TYPE	MATERIAL	POLARITY	REPLACEMENT	PAGE NUMBER	USE	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
						P_D @ 25°C	Ref Point	T_J °C	V_{CB} (volts)	V_{CE-} (volts)	Subscript	h_{FE} @ I_C (min)	(max)	Units	$V_{CE(SAT)}$ @ I_C (volts)	Units	h_{f-}	Subscript	f_- Units	Subscript
2N3766	S	N		7-142	LPA	20W	C	175	80	60	O	40	160	0.5A	2.5	1.0A	40	E	15M	T
2N3767	S	N		7-142	LPA	20W	C	175	100	80	O	40	160	0.5A	2.5	1.0A	40	E	15M	T
2N3770	G	P			RFA	50M	A	100	10	6.0	O	10	200	1.0M			10	E	100M	T
2N3771	S	N			LPA	150W	C	200	50	40	O	15	60	15A	2.0	15A	40	E	0.2M	T
2N3772	S	N	2N3715	7-125	LPA	150W	C	200	100	60	O	15	60	10A	1.4	10A	40	E	0.2M	T
2N3773	S	N			LPA	150W	C	200	160	140	O	15	60	8.0A	1.4	8.0A	40	E	0.2M	T
2N3774	S	P			PMS	5.0W	C	200	40	40	O	20	60	0.2A	0.2	0.2A			1.0M	T
2N3775	S	P			PMS	5.0W	C	200	60	60	O	20	60	0.2A	0.2	0.2A			1.0M	T
2N3776	S	P			PMS	5.0W	C	200	80	80	O	20	60	0.2A	0.2	0.2A			1.0M	T
2N3777	S	P			PMS	5.0W	C	200	100	100	O	20	60	0.2A	0.2	0.2A			1.0M	T
2N3778	S	P			PMS	5.0W	C	200	40	40	O	10	40	0.2A	0.2	0.2A			1.0M	T
2N3779	S	P			PMS	5.0W	C	200	60	60	O	10	40	0.2A	0.2	0.2A			1.0M	T
2N3780	S	P			PMS	5.0W	C	200	80	80	O	10	40	0.2A	0.2	0.2A			1.0M	T
2N3781	S	P			PMS	5.0W	C	200	100	100	O	10	40	0.2A	0.2	0.2A			1.0M	T
2N3782	S	P			PMS	5.0W	C	200	40	40	O	10	60	1.0A	0.75	1.0A			1.0M	T
2N3783	G	P		9-84	RFA	0.15W	A	100	30	20	O	20	200	3.0M	0.25	5.0M	20	E	0.8G	T
2N3784	G	P		9-84	RFA	0.15W	A	100	30	20	O	20	200	3.0M	0.25	5.0M	20	E	0.7G	T
2N3785	G	P		9-84	RFA	0.15W	A	100	15	12	O	15	200	3.0M	0.35	5.0M	15	E	0.7G	T
2N3788	S	N			LPA	100W	C	200	400	325	O	20	180	0.50A					50K	E
2N3789	S	P		7-147	LPA	150W	C	200	60	60	O	25	90	1.0A	1.0	5.0A	25	E	30K	E
2N3790	S	P		7-147	LPA	150W	C	200	60	80	O	25	90	1.0A	1.0	5.0A	25	E	30K	E
2N3791	S	P		7-147	LPA	150W	C	200	60	60	O	50	180	1.0A	1.0	5.0A	25	E	30K	E
2N3792	S	P		7-147	LPA	150W	C	200	80	80	O	50	180	1.0A	1.0	5.0A	25	E	30K	E
2N3793	S	N	MPS6530	5-118	AFA	0.25W	A	125	40	20	O	20	120	10M	0.4	10M			100M	T
2N3794	S	N	MPS6531	5-118	AFA	0.25W	A	125	40	20	O	100	600	10M	0.4	10M			100M	T
2N3795	S	P			PMS	5.0W	C	200	120	120	O	12	36	10M	0.2	10M			0.5M	T
2N3796																				
2N3797	Field Effect Transistors, see Table on Page 1-166																			
2N3798	S	P		8-278	AFA	0.36W	A	200	60	60	O	150	450	0.5M	0.2	0.1M	150	E	30M	T
2N3799	S	P		8-278	AFA	0.36W	A	200	60	60	O	300	900	0.5M	0.2		300	E	30M	T
2N3800	S	P		11-41	AFA	0.25W	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3801	S	P		11-41	AFA	0.25W	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3802	S	P		11-41	DFA	0.25W	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3803	S	P		11-41	DFA	0.25W	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3804	S	P		11-41	DFA	0.25W	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3805	S	P		11-41	DFA	0.25W	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3806	S	P		11-41	AFA	0.5W	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3807	S	P		11-41	AFA	0.5W	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3808	S	P		11-41	DFA	0.5W	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3809	S	P		11-41	DFA	0.5W	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3810	S	P		11-41	DFA	0.5W	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3811	S	P		11-41	DFA	0.5W	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3812	S	P		11-41	DFA	350M	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3813	S	P		11-41	DFA	350M	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3814	S	P		11-41	DFA	350M	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3815	S	P		11-41	DFA	350M	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3816	S	P		11-41	DFA	350M	A	200	60	60	O	150	450	0.1M	0.2	0.1M	150	E	100M	T
2N3817	S	P		11-41	DFA	350M	A	200	60	60	O	300	900	0.1M	0.2	0.1M	300	E	100M	T
2N3818	S	N		9-89	HPA	25W	C	175	60	60	S	5.0	50	400M	0.5	1.0A	3.0	E		
2N3819																				
thru	Field Effect Transistors, see Table on Page 1-166																			
2N3824																				
2N3825	S	N	MPS3398	5-86	RFC	0.25W	A	150	30	15	O	20		2.0M	0.25	2.0M			200M	T
2N3826	S	N	MPS3826	5-102	RFC	0.2W	A	150	60	45	O	40	160	10M					200M	T
2N3827	S	N	MPS3827	5-102	RFC	0.2W	A	150	60	45	O	100	400	10M					200M	T
2N3828	S	N	MPS6565	5-148	RFC	0.3W	A	150	40	40	O	30	200	12M					360M	T
2N3829	S	P			HSS	0.36W	A	200	35	20	O	30	120	30M	0.18	10M			350M	T
2N3830	S	N			HSS	1.0W	A	200	80	50	O	30		0.15A	0.3	0.15A			200M	T
2N3831	S	N			HSS	1.0W	A	200	70	40	O	35		0.15A	0.3	0.15A			200M	T
2N3832	S	N			HSS	0.2W	A	200	15	6.0	O	25	125	2.0M	0.4	10M			800M	T
2N3833	S	N			HPA				25	15	O	20		30M			2.5	E		
2N3834	S	N			HPA				25	15	O	20		30M			2.5	E		
2N3835	S	N			HPA				25	15	O	20		30M			2.5	E		
2N3836	S	N			PHS	1.0W	A	200	80	60	O	2K	20K	2.0A	1.8	5.0A			40M	T
2N3837	S	N			PHS	1.0W	A	200	100	80	O	2K	20K	2.0A	1.8	5.0A			40M	T
2N3838	S	N,P		11-45	HSA	0.25W	A	200	60	40	O	100	300	0.15A	0.4	0.15A	60	E	200M	T
2N3839	S	N			RFA	200M	A	200	30	15	O	30		3.0M					2.0G	T
2N3840	S	P			CHP	0.4W	A	200	50	50	O	30		0.2M	0.1	5.0M			6.0M	T
2N3841	S	P			CHP	0.3W	A	200	100	100	O	15		0.2M	0.12	5.0M			1.5M	T
2N3842	S	P			CHP	0.3W	A	200	120	120	O	10		1.0M		5.0M			1.0M	T
2N3843	S	N	MPS6512	5-109	RFC	0.2W	A	125	30	30	O	20	40	2.0M					60M	T
2N3843A	S	N	MPS6512	5-109	RFC	0.2W	A	125	30	30	O	20	40	2.0M					60M	T
2N3844	S	N	MPS6512	5-109	RFC	0.2W	A	125	30	30	O	35	70	2.0M					90M	T
2N3844A	S	N	MPS6512	5-109	RFC	0.2W	A	125	30	30	O	35	70	2.0M					90M	T
2N3845	S	N	MPS6512	5-109	RFC	0.2W	A	125	30	40	O	60	120	2.0M					126M	T
2N3845A	S	N	MPS6513	5-109	RFC	0.2W	A	125	30	30	O	60	120	2.0M					126M	T
2N3846	S	N			LPA	4.0W	A	175	300	200	O	10	60	10A	0.75	10A	50	E	10M	T
2N3847	S	N			LPA	4.0W	A	175	400	300	O	10	60	10A	0.75	10A	50	E	10M	T
2N3848	S	N			LPA	4.0W	A	175	300	300	O	10	60	15A	1.0	15A	50	E	10M	T
2N3849	S	N			LPA	4.0W	A	175	400	300	O	10	60	15A	1.0	15A	50	E	10M	T
2N3850	S	N			PHS	30W	C	200	100	80	O	50	150	1.0A	0.25	1.0A			20M	T
2N3851	S	N			PHS	30W	C	200	100	80	O	30	90	1.0A	0.25	1.0A			20M	T
2N3852	S	N			PHS	30W	C	200	60	40	O	50	150	1.0A	0.25	1.0A			20M	T
2N3853	S	N			PHS	30W	C	200	60	40	O	30	90	1.0A	0.25	1.0A			20M	T
2N3854	S	N	MPS6512	5-109	RFC	0.2W	A	150	18	18	O	35	70	2.0M					100M	T
2N3854A	S	N	MPS6512	5-109	RFC	0.2W	A	150	30	30	O	35	70	2.0M					100M	T
2N3855	S	N	MPS6512	5-109	RFC	0.2W	A	150	18	18	O	60	120	2.0M					130M	T
2N3855A	S	N	MPS6512	5-109	RFC	0.2W	A	150	30	30	O	60	120	2.0M					130M	T

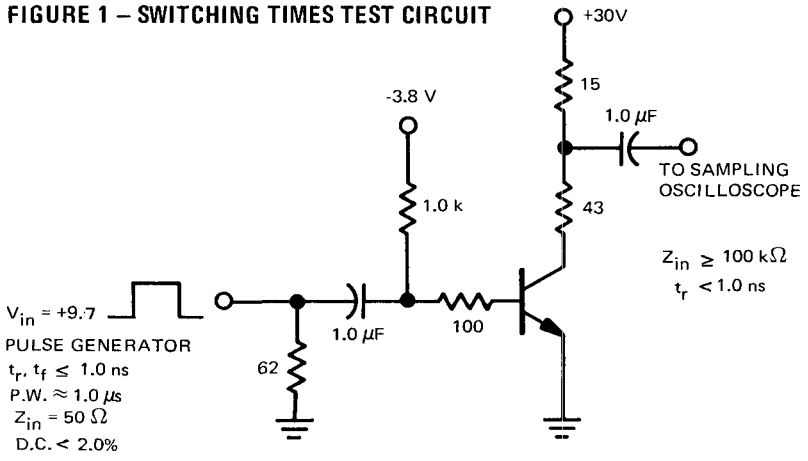
2N3724, 2N3725 — 2N4013, 2N4014 (continued)

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

Characteristic		Symbol	Min	Max	Unit
ON CHARACTERISTICS (continued)					
Collector-Emitter Saturation Voltage*		$V_{CE(sat)}$*			Vdc
(I_C = 10 mAdc, I_B = 1.0 mAdc)			-	0.25	
(I_C = 100 mAdc, I_B = 10 mAdc)	2N3724, 2N4013		-	0.20	
	2N3725, 2N4014		-	0.26	
(I_C = 300 mAdc, I_B = 30 mAdc)	2N3724, 2N4013		-	0.32	
	2N3725, 2N4014		-	0.40	
(I_C = 500 mAdc, I_B = 50 mAdc)	2N3724, 2N4013		-	0.42	
	2N3725, 2N4014		-	0.52	
(I_C = 800 mAdc, I_B = 80 mAdc)	2N3724, 2N4013		-	0.65	
	2N3725, 2N4014		-	0.80	
(I_C = 1.0 Adc, I_B = 100 mAdc)	2N3724, 2N4013		-	0.75	
	2N3725, 2N4014		-	0.95	
Base-Emitter Saturation Voltage*		$V_{BE(sat)}$*			Vdc
(I_C = 10 mAdc, I_B = 1.0 mAdc)			-	0.76	
(I_C = 100 mAdc, I_B = 10 mAdc)			-	0.86	
(I_C = 300 mAdc, I_B = 30 mAdc)			-	1.1	
(I_C = 500 mAdc, I_B = 50 mAdc)			0.9	1.2	
(I_C = 800 mAdc, I_B = 80 mAdc)			-	1.5	
(I_C = 1.0 Adc, I_B = 100 mAdc)			-	1.7	
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain—Bandwidth Product (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)		f_T	300	-	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 140 kHz)	2N3724, 2N4013	C_{ob}	-	12	pF
	2N3725, 2N4014		-	10	
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 140 kHz)		C_{ib}	-	55	pF
SWITCHING CHARACTERISTICS					
Turn-On Time	(V_{CC} = 30 Vdc, $V_{BE(off)}$ = 3.8 Vdc, I_C = 500 mAdc, I_{B1} = 50 mAdc) (See Figure 1)	t_{on}	-	35	ns
Delay Time		t_d	-	10	ns
Rise Time		t_r	-	30	ns
Turn-Off Time	(V_{CC} = 30 Vdc, I_C = 500 mAdc, I_{B1} = I_{B2} = 50 mAdc) (See Figure 1)	t_{off}	-	60	ns
Storage Time		t_s	-	50	ns
Fall Time	2N3724, 2N4013	t_f	-	25	ns
	2N3725, 2N4014		-	30	

* Pulse Test: Pulse Width = 300 μs, Duty Cycle = 1.0%.

FIGURE 1 — SWITCHING TIMES TEST CIRCUIT



RF POWER TRANSISTORS
(Listed in order of operating test frequency and power output)

ALL SILICON NPN

Type	f MHz	P_{out} W	@	P_{in} W
2N3295	30	0.3		0.012
2N3296	30	3.0		0.075
2N3297	30	12		1.2
2N2948	30	15		2.0
2N2951, 52	50	0.6		0.1
2N2949, 50	50	3.5		0.35
2N2947	50	15		2.0
2N3950	50	50		4.5
2N3298	80	0.1		-
2N3375	100	7.5		1.0
2N3818	100	15		3.0
2N3553	175	2.5		0.25
2N3961	175	4.0		0.5
2N3924	175	4.0		1.0
2N3925	175	5.0		1.3
2N3926	175	7.0		2.0
2N3927	175	12		4.0
2N3632	175	13.5		3.5
2N3137	250	0.7		0.1
2N3664	250	2.2		0.4
2N3866	400	1.0		0.1
2N3948	400	1.0		0.25
2N4012	400	3.0 (typ)		1.0
2N3375	400	3.0 (min)		1.0
2N3733	400	10		4.0

HIGH-VOLTAGE TRANSISTORS

Type	V_{CEO}	f_T (MHz) min	max	@	I_C mA
2N4924	100	100	500		20
2N4925	150	100	500		20
2N4926	200	30	300		10
2N4927	250	30	300		10

2N3818 (SILICON)

G_{PE} = 7 dB @ 100 MHz typ
P_{out} = 15 W @ 100 MHz

NPN silicon annular transistor for high-frequency power applications to 150 MHz.

All leads isolated from case

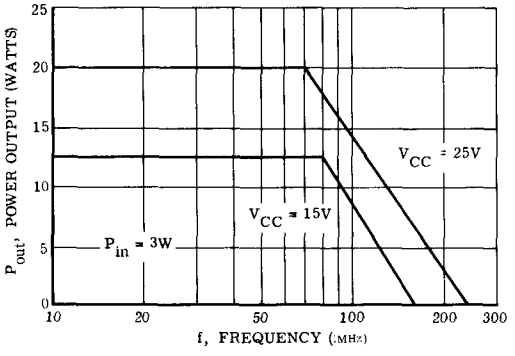
CASE 36
(TO-60)

MAXIMUM RATINGS *

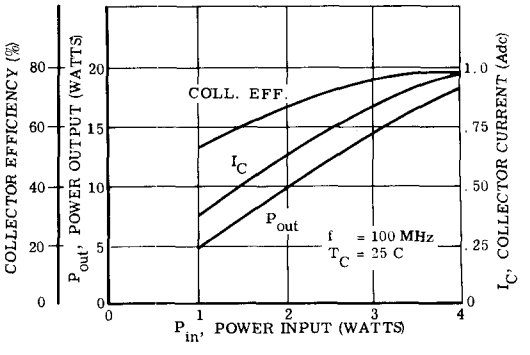
Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	60	Vdc
Collector-Emitter Voltage	V_{CES}	60	Vdc
Emitter-Base Voltage	V_{EB}	4	Vdc
Collector-Current (continuous)	I_C	2.0	Adc
Base-Current (continuous)	I_B	1.0	mAdc
Power Input (Nominal)	P_{in}	5.0	Watts
Power Output (Nominal)	P_{out}	20.0	Watts
Total Device Dissipation @ 25°C Case Temperature	P_D	25.0	Watts
Derating Factor above 25°C		167	mW/°C
Junction Temperature	T_J	175	°C
Storage Temperature	T_{stg}	-65 to +175	°C

* The maximum ratings as given for dc conditions can be exceeded on a pulse basis. *See electrical characteristics.*

POWER OUTPUT versus FREQUENCY



OUTPUT CHARACTERISTICS versus POWER OUT



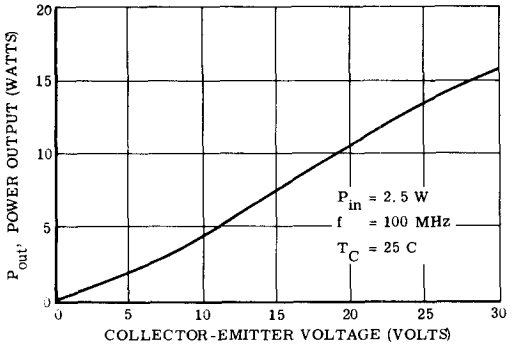
2N3818 (continued)

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Collector-Emitter Sustain Voltage I_C = 0.25 Adc, R_{BE} = 0	$V_{CES(sus)}$*	80	100	--	Vdc
Collector-Emitter-Open Base Sustain Voltage I_C = 0.25 Adc, I_B = 0	$V_{CEO(sus)}$*	40	--	--	Vdc
Collector-Emitter Current V_{CE} = 60 Vdc, V_{BE} = 0 V_{CE} = 50 Vdc, V_{BE} = 0, T_C = 175°C	I_{CES}	-- --	-- --	0.5 1.0	mAdc
Collector Cutoff Current V_{CB} = 50 Vdc, I_E = 0	I_{CBO}	--	--	1	μAdc
Emitter Cutoff Current V_{EB} = 4 Vdc, I_C = 0	I_{EBO}	--	--	100	μAdc
DC Current Gain I_C = 400 mAdc, V_{CE} = 2 Vdc I_C = 1 Adc, V_{CE} = 2 Vdc	h_{FE}	5.0 5.0	-- --	50 --	
Collector-Emitter Saturation Voltage I_C = 1.0 Adc, I_B = 250 mAdc	$V_{CE(sat)}$	--	--	0.5	Vdc
Base-Emitter Saturation Voltage I_C = 1.0 Adc, I_B = 250 mAdc	$V_{BE(sat)}$	--	--	2.0	Vdc
AC Current Gain V_{CE} = 2.0 Vdc, I_C = 400 mAdc, f = 50 mc	$\lvert h_{fe} \rvert$	3	--	--	
Collector Output Capacitance V_{CB} = 25 Vdc, I_E = 0, f = 100 kHz	C_{ob}	--	--	40	pF
Power Input P_{out} = 15 W, f = 100 MHz V_{CE} = 25 Vdc	P_{in}	--	3.0	3.75	Watts
Efficiency $I_{C(max.)}$ = 1 Adc	η	60	70	--	%

*Pulse Measurement: Pulse Width ≤ 100 μs, Duty Cycle = 2%.

POWER OUTPUT versus COLLECTOR VOLTAGE



POWER OUTPUT versus POWER INPUT