



RADIATION TEST SUMMARY

PART TYPE : IRFY9140

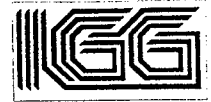
DESCRIPTION : P-CHANNEL MOSFET

REPORT NO. : RD 201

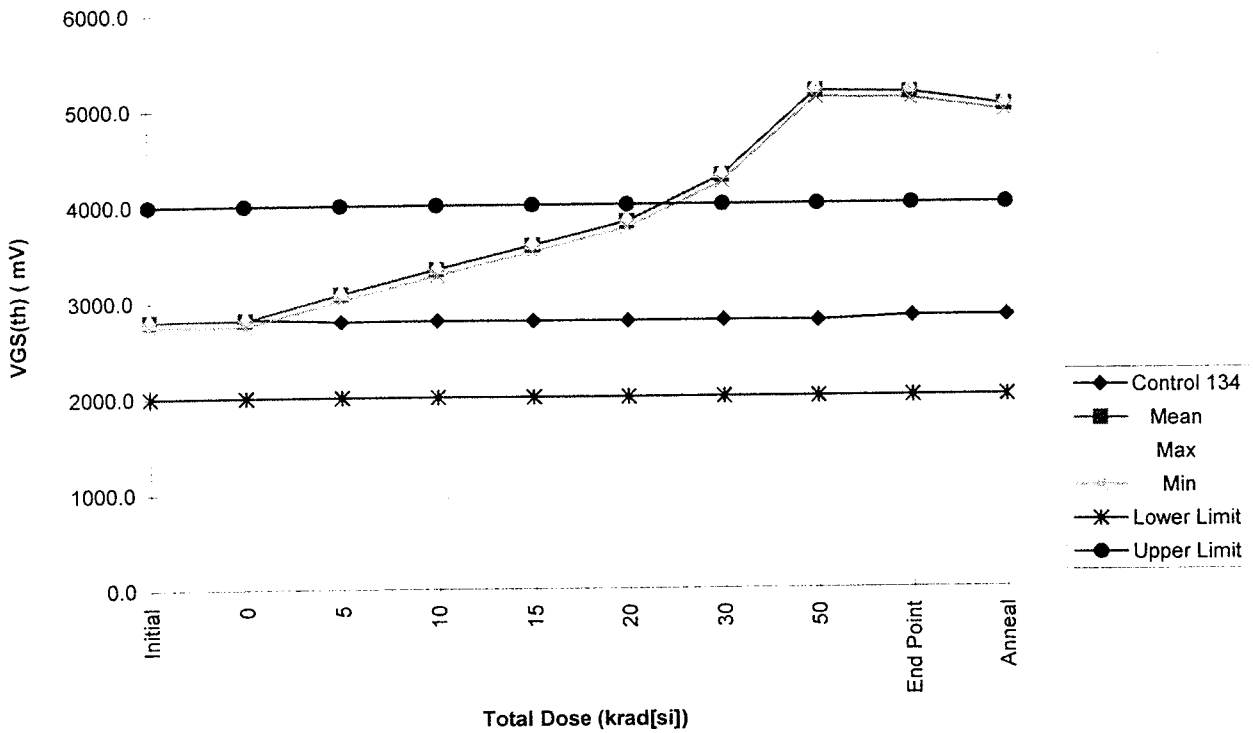
PARAMETERS PLOTTED :

VGS(th)

NOTE : The results for the remaining parameters showed no significant change and hence plots were not considered necessary.



Radiation Results for VGS(th)



Dose (kRad)	Control 134 (mV)	Mean (mV)	Max (mV)	Min (mV)	Lower Limit (mV)	Upper Limit (mV)	Std.Dev.
Initial	2816.5	2804.1	2825.7	2740.3	2000	4000	42.55
0	2826.4	2811.9	2836.4	2749.8	2000	4000	41.49
5	2792.4	3078.2	3104.3	3012.1	2000	4000	44.29
10	2798.4	3332.8	3361.4	3268.6	2000	4000	43.24
15	2792.5	3578.7	3614.1	3512.7	2000	4000	45.22
20	2793.0	3822.3	3861.0	3758.0	2000	4000	44.96
30	2794.3	4295.3	4339.3	4229.6	2000	4000	46.97
50	2785.3	5168.8	5224.3	5102.6	2000	4000	50.20
End Point	2824.8	5146.1	5205.9	5082.1	2000	4000	50.93
Anneal	2827.3	5011.2	5062.9	4948.4	2000	4000	47.20

Lot size for statistics : 4 devices

RD 201 Date Code 9534C

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=====
Results file   : RD201_IRFY9140_INIT_EMS@_IG6   from: 03.09.96 / 09:34:39
Operator      : PAUL RUSSELL
Part number   : IFRY9140
Lot number    : RD201
Order number  : D/C 95340
Vendor       : IR
              : CONTROL S/No 134 ; RAD SAMPLE S/NoS 135,136,137,139
              : INITIAL EMS @ IG6
              : IRFY9140 P0-PL-IG6-PL-0017 ISS.2 / V1.0 15/1/96 SMR
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Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2816.5	2824.8	2825.7	2825.7	2740.3
2.1 [nA]	1.7	1.8	1.8	1.8	1.8
3.1 [nA]	1.6	1.6	1.6	1.6	1.6
4.1 [uA]	0	0	0	0	0
5.1 [Ohm]	0.119	0.130	0.119	0.120	0.117
6.1 [V]	122.3	120.9	125.4	125.5	121.9

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_IRFY9140_INIT_EMS@ERA / V1.0 15/1/96 SMR

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=====
Results file : RD201_IRFY9140_INIT_EMS@ERA from: 05.09.96 / 09:21:38
Operator      : PAUL RUSSELL
Part number   : IRFY9140
Lot number    : RD201
Order number  : D/C 9534C
Vendor       : IR
              : CONTROL S/No 134 ; RAD SAMPLE S/NoS 135,136,137,139
              : INITIAL EMS @ ERA
              : IRFY9140 PO-PL-IGG-PL-0017 ISS.2 / V1.0 15/1/96 SMR
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Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2826.4	2830.6	2830.8	2836.4	2749.8
2.1 [nA]	1.9	1.9	1.9	1.9	1.9
3.1 [nA]	1.8	1.8	1.8	1.8	1.8
4.1 [uA]	0	0	0	0	0
5.1 [Ohm]	0.115	0.128	0.126	0.117	0.114
6.1 [V]	121.9	120.6	124.9	125.0	121.6

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RD201_IRFY9140_EMS @ 5_KRAD / V1.0 15/1/96 SMR

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=====
Results file   : RD201_IRFY9140_EMS @ 5_KRAD   from: 05.09.96 / 10:02:54
Operator      : PAUL RUSSELL
Part number   : IRFY9140
Lot number    : RD201
Order number  : D/C 9534C
Vendor       : IR
              : CONTROL S/No 134 ;RAD SAMPLE S/NoS 135,136,137,139
              : EMS @ 5 KRAD
              : IRFY9140 PO-PL-IG6-PL-0017 ISS.2 / V1.0 15/1/96
=====
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Test steps

```
-----
1. -VGS           2000.0   ...   4000.0   mV
2. -IGSS (FWD)   (  0.0   )...   100.0   nA
3. -IGSS (REV)   (  0.0   )...   100.0   nA
4. -IDSS         (  0     )...   250     uA
5. RDS on        (  0.000 )...   0.210  Ohm
6. -V(BR)DSS     100.0   ...   700.0   V
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	134	135	136	137	139
1.1 [mV]	2792.4	3102.3	3094.1	3104.3	3012.1
2.1 [nA]	1.9	1.8	1.9	1.8	1.8
3.1 [nA]	1.8	1.7	1.7	1.7	1.7
4.1 [uA]	0	0	0	0	0
5.1 [Ohm]	0.125	0.127	0.117	0.118	0.115
6.1 [V]	123.1	120.1	124.9	124.7	121.2

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_IRFY9140_EMS_@_10_KRAD / V1.0 15/1/96 SMR

=====
Results file : RD201_IRFY9140_EMS_@_10_KRAD from: 05.09.96 / 10:22:36
Operator : PAUL RUSSELL
Part number : IRFY9140
Lot number : RD201
Order number : D/C 9534C
Vendor : IR
: CONTROL S/No 134 ; RAD SAMPLE S/NoS 135,136,137,139
: EMS @ 10 KRAD
: IRFY9140 PO-PL-I66-PL-0017 ISS.2 / V1.0 15/1/96 SMR
=====

Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2798.4	3354.9	3346.3	3361.4	3268.6
2.1 [nA]	1.8	1.8	1.9	1.9	1.8
3.1 [nA]	1.8	1.7	1.8	1.7	1.7
4.1 [uA]	0	0	0	0	0
5.1 [Ohm]	0.144	0.131	0.118	0.120	0.135
6.1 [V]	123.2	120.2	124.8	125.1	121.5

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_IRFY9140_EMS_@_15_KRAD / V1.0 15/1/96 SMR

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=====
Results file   : RD201_IRFY9140_EMS_@_15_KRAD   from: 05.09.96 / 10:39:56
Operator      : PAUL RUSSELL
Part number   : IRFY9140
Lot number    : RD201
Order number  : D/C 95340
Vendor       : IR
              : CONTROL S/No 134 ; RAD SAMPLE S/NoS 135,136,137,139
              : EMS @ 15 KRAD
              : IRFY9140 PQ-PL-IGG-PL-0017 ISS.2 / V1.0 15/1/96 SMR
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```

Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2792.5	3599.3	3588.7	3614.1	3512.7
2.1 [nA]	1.9	1.9	1.9	1.9	1.9
3.1 [nA]	1.8	1.7	1.8	1.8	1.8
4.1 [uA]	0	1	0	0	0
5.1 [Ohm]	0.138	0.134	0.120	0.122	0.118
6.1 [V]	123.2	120.3	125.0	125.1	121.4

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_IRFY9140_EMS_@_20_KRAD / V1.0 15/1/96 SMR

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=====
Results file   : RD201_IRFY9140_EMS_@_20_KRAD   from: 05.09.96 / 11:09:09
Operator      : PAUL RUSSELL
Part number   : IRFY9140
Lot number    : RD201
Order number  : D/C 9534C
Vendor       : IR
              : CONTROL S/No 134 ; RAD SAMPLE S/NoS 135,136,137,139
              : EMS @ 20 KRAD
              : IRFY9140 PO-PL-IG6-PL-0017 ISS.2 / V1.0 15/1/96 SMR
=====

```

Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2793.0	3842.4	3827.6	3861.0	3758.0
2.1 [nA]	1.9	1.9	1.9	1.9	1.9
3.1 [nA]	1.8	1.7	1.8	1.8	1.7
4.1 [uA]	0	1	0	0	1
5.1 [Ohm]	0.125	0.143	0.121	0.123	0.120
6.1 [V]	123.1	120.2	124.9	125.0	121.4

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_IRFY9140_EMS_@_30_KRAD / V1.0 15/1/96 SMR

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=====
Results file   : RD201_IRFY9140_EMS_@_30_KRAD   from: 05.09.96 / 11:58:22
Operator      : PAUL RUSSELL
Part number   : IRFY9140
Lot number    : RD201
Order number  : D/C 95340
Vendor        : IR
               : CONTROL S/No 134 ; RAD SAMPLE S/NoS 135,136,137,139
               : EMS @ 30 KRAD
               : IRFY9140 PO-PL-IG6-PL-0017 ISS.2 / V1.0 15/1/96 SMR
=====

```

Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2794.3	4314.3	4297.8	4339.3	4229.6
2.1 [nA]	1.9	1.9	1.9	1.9	2.0
3.1 [nA]	1.8	1.8	1.8	1.8	1.8
4.1 [uA]	0	1	0	1	1
5.1 [Ohm]	0.125	0.145	0.125	0.133	0.124
6.1 [V]	123.2	120.4	125.0	125.2	121.6

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_IRFY9140_EMS_@_50_KRAD / V1.0 15/1/96 SMR

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=====
Results file   : RD201_IRFY9140_EMS_@_50_KRAD   from: 05.09.96 / 12:41:22
Operator      : PAUL RUSSELL
Part number   : IRFY9140
Lot number    : RD201
Order number  : D/C 9534C
Vendor       : IR
              : CONTROL S/No 134 : RAD SAMPLE S/NoS 135,136,137,139
              : EMS @ 50 KRAD
              : IRFY9140 PO-PL-100-0017 ISS.2 / V1.0 15/1/96 SMR
=====

```

Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2785.3	5178.6	5169.7	5224.3	5102.6
2.1 [nA]	2.0	2.0	2.1	2.1	2.1
3.1 [nA]	1.9	1.8	1.9	1.8	1.9
4.1 [uA]	0	2	1	1	1
5.1 [Ohm]	0.126	0.168	0.136	0.140	0.136
6.1 [V]	123.4	120.6	125.0	125.3	121.8

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
 RD201_IRFY9140_EMS_@_END_POINT / V1.0 15/1/96 SMR

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=====
Results file   : RD201_IRFY9140_EMS_@_END_POINT   from: 05.09.96 / 15:07:31
Operator      : S.M.RALPHS
Part number   : IRFY 9140
Lot number    : RD201
Order number  : D/C 95340
Vendor       : IR
              : CONTROL S/NO 134 ; RAD SAMPLE S/NOS 135,136,137,139
              : END POINT ELEC MEAS
              : IRFY9140 PO-PL-IGG-PL-0017 ISS.2 / V1.0 15/1/96 SMR
=====
  
```

Test steps

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=====
1. -VGS                2000.0    ...    4000.0    mV
2. -IGSS (FWD)        (    0.0    )...    100.0    nA
3. -IGSS (REV)        (    0.0    )...    100.0    nA
4. -IDSS              (    0    )...    250    uA
5. RDS on             (    0.000  )...    0.210  Ohm
6. -V(BR)DSS          100.0    ...    700.0    V
=====
  
```

	134	135	136	137	139
1.1 [mV]	2824.8	5155.3	5141.1	5205.9	5082.1
2.1 [nA]	2.2	2.3	2.3	2.3	2.3
3.1 [nA]	2.0	2.0	2.1	2.0	2.0
4.1 [uA]	0	2	1	1	1
5.1 [Ohm]	0.141	0.172	0.138	0.140	0.136
6.1 [V]	122.1	120.8	125.1	125.2	121.5

SZ-TESTSYSTEME Statistics 03 Vers. 2.15 for TA07F
RD201_POST_ANNEAL / V1.0 15/1/96 SMR

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=====
Results file   : RD201_POST_ANNEAL   from: 12.09.96 / 22:33:45
Operator      : S.RALPHS
Part number   : IRFY9140
Lot number    : D/C 95340
Order number  : RD201
Vendor       : IR
              : CONT.134 SAMPLE 135,136,137,138
              : POST ANNEAL ELEC.MEAS.
              : IRFY9140 PO-PL-IG6-PL-0017 ISS.2 / V1.0 15/1/96 SMR
=====

```

Test steps

1. -VGS	2000.0	...	4000.0	mV
2. -IGSS (FWD)	(0.0)	...	100.0	nA
3. -IGSS (REV)	(0.0)	...	100.0	nA
4. -IDSS	(0)	...	250	uA
5. RDS on	(0.000)	...	0.210	Ohm
6. -V(BR)DSS	100.0	...	700.0	V

	134	135	136	137	139
1.1 [mV]	2827.3	5018.4	5014.9	5062.9	4948.4
2.1 [nA]	2.1	2.3	2.3	2.3	2.3
3.1 [nA]	2.0	2.0	2.1	2.1	2.1
4.1 [uA]	0	2	1	1	1
5.1 [Ohm]	0.115	0.171	0.137	0.139	0.134
6.1 [V]	121.8	120.8	125.0	125.2	121.7