TABLE I. DEVICE PARAMETERS 1/

JPL PART # ST12242-	MFG.	GENERIC PART #	PACKAGE STYLE	DETAIL SCREENING TESTS	ELECTRICAL CHARACTERISTICS & GROUP A TESTS	RADIATION (TID) LEVEL RAD(Si)
DN4678BR through DN4717BR	MSC	1N4678-1 through 1N4717-1	DO-35 2/	Table II	Tables III and IV	100k 3/

NOTES:

1/ This drawing, in conjunction with CS515581, imposes all requirements for procurement of these devices.

2/ Device physical dimensions shall conform to MIL-S-19500, Appendix F, Figure 17, outline number D-3C.

3/ Sufficient radiation tolerance to this TID level is guaranteed by design for this device. (See CS515581, Paragraph 4.7.7).

4. Final finish of leads shall be hot solder dip in accordance with MIL-S-19500.

5. This standard takes precedence over documents referenced herein.

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REVISION: B APPROVED BY: DATE:

APPROVED SOURCE(S)

THE ITEM LISTED IN THE APPROVED SOURCE BLOCK AND IDENTIFIED BY VENDOR NAME, ADDRESS, AND PART NUMBER WILL BE EVALUATED AND TESTED BY THE JPL ELECTRONIC PARTS RELIABILITY SECTION OR ITS DELEGATED ALTERNATE BEFORE BEING APPROVED FOR USE. NON-JPL USERS SHALL CHECK WITH THE ELECTRONIC PARTS RELIABILITY SECTION ON THE STATUS OF THE PART'S APPROVAL BEFORE USING.

VENDOR PART NO	VENDOR	JPL PART NO

JET PROPULSION LABORATORY CALIFORNIA INSTITUTE OF TECHNOLOGY

CAGE NO 23835

Procurement specification: CS515581
Screening specification: ZPP-2073-GEN

TITLE:

DIODE, SILICON
VOLTAGE REGULATOR, 250mW

DETAIL SPECIFICATION

ST 12242

Custodian: Electronic Parts Reliability Section 514

SHEET 1 OF 3

FILE (Sec. 514): F:\USERS\514\SPECS\ACT-DETL\ST12242.B

TABLE II. DETAIL SCREENING REQUIREMENTS

SCREEN (SEE MIL-S-19500, TABLE II)	TEST CONDITIONS/REQUIREMENTS
3. TEMPERATURE CYCLE	AS SPECIFIED.
9. INTERIM ELECTRICAL PARAMETERS	I_R @ V_R, V_Z @ I_{ZT} PER TABLE III, SUBGROUP 2.
10. HIGH TEMPERATURE REVERSE BIAS (HTRB) 1/	MIL-STD-750, METHOD 1038, CONDITION A. T_A= 150°C, AT 80% OF MINIMUM V_Z.
11. INTERIM ELECTRICAL AND DELTA PARAMETERS	SAME PARAMETERS AS STEP 9 ABOVE DELTA LIMITS: ΔI_R= ±20% OF INITIAL OR ±2uA, WHICHEVER IS GREATER ΔV_Z= ±2% OF INITIAL
12. POWER BURN-IN	MIL-STD-750, METHOD 1038, CONDITION B 240 HOURS AT T_A=30°C ± 5°C I_{ZM} PER TABLE IV.
13. FINAL ELECTRICAL TESTS A. PARAMETERS B. DELTA LIMITS	 SUBGROUPS 2 AND 3 OF TABLE III. SAME PARAMETERS AND LIMITS AS 11 ABOVE.

Notes: 1/ Omit HTRB test for devices with nominal $V_Z \leq 10V$.

TABLE III. GROUP A ELECTRICAL TESTS (T_A= 25°C)

TEST	MIL-STD-750 METHOD	TEST CONDITIONS	LIMITS		
			MIN	MAX	UNITS
SUBGROUP 2 REVERSE LEAKAGE, I_R @ V_R	4016	TABLE IV		TABLE IV	uA
ZENER VOLTAGE, V_Z @ I_{ZT}	4022	TABLE IV	TABLE IV	TABLE IV	VOLTS
SUBGROUP 3 VOLTAGE REGULATION, ΔV_Z		TABLE IV		TABLE IV	VOLTS
SUBGROUPS 4 THROUGH 7 1/					

Notes: 1/ These tests not applicable unless specified.

TABLE IV. ELECTRICAL CHARACTERISTICS (T_A= 25°C)

PART TYPE 1/	V_Z (NOM) (VOLTS)	I_R (MAX) @ V_R		VOLTAGE REGULATION, ΔV_Z 2/ (VOLTS)	I_{ZM} (mA)
		(uA)	(VOLTS)		
1N4678	1.8	7.5	1.0	0.70	120.0
1N4679	2.0	5.0	1.0	0.70	110.0
1N4680	2.2	4.0	1.0	0.75	100.0
1N4681	2.4	2.0	1.0	0.80	95.0
1N4682	2.7	1.0	1.0	0.85	90.0
1N4683	3.0	0.8	1.0	0.90	85.0
1N4684	3.3	7.5	1.5	0.95	80.0
1N4685	3.6	7.5	2.0	0.95	75.0
1N4686	3.9	5.0	2.0	0.97	70.0
1N4687	4.3	4.0	2.0	0.99	65.0
1N4688	4.7	10.0	3.0	0.99	60.0
1N4689	5.1	10.0	3.0	0.97	55.0
1N4690	5.6	10.0	4.0	0.96	50.0
1N4691	6.2	10.0	5.0	0.95	45.0
1N4692	6.8	10.0	5.1	0.90	35.0
1N4693	7.5	10.0	5.7	0.75	31.8
1N4694	8.2	1.0	6.2	0.50	29.0
1N4695	8.7	1.0	6.6	0.10	27.4
1N4696	9.1	1.0	6.9	0.08	26.2
1N4697	10.0	1.0	7.6	0.10	24.8
1N4698	11.0	0.05	8.4	0.11	21.6
1N4699	12.0	0.05	9.1	0.12	20.4
1N4700	13.0	0.05	9.8	0.13	19.0
1N4701	14.0	0.05	10.6	0.14	17.5
1N4702	15.0	0.05	11.4	0.15	16.3
1N4703	16.0	0.05	12.1	0.16	15.4
1N4704	17.0	0.05	12.9	0.17	14.5
1N4705	18.0	0.05	13.6	0.18	13.2
1N4706	19.0	0.05	14.4	0.19	12.5
1N4707	20.0	0.01	15.2	0.20	11.9
1N4708	22.0	0.01	16.7	0.22	10.8
1N4709	24.0	0.01	18.2	0.24	9.9
1N4710	25.0	0.01	19.0	0.25	9.5
1N4711	27.0	0.01	20.4	0.27	8.8
1N4712	28.0	0.01	21.2	0.28	8.5
1N4713	30.0	0.01	22.8	0.30	7.9
1N4714	33.0	0.01	25.0	0.33	7.2
1N4715	36.0	0.01	27.3	0.36	6.6
1N4716	39.0	0.01	29.6	0.39	6.1
1N4717	43.0	0.01	32.6	0.43	5.5

Notes: 1/ I_{ZT}= 50uA for all part types.
2/ ΔV_Z= V_Z @ 100uA I_{ZT} minus V_Z @ 10uA I_{ZT}.

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