

### POWER DISCRETES

#### Description

Quick reference data

$$V_R = 6.8 - 220V$$

$$I_z(\text{MAX}) = 21.6\text{mA} - 700\text{mA}$$

$$Z_z = 1\Omega - 550\Omega$$

$$I_R = 2\mu\text{A} - 150\mu\text{A}$$

#### Features

- ◆ Low dynamic impedance
- ◆ Hermetically sealed.
- ◆ 5 Watt applications
- ◆ Low reverse leakage currents
- ◆ Small package

These products qualified to MIL-PRF-19500/356.  
They can be supplied fully released as JAN,  
JANTX , JANTXV and JANS versions

#### Electrical Specifications

Electrical specifications @  $T_A = 25^\circ\text{C}$  unless otherwise specified.

Device Types	$V_z$ Nom	$V_z$ Min	$V_z$ Max	$I_z$ Test Current $T_A = +25^\circ\text{C}$	$Z_z$ Imped.	$Z_K$ Knee Imped.	$I_z$ Max DC Current	$V_z$ (reg) Voltage Reg.	$I_{zsm}$ @ $T_A = +25^\circ\text{C}$	$V_R$ Reverse Voltage	$I_R$ Reverse Current DC	$\alpha$ VZ Temp. Coeff.	$I_R$ Reverse Current DC $T_A = +150^\circ\text{C}$	$I_{zk}$ Test Current
	V	V	V	mA	$\Omega$	$\Omega$	mA	V	A	V	$\mu\text{A}$	%/°C	$\mu\text{A}$	mA
1N4954	6.8	6.46	7.14	175	1	1000	700	.7	29.3	5.2	150	.05	750	1.0
1N4955	7.5	7.13	7.87	175	1.5	800	630	.7	26.4	5.7	100	.06	500	1.0
1N4956	8.2	7.79	8.61	150	1.5	600	580	.7	24	6.2	50	.06	300	1.0
1N4957	9.1	8.65	9.55	150	2	400	520	.7	22	6.9	25	.06	200	1.0
1N4958	10.0	9.50	10.50	125	2	125	475	.8	20	7.6	25	.07	200	1.0
1N4959	11.0	10.45	11.55	125	2.5	130	430	.8	19	8.4	10	.07	150	1.0
1N4960	12.0	11.40	12.60	100	2.5	140	395	.8	18	9.1	10	.07	150	1.0
1N4961	13.0	12.35	13.65	100	3	145	365	.9	16	9.9	10	.08	150	1.0
1N4962	15	14.25	15.75	75	3.5	150	315	1.0	12	11.4	5.0	.08	100	1.0
1N4963	16	15.20	16.80	75	3.5	155	294	1.1	10	12.2	5.0	.08	100	1.0
1N4964	18	17.10	18.90	65	4.0	160	264	1.2	9.0	13.7	5.0	.085	100	1.0
1N4965	20	19.00	21.00	65	4.5	165	237	1.5	8.0	15.2	2.0	.085	100	1.0
1N4966	22	20.90	23.10	50	5.0	170	216	1.8	7.0	16.7	2.0	.085	100	1.0
1N4967	24	22.8	25.2	50	5	175	198	2.0	6.5	18.2	2.0	.09	100	1.0
1N4968	27	25.7	28.3	50	6	180	176	2.0	6.0	20.6	2.0	.09	100	1.0
1N4969	30	28.5	31.5	40	8	190	158	2.5	5.5	22.8	2.0	.09	100	1.0
1N4970	33	31.4	34.6	40	10	200	144	2.8	5.0	25.1	2.0	.095	100	1.0

**POWER DISCRETES**
**Electrical Specifications (Cont.)**

 Electrical specifications @  $T_A = 25^\circ\text{C}$  unless otherwise specified.

Device Types	$V_Z$ Nom	$V_Z$ Min	$V_Z$ Max	$I_Z$ Test Current $T_A = +25^\circ\text{C}$	$Z_Z$ Imped.	$Z_K$ Knee Imped.	$I_Z$ Max DC Current	$V_Z$ (reg) Voltage Reg.	$I_{ZSM}$ @ $T_A = +25^\circ\text{C}$	$V_R$ Reverse Voltage	$I_R$ Reverse Current DC	$\alpha$ VZ Temp. Coeff.	$I_R$ Reverse Current DC $T_A = +150^\circ\text{C}$	$I_{ZK}$ Test Current
	V	V	V	mA	$\Omega$	$\Omega$	mA	V	A	V	$\mu\text{A}$	$\%/^\circ\text{C}$	$\mu\text{A}$	mA
1N4971	36	34.2	37.8	30	11	220	132	3.0	4.5	27.4	2.0	.095	100	1.0
1N4972	39	37.1	40.9	30	14	230	122	3.0	4.0	29.7	2.0	.095	100	1.0
1N4973	43	40.9	45.1	30	20	240	110	3.3	3.5	32.7	2.0	.095	100	1.0
1N4974	47	44.7	49.3	25	25	250	100	3.5	3.2	35.8	2.0	.095	100	1.0
1N4975	51	48.5	53.5	25	27	270	92	4.0	3.0	38.8	2.0	.095	100	1.0
1N4976	56	53.2	58.8	20	35	320	84	4.4	2.8	42.6	2.0	.095	100	1.0
1N4977	62	58.9	65.1	20	42	400	76	5.0	2.5	47.1	2.0	.100	100	1.0
1N4978	68	64.6	71.4	20	50	500	70	5.5	2.2	51.7	2.0	.100	100	1.0
1N4979	75	71.3	78.7	20	55	620	63	6.0	2.0	56	2.0	.100	100	1.0
1N4980	82	77.9	86.1	15	80	720	58	6.6	1.8	62.2	2.0	.100	100	1.0
1N4981	91	86.5	95.5	15	90	760	52.5	7.5	1.6	69.2	2.0	.100	100	1.0
1N4982	100	95.0	105	12	110	800	47.5	8.0	1.4	76.0	2.0	.100	100	1.0
1N4983	110	104.5	115.5	12	125	1000	43	9.0	1.2	83.6	2.0	.100	100	1.0
1N4984	120	114.0	126.0	10	170	1150	39.5	10	1.0	91.2	2.0	.100	100	1.0
1N4985	130	123.5	136.5	10	190	1250	36.6	11	.8	98.8	2.0	.105	100	1.0
1N4986	150	142.5	157.5	8	330	1500	31.6	13	.75	114.0	2.0	.105	100	1.0
1N4987	160	152	168	8	350	1650	29.4	14	.70	121.6	2.0	.105	100	1.0
1N4988	180	171	189	5	450	1750	26.4	16	.60	136.8	2.0	.110	100	1.0
1N4989	200	190	210	5	500	1850	23.6	18	.50	152.0	2.0	.110	100	1.0
1N4990	220	209	231	5	550	2000	21.6	19	.50	167.0	2.0	0.115	100	1.0

**Notes:**

- (1) Operating Temperature:  $-55^\circ\text{C}$  to  $175^\circ\text{C}$ .
- (2) Storage Temperature:  $-65^\circ\text{C}$  to  $175^\circ\text{C}$ .

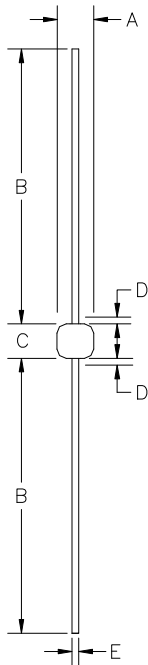
**POWER DISCRETES**

**Ordering Information**

Part Number	Description
1N4954 THRU 1N4990	Axial leaded hermetically sealed <sup>(1)</sup>

Note:  
 (1) Available in bulk or tape and reel packaging. Please consult factory for quantities.

**Outline Drawing**



DIM <sup>N</sup>	Dimensions				Note
	Inches		Millimeters		
	MIN	MAX	MIN	MAX	
A	.085	.140	2.16	3.56	-
B	1.00	1.30	25.4	33.0	-
C	.140	.185	3.56	4.70	-
D	-	.030	-	0.8	1
E	.036	.042	0.91	1.07	-

Note:  
 (1) Lead diameter uncontrolled over this region.

**Contact Information**

Semtech Corporation  
 Power Discretes Products Division  
 200 Flynn Road, Camarillo, CA 93012  
 Phone: (805)498-2111 FAX (805)498-3804