

RADIATION TEST SUMMARY

PART TYPE: 2N6804

DESCRIPTION: P-CHANNEL POWER MOS FET

REPORT NO: RD146

PARAMETERS PLOTTED:

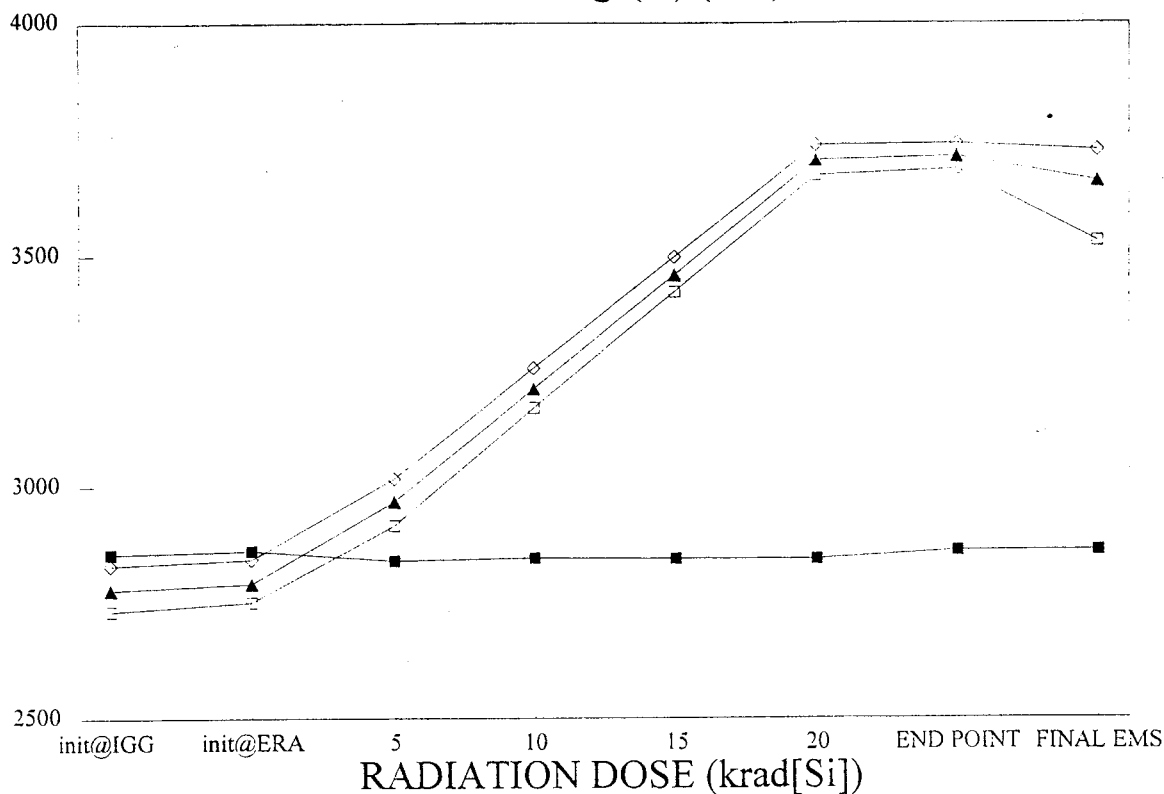
$V_{GS(TH)}$

NOTE

The results for I_{GSS} , $V_{(BR)DSS}$, $R_{DS(ON)}$ and I_{DSS} showed no significant change and hence these plots were not considered necessary.

RADIATION RESULTS FOR 2N6804

Plot for Vgs(th) (mV)



Control
 Limit
 Mean
 Min.
 Max.
 >2.0V<4.0V

DOSE krad	Mean-value	S.D.	Max.value	Min.value
INIT @ IGG	2777.7	35.2	2830.5	2731.8
0	2790.7	33.6	2843.6	2751.0
5	2967.7	37.0	3016.8	2916.2
10	3211.8	31.5	3255.8	3170.1
15	3457.7	29.7	3496.5	3421.6
20	3705.4	28.5	3738.0	3673.4
END POIN	3712.6	23.5	3739.8	3685.1
FINAL EMS	3661.1	78.3	3726.3	3530.1

Lot size for statistics : 4 devices

RD 146 Date Code 9518A

2N6804 SCC 5206/004-01B ISS 1D / V1.3 15/8/95 SMR

Socket adapter type: SA07-02

Fets per device: 1 (P)

Pin assignment : 1

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=====
1. -V(BR)DSS          100.0 ... 614.0    V
Switch : off          | Pin assignment : 1
-ID          0.250 mA  |
-----
2. -VGS              2000.0 ... 4000.0  mV
Switch : off          | Pin assignment : 1
-ID          0.250 mA  |
-----
3. -IGSS (FWD)       (  0.0 ... 100.0    nA
Switch : off          | Pin assignment : 1
-VGS         20.000 V  | Add. time       0 ms
-----
4. -IDSS             (  0 ... 250      uA
Switch : off          | Pin assignment : 1
-VGS         100.000 V | Add. time       0 ms
-----
5. RDS on            (  0.000 ... 0.300    Ohm
Switch : off          | Pin assignment : 1
-VGS         10.000 V  | -ID            7000.000 mA
-----
6. -VSD              2400.0 ... 4700.0  mV
Switch : off          | Pin assignment : 1
-IF          11000.000 mA |
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SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RAD_TEST_RD146 / V1.3 15/8/95 SMR

=====
Results file : 2N6804_RD146_3_IG6 from: 13.09.95 / 12:01:08
Operator : S.M.RALPHS
Part number : 2N6804
Lot number : D/C 3518A
Order number : RIR 61755
Vendor : IR
: S/Nos.03,04,05,06 CONTROL S/No.01
: TEST STEP #3 INITIAL ELEC. MEAS. AT IG6
: 2N6804 SCD 5005.004-01B ISS 10 / V1.3 15/8/95 SMR
=====

Test steps

1. -VDSR DSB	100.0	...	514.0	V
2. -VGS	2000.0	...	4000.0	mV
3. -IG63 (FWD)	0.0	...	100.0	nA
4. -IDSS	0	...	250	uA
5. RDS on	0.200	...	0.300	Ohm
6. -VSD	2400.0	...	4700.0	mV

=====

	1	3	4	5	6
1.1 [V]	124.6	124.0	125.2	127.2	124.6
2.1 [mV]	2854.7	2830.5	2778.6	2731.8	2770.0
3.1 [nA]	1.3	1.3	1.3	1.3	1.3
4.1 [uA]	1	1	2	1	1
5.1 [Ohm]	0.204	0.202	0.200	0.212	0.204
6.1 [mV]	3417.8	3343.8	3348.4	3233.8	3332.7

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RAD_TEST_RD146 / V1.3 15/8/95 SMR

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Results file : 2N6804_RD146_ERA from: 14.09.95 / ~~16.03.97~~
 Operator : S.M.RALPHS
 Part number : 2N6804
 Lot number : D70 9518A
 Order number : RIR 61755
 Vendor : IR
 : S/Nos.03,04,05,06 CONTROL 3/No.01
 : TEST STEP #4 INITIAL ELEC. MEAS. AT ERA
 : 2N6804 SOC 5206/004-01B ISS 10 / V1.3 15/8/95 SMR

Test steps

1. -V(BR)DSS	100.0	...	514.0	V
2. -VGS	2000.0	...	4000.0	mV
3. -IGSS (FWD)	2.0	...	100.0	nA
4. -IDSS	0	...	250	uA
5. RDS on	0.300	...	0.300	Ohm
6. -VSD	2400.0	...	4700.0	mV

	1	3	4	5	6
1.1 [V]	124.4	123.6	124.8	126.7	123.8
2.1 [mV]	2861.6	2843.6	2789.9	2751.0	2778.4
3.1 [nA]	1.3	1.4	1.4	1.5	1.4
4.1 [uA]	1	1	1	0	1
5.1 [Ohm]	0.200	0.197	0.196	0.205	0.200
6.1 [mV]	3490.3	3410.3	3440.1	3345.3	3335.1

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RAD_TEST_RD146 / V1.3 15/8/95 SMR

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=====
Results file   : 2N6804_RD146_@_5K   from: 14.09.95 / 17.08.95
Operator      : S.M.RALPHS
Part number   : 2N6804
Lot number    : D/C 9518A
Order number  : RIR 61755
Vendor       : IR
              : S/Nos.03,04,05,06 CONTROL S/No.01
              : TEST STEP #7 ELEC. MEAS. @ 5 KRAD
              : 2N6804 SOC 5209/004-01B ISS 1D / V1.3 15/8/95 SMR
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Test steps

1.	-V(BR)DSS	100.0	...	514.0	V
2.	-VGS	2000.0	...	4000.0	mV
3.	-IGSS (FWD)	0.2	...	100.0	nA
4.	-IDS	0	...	250	uA
5.	RDS on	0.000	...	0.300	Ohm
6.	-VSD	2400.0	...	4700.0	mV

	1	3	4	5	6
1.1 [V]	125.1	124.4	125.4	127.9	125.0
2.1 [mV]	2840.1	3016.8	2983.1	2916.2	2954.8
3.1 [nA]	1.4	1.4	1.4	1.4	1.4
4.1 [uA]	2	2	2	2	2
5.1 [Ohm]	0.210	0.212	0.205	0.224	0.214
6.1 [mV]	3495.3	3413.2	3445.6	3317.9	3366.0

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RAD_TEST_RD146 / V1.3 15/8/95 SMR

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 Results file : 2N6804_RD146_@_10K from: 14.09.95 / ~~13.10.95~~
 Operator : S.M.RALPHS
 Part number : 2N6804
 Lot number : D/C 9513A
 Order number : RIR 61755
 Vendor : IR
 : S/Nos.03,04,05,06 CONTROL S/No.01
 : TEST STEP #10 ELEC. MEAS. @ 10 KRAD
 : 2N6804 SOC 5206/004-01B I33 1D / V1.3 15/8/95 SMR
 =====

 Test steps

1.	-V(BR-DSS)	100.0	...	514.0	V
2.	-VGS	2000.0	...	4000.0	mV
3.	-IGSS (FWD)	0.0	...	100.0	nA
4.	-IDSS	0	...	250	uA
5.	RDS on	0.000	...	0.300	Ohm
6.	-VSD	2400.0	...	4700.0	mV

	1	3	4	5	6
1.1 [V]	124.7	124.8	125.7	127.9	125.0
2.1 [mV]	2846.6	3255.8	3222.9	3170.1	3198.4
3.1 [nA]	1.3	1.4	1.3	1.3	1.3
4.1 [uA]	2	2	3	1	1
5.1 [Ohm]	0.207	0.214	0.211	0.224	0.214
6.1 [mV]	3492.1	3405.4	3427.3	3394.9	3420.4

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RAD_TEST_RD146 / V1.3 15/8/95 SMR

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Results file   : ZN6804_RD146_@_15K   from: 14.09.95 / 19:27:42
Operator      : S.M.RALPHS
Part number   : ZN6804
Lot number    : D/C 9518A
Order number  : RIR 51755
Vendor       : IR
              : S/Nos.03,04,05,06 CONTROL S/No.01
              : TEST STEP #13 ELEC. MEAS. @ 15 KRAD
              : ZN6804 SOC 5206/004-01B ISS 1D / V1.3 15/8/95 SMR
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Test steps

1.	-V(BR)DS	100.0	...	514.0	V
2.	-VGS	2000.0	...	4000.0	mV
3.	-IGSS (FWD)	0.0	...	100.0	nA
4.	-IDSS	0	...	350	uA
5.	RDS on	0.000	...	0.300	Ohm
6.	-VSD	2400.0	...	4700.0	mV

	1	3	4	5	6
1.1 [V]	124.9	124.5	125.8	127.9	125.0
2.1 [mV]	2845.6	3496.5	3475.1	3421.6	3437.4
3.1 [nA]	1.3	1.3	1.3	1.3	1.3
4.1 [uA]	2	2	3	1	1
5.1 [Ohm]	0.207	0.216	0.214	0.225	0.217
6.1 [mV]	3492.3	3377.1	3383.7	3383.9	3425.4

=====
Results file : 2N6804_RD146_@_20K from: 14.09.95 / 20:15:11
Operator : S.M.RALPHS
Part number : 2N6804
Lot number : D/C 9518A
Order number : RIR 61755
Vendor : IR
: S\Nos.03,04,05,06 CONTROL 5/No.01
: TEST STEP #16 ELEC. MEAS. @ 20 KRAD
: 2N6804 SOC 5206/004-01B ISS 10 / V1.3 15/8/95 SMR

Test steps

1. -V(BR)DSS	100.0	...	614.0	V
2. -VGS	2000.0	...	4000.0	mV
3. -IGSS - FWD:	0.0	...	100.0	nA
4. -IDSS	0	...	250	uA
5. RDS on	0.000	...	0.500	Ohm
6. -VSD	2400.0	...	4700.0	mV

	1	3	4	5	6
1.1 [V]	125.0	124.5	125.4	127.5	124.7
2.1 [mV]	2844.1	3738.0	3729.1	3673.4	3681.0
3.1 [nA]	1.4	1.4	1.4	1.4	1.4
4.1 [uA]	2	2	2	1	1
5.1 [Ohm]	0.209	0.215	0.214	0.226	0.217
6.1 [mV]	3467.3	3421.1	3411.1	3411.9	3475.3

Results file : 2N6804_RD146_@_END from: 15.09.95 / 09:53:10
 Operator : S.M.RALPHS
 Part number : 2N6804
 Lot number : D/C 9518A
 Order number : RIR 51755
 Vendor : IR
 : S\Nos.03,04,05,06 CONTROL 3/No.01
 : TEST STEP #17 END POINT ELEC. MEAS. @ 19 HRS
 : 2N6804 SCC 5206/004-018 ISS 1D / V1.3 15/8/95 SMR

Test steps

1.	-V(BR)DSS	100.0	...	514.2	V
2.	-VGS	2000.0	...	4000.0	mV
3.	-IGSS (FWD)	0.0	...	100.0	nA
4.	-IDSS	0	...	250	uA
5.	RDS on	0.000	...	0.300	Ohm
6.	-VSD	2400.0	...	4700.2	mV

	1	2	3	4	5	6
1.1 [V]	124.6	124.0	124.9	127.1	124.4	
2.1 [mV]	2861.0	3739.8	3731.6	3693.8	3685.1	
3.1 [nA]	1.2	1.3	1.3	1.3	1.3	
4.1 [uA]	1	1	2	1	1	
5.1 [Ohm]	0.201	0.210	0.208	0.216	0.212	
6.1 [mV]	3490.3	3493.1	3473.3	3424.5	3462.3	

82-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RAD_TEST_RD146 / V1.3 15/8/95 SRF

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=====
Results file   : DN8804_RD146_0_FINAL   from: 22.09.95 / 08:09:05
Operator      : S.M.RALPHS
Part number   : DN8804
Lot number    : D70 9E16A
Order number  : RIR 61755
Vendor        : IR
              : S/Nos.03,04,05,06 CONTROL S/Ns.01
              : TEST STEP #13 FINAL ELED. MEAS. @ 153 HR3
              : DN8804 300 ED06-004-018 153 10 / V1.3 15/8/95 SRF
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Test steps

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-----
1. -V(8P)DSS          100.0    ...    514.0    V
2. -V66              2000.0   ...    4000.0   mV
3. -I66 (FWD)        ( 0.0 ) ...    100.0   nA
4. -ID66             ( 0 ) ...    250     uA
5. RDS on            ( 0.300 ) ...    0.300   Ohm
6. -VSD              2400.0   ...    4700.0   mV
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	1	3	4	5	6
1.1 [V]	124.3	124.0	125.1	127.3	124.5
2.1 [mV]	3562.2	3726.3	3716.1	3571.3	3674.3
3.1 [nA]	1.2	1.2	1.2	1.1	1.2
4.1 [uA]	1	2	2	1	1
5.1 [Ohm]	0.200	0.213	0.210	0.221	0.216
6.1 [mV]	3505.8	3524.1	3512.8	3451.3	3530.1