25 0.6
D123	A	LP	6	6	6 Separate MOSFET-Drivers	0.3 V @ +1 mA	0.1 μA @ +10 V	None	1	DTL,RTL,(TTL)	-20,0	0.25 0.6
	B	LP				0.3 V @ +1 mA 0.8 V @ +4 mA	0.1 μA @ +10 V					
D125	A	LP	6	6	6 Separate MOSFET-Drivers	0.3 V @ +1 mA 0.8 V @ +4 mA	0.1 μA @ +10 V	None	0	DTL,RTL,(TTL)	-20,+5	0.25 0.6
	B	L,K				0.3 V @ +1 mA 0.4 V @ +2.5 mA 0.8 V @ +5 mA	0.1 μA @ +10 V					
D129	A	LP	(7)	4	4-Channel (BV = 50 V) MOSFET Driver W/Decode (BV = 40 V)	0.2 V @ +1 mA 0.7 V @ +10 mA	0.1 μA @ +10 V	None	1	TTL,DTL,RTL	-30,+5,0	0.25 0.8
	B	L,K				1.0 V 1.0 V	0.2 μA @ +10 V					
D130	A	AL	2	2	Dual High-Speed MOSFET-Driver	1.0 V	-2.0 V	Active	0	TTL,DTL,RTL	+10,-20,0	0.2 0.2
	B	AL				1.0 V	-2.0 V					
D132	A	LP	(7)	4	4-Channel 50 V Driver With Decode	0.2 V @ +1 mA 0.7 V @ +10 mA	0.1 μA @ +40 V	None	1	TTL,DTL,RTL	+5,0	0.25 1.5
SI2001	A	A	4+	1+	Single Lamp Relay Driver W/Latch	0.4 V @ +250 mA	5 μA @ +40 V	None	1	TTL,DTL,RTL	+5,0	
	C	A				0.6 V @ +250 mA	10 μA @ +40 V					
SI2200	A	AL	4+	1+	4-Input Lamp Relay Driver W/Latch	0.6 V @ +500 mA	5 μA @ +50 V	None	1	TTL,DTL,RTL	+5,0	
SI4001	A	L	8+	2+	Dual 4-Input Lamp Relay Driver	0.4 V @ +250 mA	5 μA @ +40 V	None	1	TTL,DTL,RTL	+5,0	
	C	L				0.6 V @ +250 mA	10 μA @ +40 V					
SI4002	A	LP	6+	2+	Dual 3-Input Lamp Relay Driver W/Latch	0.4 V @ +250 mA	5 μA @ +40 V	None	1	TTL,DTL,RTL	+5,0	
	C	P				0.6 V @ +250 mA	10 μA @ +40 V					

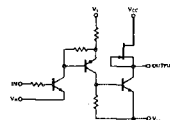
*V_{OUT(OFF)} Relative To V_{CC} Supply



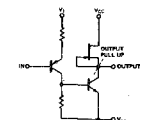
SI2001
1/2 SI4001 (Without Buffer Out)
1/2 SI4002 (3 Inputs)
SI2200



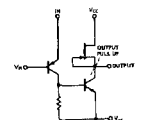
1/2 D111
1/2 D119



1/2 D112
1/2 D120
1/6 D125
(Without Pull up)



1/2 D113
1/2 D121
1/6 D123
(Without Pull up)

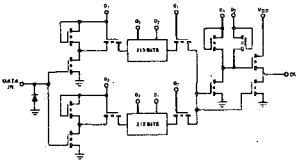


NEW PMOS/LSI PRODUCTS

SM112 426 -BIT SHIFT REGISTER

A high-speed 426-bit dynamic shift register which employs register duplexing (see circuit diagram) and a two-phase clock to achieve maximum operating frequency per unit power.

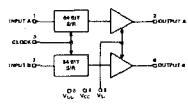
- Low Power Dissipation—80 μW/bit at 1.0 MHz Data Rate
- Low Interlock Capacitance Reduces Output Noise
- Easy Connection to Standard TTL
- Inputs Zener-Protected Against Static Charge
- Monolithic PMOS Structure—Available In Chip Form



SI2064 SHIFT REGISTER

A dual 64-bit MOS shift register, with clock and data inputs directly compatible with TTL/DTL logic arrays. Applications include serial computing functions and radar signal processing. Single clock input in each register may be stopped at either "0" or "1" level without loss of stored data.

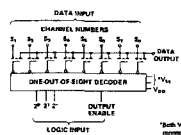
- Low Clock Input Capacitance, 5 pF Typical
- 0.8 to 3.5 Volt TTL Signal Level
- DC to 1 MHz Operation
- Power Consumption 13 mA at 1 MHz, With +5 and -12 Volt Supplies



SI3705 8-CHANNEL SWITCH

A monolithic PMOS multiplexer including a one-out-of-eight decoder on the chip. Logic inputs are directly TTL-compatible, and output enable control is provided. Applications include A/D converters, data transmission and instrumentation signal routing.

- ±5 V Analog Signal
- Input Gate Protection
- +0.4 Noise Immunity
- 10 nA Leakage Current



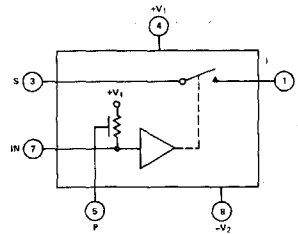
*Both V_{DD} lines are internally connected unless one or both may be tied.

Integrated circuits employing complementary MOS (CMOS) technology incorporate both N- and P-channel devices on a common substrate. Advantages of CMOS over conventional MOS circuits include near-zero quiescent power dissipation and nearly-constant analog switch ON resistance.

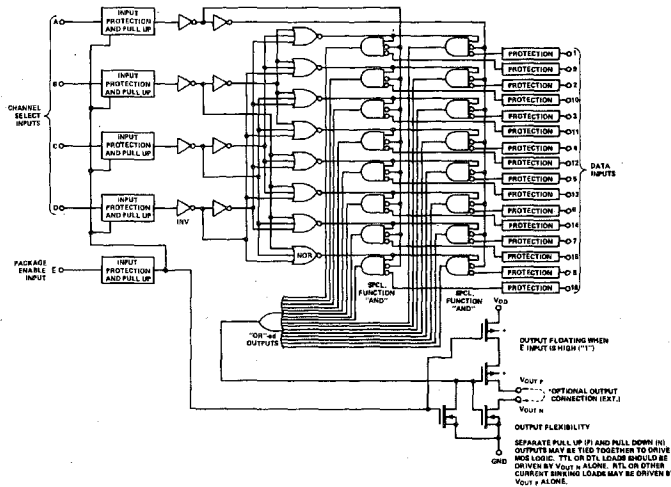
G150AA/DA SWITCH

A CMOS analog switch with near-constant ON resistance. An inverter is included to provide opposite polarity control signals to parallel N- and P-channel switches. Standby power to 1 μ W. Chip also has an input pull-up resistor to act as load for the driving circuitry, and Zener diode clamp protection on all inputs.

- Analog Signal Range Equals \pm Supply Voltage
- Switches Up To 20 Peak-to-Peak Analog Signal
- 50 to 80 ns Switching Time
- $\Delta R_{ON} < \pm 20\%$ Over Full Analog Signal Range



SWITCH STATE IS FOR INPUT - LOW



DM110 DIGITAL MULTIPLEXER

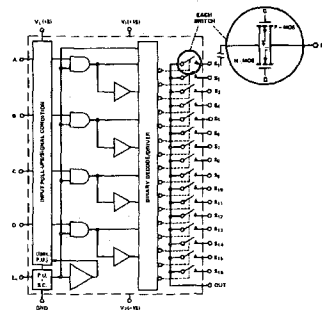
A 16-channel digital multiplexer featuring a "floating" output when the package is inhibited (\bar{E} high) so that multiple outputs may be connected to build digital multiplexers for as many channels as desired. Chip contains protection and pull-up circuits for decode and enable inputs, four-line binary to 1-out-of-16 decode logic, 75 volt over-voltage protection for data inputs, and an inverter buffer.

- Low Power Consumption, 100 mW Max ON, 10 mW Max INHIBIT
- Low Input Capacitance, 5 pF (Data Inputs), 10 pF (Decode Inputs)
- Output Capable of Driving Two TTL Inputs
- Separate Pull-up and Pull-down Output Terminals (Can Be Tied Together) Permit Direct Connection to Most Logic Types

DG506A/B ANALOG MULTIPLEXER

A monolithic circuit which includes 16 CMOS switches on a common substrate, binary decode (with enable) and driver for each channel, and +5 volt pull-ups for TTL compatibility.

- ± 10 Volt Analog Signal Range, ± 15 Volt Supply
- Decode and Enable Inputs Can Be Driven By TTL Gate
- Low ΔR_{ON} (20% Typical) Over Full Analog Signal Range
- Low Standby Power (10 mW Typical)—Decode Pull-ups Disabled By Low Enable



Siliconix incorporated

CURRENT LIMITING DIODES

The field-effect current limiter diode behaves as a constant-current d-c source in parallel with a very high-value resistance. The current limiters are intended for biasing, current limiting, nonlinear load resistors, and timing/switching circuit applications. For proper current limiting, the operating V_{DS} must fall between V_L and BV_{DGS} .

Type	Package	Channel	BV_{DGS}		V_p		TYPICAL r_{DS} AT $V_p =$		
			(Max)	(V)	Min	Max	(V)	0Ω	$0.8V_p \Omega$
VCR2N	TO-18	N	-15	3.5	7.0	40	300	>50	
VCR3P	TO-72	P	+15	3.5	7.0	120	500	>50	
VCR4N	TO-18	N	-15	3.5	7.0	400	3000	>50	
VCR5P	TO-72	P	+15	3.5	7.0	600	4500	>50	
VCR6P	TO-18	P	+15	2.0	4.0	650	4200	>50	
VCR7N	TO-72	N	-15	2.5	5.0	6000	42000	>50	
VCR10N	TO-72	N	-25	8.0	12.0	150		>50	
VCR11N	SI-71	N	-25	8.0	12.0	5% Max	r_{DS} Match		200 Ω
VCR12N	TO-84	N	-25	8.0	12.0	10% Max	to 2 K Ω		
VCR13N	TO-84	N	-25	8.0	12.0	5% Max			

VOLTAGE-CONTROLLED RESISTORS

The drain-to-source resistance of the VCR FET may be increased from a low value [$R_{DS(ON)}$] to near infinity by increasing the gate-source voltage from 0 to beyond V_p . VCRs are available in N- and P-channel singles (indicated by suffix letter) and in N-channel matched pairs and quads. Applications include AGC, analog multipliers, oscillators, modulators, and R-C filter networks.

Type	Package	$10 \pm 20\%$ (μA)	Z_p Min (M Ω)	Z_r Min (M Ω)	V_L Max (V)	Temperature Coefficient
CL022	DO-7	220	4.5	0.8	2.0	± 0.1
CL024	DO-7	240	3.8	0.5	2.0	± 0.1
CL027	DO-7	270	3.5	0.35	2.0	± 0.1
CL030	DO-7	300	3.3	0.31	2.0	± 0.1
CL033	DO-7	330	3.0	0.28	2.0	± 0.1
CL039	DO-7	390	2.2	0.22	2.0	± 0.1
CL043	DO-7	430	1.9	0.17	2.0	± 0.1
CL047	DO-7	470	1.5	0.15	2.0	± 0.1
CL1020	TO-18	1000	1.0	0.12	1.8	
CL1520	TO-18	1500	0.65	0.08	2.1	
CL2210	TO-18	220	6.0	1.0	1.0	
CL2220	TO-18	2200	0.5	0.05	2.5	
CL3310	TO-18	330	4.0	0.6	1.1	
CL3320	TO-18	3300	0.35	0.025	3.0	
CL4710	TO-18	470	2.5	0.4	1.3	
CL4720	TO-18	4700	0.25	0.015	3.5	
CL6810	TO-18	680	1.4	0.25	1.5	

BINARY VARACTORS

In reverse bias operation, the binary varactor displays two distinct constant capacitance values separated by a transition region in which the capacitance is a steep inverse function of the bias voltage. Negligible drive power is required to change states. Capacitance ratios are typically 9-to-1 over a 20 volt reverse voltage range. The six basic devices that make up the binary varactor family have typical low state capacitances that range from 0.6 pF to 34 pF. An assortment of package styles are available.

Applications include digital frequency tuning, VCOs, phase shifting, FM modulators, and discriminators.

PULSE SNAP DIODES

The PSD is a charge-controlled switch suitable for many high speed, fast rise- and fall-time pulse applications. Simple circuits allow the construction of low repetition-rate pulse generators with subnanosecond rise/fall times and built-in delay and width control. Sine wave-to-square wave convertors for frequencies beyond 100 MHz are possible. Complete application notes are available.

The PSD family contains devices with transition times as low as 70 ps. Breakdown voltages extend to better than 100 volts. A wide assortment of package configurations are available.

BI-DIRECTIONAL CURRENT LIMITERS

The bi-directional current limiters are two-lead devices providing a constant current for either polarity. They are ideally-suited for reducing shock hazards in medical equipment and protecting the inputs of delicate test equipment. Current limiting can be maintained up to ± 400 volts. Current ranges are ± 1 and $\pm 10 \mu A$; other ranges are available upon request.

SNAP VARACTOR DIODES

A line of frequency multiplier snap varactor diodes for high power microwave generation in the 0.5 GHz to 18 GHz range are available. Typical power outputs range from 10 watt output at 2.0 GHz (SV220, X5) to 2.5 watt output at 6.0 GHz (SV240, X3). These devices have tightly controlled parameters. All specifications are 100% guaranteed and test conditions are clearly defined. Case styles include single and double stud, large and small thread, and cartridge-type ceramic packages.

HIGH SPEED RECTIFIERS

The 1 amp SR101 device is now available with reverse recovery times of less than 10 ns. Suitable for high speed convertors and switching regulators, these devices have high efficiency due to low forward voltage drops. The forward current at 0.5 volts is typically 75 mA on the SR101. Reverse breakdown voltages to 100 volts and forward currents to better than 10 amps are available upon request.