

Teardown and Technology Analysis of six EPC GaN transistors 1001, 1009, 1010, 1013, 1014, 1015

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1. Product Identification

The devices subject to teardown for this work are six EPC enhancement mode gallium nitride on silicon power transistors. Six devices are analyzed. The devices are sold as solder-bumped bare dice.

Table 1.1 Devices analyzed.

EPC device	V rating	Rmax (mOhm)	Die size (mmxmm)	Markings line 2	Markings line 3
1015	40	4	4.1x1.6	9C09	7331
1014	40	16	1.7x1.1	9?23	2351
1013	150	100	1.7x0.9	9D13	1319
1010	200	27	3.6x1.6	9B25	2891
1009	60	30	1.7x1.1	9B22	5162
1001	100	7	4.1x1.6	9B20	1481

2. External Appearance

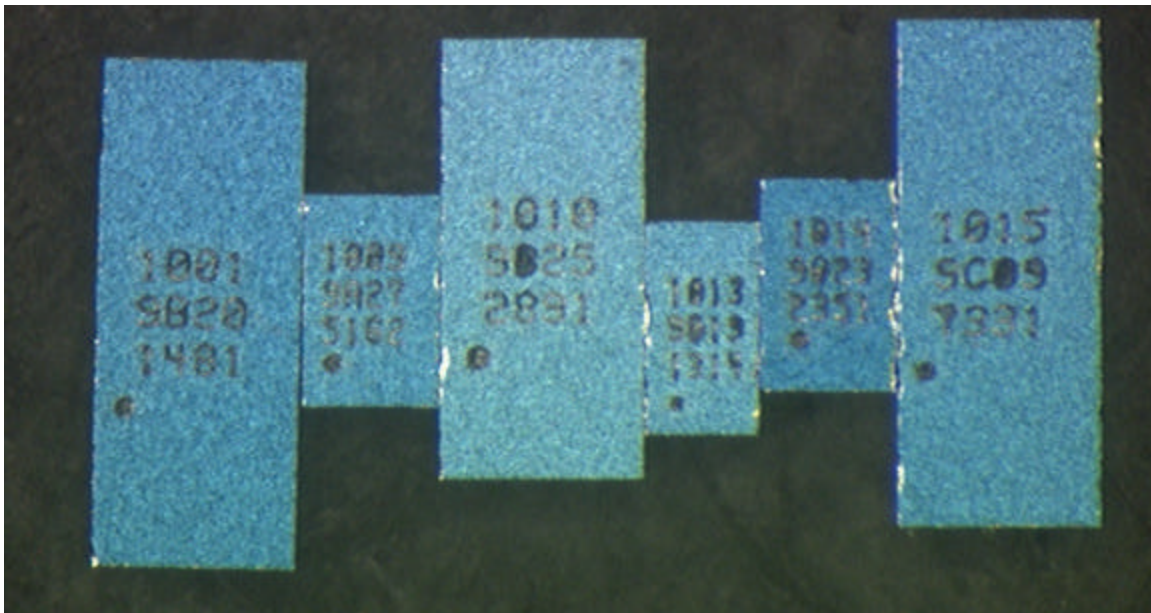


Figure 2.1: Devices as received, top view.

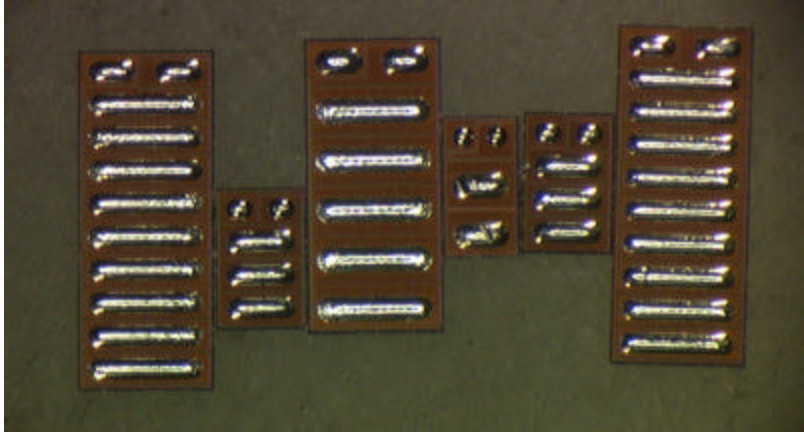


Figure 2.2: Devices as received, bottom view.

EPC device	V rating	Rmax (mO)	Die size (mm X mm)	Gate length (um)	S-G (um)	Shield length (um)	G-D (um)	Pitch (um)	Gate width (m)	Gate area (mm ²)
1015	40	4	4.1x1.6							
1014	40	16	1.7x1.1							
1013	150	100	1.7x0.9							
1010	200	27	3.6x1.6							
1009	60	30	1.7x1.1							
1001	100	7	4.1x1.6							

All will be revealed

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